

PERSONAL CONSUMPTION EXPENDITURES

METHODOLOGY PAPERS:
U.S. National Income and
Product Accounts

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Introduction

This paper presents the conceptual basis and framework of personal consumption expenditures (PCE) in the national income and product accounts (NIPA's), describes the presentation of the estimates, and describes the sources and methods used to prepare annual, quarterly, and monthly estimates of PCE. This introduction discusses the conceptual basis and framework. It also defines the PCE measures that appear in the NIPA tables and indicates the tables in which they can be found. Subsequent sections describe in detail the sources and methods used to prepare the estimates of PCE.

1 Conceptual Basis and Framework

As described in "An Introduction to National Economic Accounting" in the March 1985 SURVEY OF CURRENT BUSINESS, the national economic accounts can be viewed as aggregations of accounts belonging to the individual transactors in the economy.¹ The basic approach used in national economic accounting is to group economic transactors into sectors and to set up uniform types of accounts that show the broad categories of economic transactions in which the sectors engage. Four sectors are commonly distinguished: Business, household, government, and foreign.² For each sector, a set of three accounts is created: A production account, which records the production attributable to that sector; an appropriation account, which records the sources of the sector's income, its current outlays, and its saving; and a saving-investment account, which records the sector's gross saving, net increase in assets, and net increase in liabilities. Taken together, these sector accounts constitute a double-entry system in which an outlay recorded in one account for one sector is also recorded as a receipt in another account, either for the same sector or for another sector.

The NIPA's are a combination of the sector accounts just described, a combination designed to display the value and composition of national output and the distribution of incomes generated in its production. In summary form, the NIPA's consist of five accounts: (1) The national income and product (NIP) account,

which is a consolidation of the four sector production accounts and the business appropriation account; (2) the personal income and outlay account, which is an expansion of the household appropriation account; (3) the government receipts and expenditures account, which is the government appropriation account; (4) the foreign transactions account, which is a consolidation of the foreign appropriation account and the foreign saving-investment account; and (5) the gross saving and investment account, which is a consolidation of the saving-investment accounts of the business, household, and government sectors. The five accounts of the NIPA's, with entries for 1988, are shown in table 1. PCE appears in the NIP account, where it is by far the largest component of final demand, and in the personal income and outlay account, where it is the dominant outlay.

1.1 Recording of PCE in the NIPA's: Overview

PCE measures the goods and services purchased by the personal sector. The personal sector in the NIPA's consists of persons resident in the United States. Persons are defined as individuals and the nonprofit institutions serving them. Persons resident in the United States are those who are physically located in the United States and who have resided, or expect to reside, in this country for 1 year or more. Employees of U.S. businesses sent abroad on assignments of 1 year or less are included, as are U.S. Government civilian and military personnel stationed abroad, regardless of the duration of their assignments.

The content of PCE is highlighted in table 2. This table shows the kinds of transactions included. Most of PCE consists of purchases of new goods and of services by individuals from business. In addition, PCE includes purchases of new goods and of services by nonprofit institutions, net purchases of used goods by individuals and nonprofit institutions, and purchases abroad of goods and services by U.S. residents traveling or working in foreign countries. Finally, PCE includes imputed purchases that keep PCE invariant to changes in the way that certain activities are carried out—for example, whether housing is rented or owned or whether employees are paid in cash or in kind.

1. This article, by Allan H. Young and Helen Stone Tice, is reprinted as Methodology Paper Series MP-1 (Washington, DC: U.S. Government Printing Office, March 1985).

2. In MP-1, the term "households" is used; in this paper, the NIPA terms "persons" or "personal sector" are used.

Table 1.—Summary National Income and Product Accounts, 1988

[Billions of dollars]

Account 1.—National Income and Product Account

[Billions of dollars]

Line		Line	
1	Compensation of employees.....	27	Personal consumption expenditures (2-3).....
2	Wages and salaries.....	28	Durable goods.....
3	Disbursements (2-7).....	29	Nondurable goods.....
4	Wage accruals less disbursements (3-12 and 5-4).....	30	Services.....
5	Supplements to wages and salaries.....	31	Gross private domestic investment (5-1).....
6	Employer contributions for social insurance (3-20).....	32	Fixed investment.....
7	Other labor income (2-8).....	33	Nonresidential.....
8	Proprietors' income with inventory valuation and capital consumption adjustments (2-9).....	34	Structures.....
9	Rental income of persons with capital consumption adjustment (2-10).....	35	Producers' durable equipment.....
10	Corporate profits with inventory valuation and capital consumption adjustments.....	36	Residential.....
11	Profits before tax.....	37	Change in business inventories.....
12	Profits tax liability (3-17).....	38	Net exports of goods and services.....
13	Profits after tax.....	39	Exports (4-1).....
14	Dividends (2-12).....	40	Imports (4-3).....
15	Undistributed profits (5-6).....	41	Government purchases of goods and services (3-1).....
16	Inventory valuation adjustment (5-7).....	42	Federal.....
17	Capital consumption adjustment (5-8).....	43	National defense.....
18	Net interest (2-15).....	44	Nondefense.....
19	National income.....	45	State and local.....
20	Business transfer payments (2-20).....		
21	Indirect business tax and nontax liability (3-18).....		
22	Less: Subsidies less current surplus of government enterprises (3-11).....		
23	Charges against net national product.....		
24	Capital consumption allowances with capital consumption adjustment (5-9).....		
25	Charges against gross national product.....		
26	Statistical discrepancy (5-12).....		
	GROSS NATIONAL PRODUCT.....		GROSS NATIONAL PRODUCT.....

Account 2.—Personal Income and Outlay Account

[Billions of dollars]

Line		Line	
1	Personal tax and nontax payments (3-16).....	7	Wage and salary disbursements (1-3).....
2	Personal outlays.....	8	Other labor income (1-7).....
3	Personal consumption expenditures (1-27).....	9	Proprietors' income with inventory valuation and capital consumption adjustments (1-8).....
4	Interest paid by consumers to business (2-18).....	10	Rental income of persons with capital consumption adjustment (1-9).....
5	Personal transfer payments to foreigners (net) (4-5).....	11	Personal dividend income.....
6	Personal saving (5-3).....	12	Dividends (1-14).....
		13	Less: Dividends received by government (3-10).....
		14	Personal interest income.....
		15	Net interest (1-18).....
		16	Interest paid by government to persons and business (3-7).....
		17	Less: Interest received by government (3-9).....
		18	Interest paid by consumers to business (2-4).....
		19	Transfer payments to persons.....
		20	From business (1-20).....
		21	From government (3-3).....
		22	Less: Personal contributions for social insurance (3-21).....
	PERSONAL TAXES, OUTLAYS, AND SAVING.....		PERSONAL INCOME.....

Table 1.—Summary National Income and Product Accounts, 1988—Continued

[Billions of dollars]

Account 3.—Government Receipts and Expenditures Account

[Billions of dollars]

Line			Line		
1	Purchases of goods and services (1-41).....	968.9	16	Personal tax and nontax payments (2-1).....	586.6
2	Transfer payments.....	568.6	17	Corporate profits tax liability (1-12).....	137.9
3	To persons (2-21).....	555.7	18	Indirect business tax and nontax liability (1-21).....	393.5
4	To foreigners (net) (4-6).....	12.9	19	Contributions for social insurance.....	444.6
5	Net interest paid.....	111.1	20	Employer (1-6).....	249.7
6	Interest paid.....	233.7	21	Personal (2-22).....	194.9
7	To persons and business (2-16).....	204.7			
8	To foreigners (4-7).....	29.1			
9	Less: Interest received by government (2-17).....	122.6			
10	Less: Dividends received by government (2-13).....	8.3			
11	Subsidies less current surplus of government enterprises (1-22).....	18.5			
12	Less: Wage accruals less disbursements (1-4).....	0			
13	Surplus or deficit (-), national income and product accounts (5-10).....	-96.1			
14	Federal.....	-145.8			
15	State and local.....	49.7			
	GOVERNMENT EXPENDITURES AND SURPLUS.....	1,562.7		GOVERNMENT RECEIPTS.....	1,562.7

Account 4.—Foreign Transactions Account

[Billions of dollars]

Line			Line		
1	Exports of goods and services (1-39).....	547.7	3	Imports of goods and services (1-40).....	621.3
2	Capital grants received by the United States (net) (5-11).....	0	4	Transfer payments to foreigners (net).....	14.7
			5	From persons (net) (2-5).....	1.9
			6	From government (net) (3-4).....	12.9
			7	Interest paid by government to foreigners (3-8).....	29.1
			8	Net foreign investment (5-2).....	-117.5
	RECEIPTS FROM FOREIGNERS.....	547.7		PAYMENTS TO FOREIGNERS.....	547.7

Account 5.—Gross Saving and Investment Account

[Billions of dollars]

Line			Line		
1	Gross private domestic investment (1-31).....	750.3	3	Personal saving (2-6).....	144.7
2	Net foreign investment (4-8).....	-117.5	4	Wage accruals less disbursements (1-4).....	0
			5	Undistributed corporate profits with inventory valuation and capital consumption adjustments... 80.3	
			6	Undistributed corporate profits (1-15).....	58.5
			7	Inventory valuation adjustment (1-16).....	-25.0
			8	Capital consumption adjustment (1-17).....	46.8
			9	Capital consumption allowances with capital consumption adjustment (1-24).....	513.6
			10	Government surplus or deficit (-), national income and product accounts (3-13).....	-96.1
			11	Capital grants received by the United States (net) (4-2).....	0
			12	Statistical discrepancy (1-26).....	-9.6
	GROSS INVESTMENT.....	632.8		GROSS SAVING AND STATISTICAL DISCREPANCY.....	632.8

NOTE.—Numbers in parentheses indicate accounts and items of counterentry in the accounts. For example, the counterentry for wage and salary disbursements, (2-7), is in account 2, line 7.

Table 2.—Content of PCE

Category of expenditure	Comments
1. Purchases of new goods and of services by individuals from business and government and purchases of the services of paid household workers. ¹	Purchases for business use are not included. Purchases from other individuals are not included. Purchases of dwellings are not included. Finance charges are not included. Payments for public goods, such as services provided by government-owned schools and hospitals, are not included. Health and casualty insurance premiums in excess of benefits paid are included.
2. Purchases of goods and services by nonprofit institutions from business, individuals, and government.	Purchases of goods and services consist of the current operating expenses, including capital consumption. Purchases of structures and equipment are not included.
3. Net purchases of used goods by individuals and nonprofit institutions from business and from government. ¹	Transactions between persons are not reflected in PCE because they cancel in the aggregation of the personal sector.
4. Purchases of goods and services abroad by U.S. residents.	These transactions are included in PCE for foreign travel and other, net, and in PCE. They are not included in the various detailed PCE components.
5. Purchases imputed to keep PCE invariant to whether: Housing and institutional structures and equipment are rented or owned. Employees are paid in cash or in kind. Farm products are sold or consumed on farms. Saving, lending, and borrowing are direct or are intermediated. Financial service charges are explicit or implicit.	PCE components entirely imputed are the space rent of owner-occupied housing, farm products consumed on farms, wages and salaries paid in kind, services furnished without payment by financial intermediaries except life insurance carriers and private noninsured pension plans, and expense of handling life insurance. Other imputed purchases are the imputed rental value of buildings and equipment owned and used by nonprofit institutions (included in their current operating expenditures), the imputed value of employer-paid life insurance, the imputed value of employer-paid health insurance, and the imputed value of the services furnished without payment by domestic securities dealers.

1. The source data underlying the estimates of many of the detailed PCE components include expenditures in the United States by foreign visitors and personal remittances in kind to foreigners. These transactions are excluded in the aggregate from total PCE by means of negative entries in

PCE for foreign travel and other, net.

1.1.1 Purchases of new goods and of services by individuals

The first category of table 2 constitutes most of PCE. It consists of purchases by individuals of new goods and of services from business and government and purchases of the services of paid household workers. Examples of goods and services purchased from business are autos, major appliances, food, clothing, medical care, utilities, and rental housing.³ Purchases from government are included in PCE if the goods and services are similar to those sold by private business. For these purchases, an offsetting entry is made in the government purchases component of final demand for the government sale—

a negative purchase—or in the surplus of government enterprises on the income side of the NIP account.

PCE does not include the business share of autos and other goods and services that are purchased for a combination of business and personal use.

PCE does not include purchases from individuals, other than the services of paid household workers.

PCE does not include purchases of dwellings—that is, structures and mobile homes—nor does it include landlords' purchases of durable goods; these are all included instead in private residential fixed investment.

PCE does not include finance charges. These are included in interest paid by consumers to business, a component of personal outlays.

PCE does not include payments to government for goods and services that either are administrative or

3. PCE also includes the imputed services of owner-occupied housing; this is taken up in the discussion of category 5 in table 2.

regulatory in nature or are provided privately primarily by nonprofit institutions; these payments are classified as personal nontax payments, a component of personal taxes and nontaxes. Thus, consumer postal charges and payments to State universities for room and board are included in PCE, but consumer payments for medical care to county hospitals and for tuition to State universities are included in personal nontax payments.⁴

PCE includes outlays for insurance. Purchases of health insurance and of casualty insurance from stock and mutual companies are measured in PCE by premiums paid to insurance carriers less the benefits and dividends paid by them.⁵ This definition includes in PCE the service of being insured. It avoids double-counting the reimbursed expenditures, which are accounted for separately as automobile repair, professional services, and the like. Purchases of life insurance are measured in PCE by the operating expenses of life insurance carriers, as discussed in the next section.

1.1.2 Purchases of goods and services by nonprofit institutions

The second category in table 2 is purchases of goods and services by nonprofit institutions. Nonprofit institutions serving individuals include trade unions and professional associations, clubs and fraternal organizations, educational institutions, foundations for education and research, and religious and welfare organizations. The expenditures of nonprofit institutions are not distributed among the individual commodities in PCE. Instead, certain components of PCE—primarily medical care, private education and research, and religious and welfare activities—include a measure of the services of nonprofit institutions serving individuals equal to their current operating expenses.⁶ For example, airline tickets purchased by a private university are included in PCE for private education and research, not in PCE for airline transportation. The accounting for nonprofit institutions serving individuals is discussed in the next section.

1.1.3 Used goods

The third category in table 2 is used goods. PCE includes the net purchases—purchases less sales—of used goods from other sectors; transactions between persons are not included because they cancel in the aggregation of personal sector transactions in used goods.

4. For a more complete discussion, see U.S. Department of Commerce, Bureau of Economic Analysis, *Government Transactions*, Methodology Paper Series MP-5 (Washington, DC: U.S. Government Printing Office, November 1988), p. 5.

5. Expenditures for health insurance provided by nonprofit organizations, such as Blue Cross-Blue Shield, are measured in PCE by the current operating expenses of the carriers. This treatment of nonprofit institutions is explained in the next section.

6. These expenses are net of receipts from meals, rooms, and entertainment, which are accounted for separately.

Net purchases include costs incurred in the transactions, such as dealers' margins. These entries define PCE so that it correctly measures total purchases by U.S. persons, whenever the goods were produced.

Including transactions in used goods makes PCE a more useful construct for the analysis of consumer behavior than it would be were it limited to the newly produced goods and services that constitute GNP. Net purchases of used goods also are included in other final demand components of the NIP account—investment, net exports, and government purchases. Except for the dealers' margins on the sale of used goods, these entries cancel in the derivation of GNP as the sum of the final demand components so that GNP consists of only newly produced goods and services.

1.1.4 Purchases of goods and services abroad by U.S. residents

The fourth category in table 2 is purchases of goods and services abroad by U.S. residents. When traveling abroad, U.S. residents pay foreigners for passenger fares and travel services and also purchase goods and other services. Conceptually, these outlays are components of PCE, but they are not part of U.S. production.

The entries for foreign travel and expenditures abroad by U.S. residents define PCE so that it correctly measures the total purchases of U.S. persons, wherever the goods and services were produced. These purchases are included in total in the PCE category, "foreign travel and other, net."⁷ They are not distributed among the individual commodities in PCE.

As in the case of used goods, including purchases abroad by U.S. residents makes PCE a more useful construct for the analysis of consumer behavior. Offsetting entries are made in imports in the NIP account in order to cancel these PCE entries in the derivation of GNP as the sum of the final demand components.

1.1.5 Imputed transactions

The fifth category in table 2 is imputations. GNP consists primarily of those goods and services reflected in the transactions of the market economy. The limited exceptions to the market transaction principle in the NIPAs are imputations that serve the purpose of keeping GNP, PCE, and other NIPA aggregates invariant to whether: (1) Housing and institutional structures

7. This PCE category also contains two negative entries that remove consumption by foreigners from the PCE estimates. (1) When traveling in the United States, foreigners make expenditures indistinguishable from those made by U.S. residents in the source data underlying many of the estimates of detailed PCE components. These outlays are removed in the aggregate from PCE and are shown instead as exports in the NIP account. (2) Expenditures on goods subsequently remitted to foreigners without quid pro quo (such as CARE packages) are removed in the aggregate from PCE and are shown instead as exports in the NIP account. These goods are treated as transfer payments; they are shown as a separate component of personal outlays in the personal income and outlay account and as a component of payments to foreigners in the foreign transactions account.

and equipment are rented or owned; (2) employees are paid in cash or in kind; (3) farm products are sold or consumed on the farm; (4) saving, lending, and borrowing are direct or are intermediated; and (5) intermediated financial transactions involve an explicit or implicit service charge. The accounting for imputed transactions is discussed in the next section.

The customary presentations of PCE are not along the lines of table 2. Instead commodities from the categories in table 2 are grouped in two ways—by type of product and by type of expenditure. A description of these groupings and the numbers of the NIPA tables in which PCE entries may be found are provided in the section called “Presentation of the Estimates.”

1.2 Recording of PCE in the NIPA's: Special features

1.2.1 Nonprofit institutions serving individuals

Nonprofit institutions serving individuals receive property income (that is, interest, rent, and dividends), receive payments for goods and services that they provide, pay compensation of employees and incur other operating expenses, make and receive transfer payments (that is, donations and grants), and purchase and rent buildings and equipment. These transactions are consolidated with those of individuals to form the NIPA personal income and outlay account.

The consolidation is illustrated in the three T-accounts in table 3, which includes hypothetical numbers as an aid to the reader. The first two accounts in table 3 are the appropriation accounts of nonprofit institutions and of individuals; they both include transactions between individuals and nonprofit institutions as well as those with other sectors.

- The appropriation account of nonprofit institutions shows as uses current operating expenses, transfer payments to individuals, and saving. The current operating expenses are wages, salaries, and other labor income paid; purchases from business; mortgage interest paid; and capital consumption allowances.⁸ It shows as sources sales of goods and services to individuals, transfer payments received, and property income received. Sales to individuals include both receipts for primary services (such as education) and receipts for other goods and services (such as university dining hall receipts). Transfer payments include both donations from individuals and business and payments from government in support of research.
- The appropriation account of individuals shows as uses purchases from business and from nonprofit institutions; wages, salaries, and other labor

income paid; interest paid; rent paid; transfer payments to nonprofit institutions; and saving. It shows as sources wages, salaries, and other labor income received; property income received; and transfer payments received from nonprofit institutions, from business, and from government.

The third account is the personal income and outlay account; entries in this account are obtained by consolidating the first two accounts. Sales of services by nonprofit institutions to individuals cancel the purchases of these services by individuals. Transfer payments to persons consists only of payments by business and government; transfer payments that occur between individuals and the nonprofit institutions serving them cancel in the consolidation. Wages, salaries, and other labor income is included both in wages, salaries, and other labor income and in PCE, however. These purchases of factor services by individuals and nonprofit institutions do not cancel in the consolidation because they measure both the value of personal sector production purchased by the personal sector and the factor income received by persons from personal sector production.

PCE is shown in two parts: Current expenditures of nonprofit institutions and expenditures by individuals. Each part consists of wages, salaries, and other labor income paid; rent paid; and other purchases. In each part, rent paid includes imputed rental charges, which are discussed in the next section.

The expenditures of nonprofit institutions are not distributed among the individual commodities in PCE. Instead, certain components of PCE—primarily medical care, private education and research, and religious and welfare activities—include the services of nonprofit institutions serving individuals. Thus, PCE for each of these components shows the total expenditures of persons, whether the services are provided by for-profit or by nonprofit organizations.

The expenditures of individuals for wages, salaries and other labor income paid represents payments to household workers; these payments are shown as a separate category of PCE. Rent paid is also shown as a separate category of PCE. The remainder of their expenditures are distributed by commodity; these expenditures include purchases of clothing, meals, rooms, and entertainment from nonprofit institutions.

In the estimates of PCE, the services of nonprofit institutions are measured net of their receipts from sales of clothing, meals, rooms, and entertainment to individuals, which are accounted for separately in other PCE categories of expenditures by individuals. For example, PCE for private education and research includes the educational services provided by nonprofit universities, while PCE for housing includes payments by individuals to nonprofit universities for dormitory charges.

8. The term “capital consumption allowances” is used to mean “capital consumption allowances with capital consumption adjustment,” the NIPA terminology for depreciation plus accidental damages valued at current replacement cost.

Table 3.—Consolidation of Appropriation Accounts of Nonprofit Institutions and Individuals

[Billions of dollars]

Appropriation Account of Nonprofit Institutions

Uses		Sources	
Current operating expenses	220	Sales of goods and services to individuals	220
Wages, salaries, and other labor income paid	10	Transfer payments received	90
Purchases from business	190	From individuals	70
Mortgage interest paid	10	From business	10
Capital consumption allowances	10	From government	10
Transfer payments to individuals	130	Property income received	50
Saving	10		
Outlays and saving	360	Receipts	360

Appropriation Account of Individuals

Uses		Sources	
Purchases	1,870	Wages, salaries, and other labor income received	2,160
From business	1,650	From individuals	130
From nonprofit institutions	220	From nonprofit institutions	10
Wages, salaries, and other labor income paid to household workers	130	From business	1,550
Interest paid ¹	80	From government	470
Rent paid ²	400	Property income received	620
Transfer payments to nonprofit institutions	70	Transfer payments received	600
Saving	830	From nonprofit institutions	130
		From business	20
		From government	450
Outlays and saving	3,380	Receipts	3,380

Personal Income and Outlay Account

Uses		Sources	
Personal consumption expenditures	2,400	Wages, salaries, and other labor income received	2,160
Current expenditures of nonprofit institutions	220	From individuals	130
Wages, salaries, and other labor income paid	10	From nonprofit institutions	10
Rent paid ³	20	From business	1,550
Other purchases	190	From government	470
Expenditures by individuals	2,180	Transfer payments to persons	490
Wages, salaries, and other labor income paid	130	From business	30
Rent paid ²	400	From government	460
Other purchases	1,650	Property income received	670
Interest paid by consumers to business ¹	80	By individuals	620
Saving	840	By nonprofit institutions	50
Personal outlays and saving	3,320	Personal income	3,320

1. Other than mortgage interest.

2. Includes imputed rental charges for owner-occupied housing.

3. Imputed rental charge for buildings and equipment owned and used by nonprofit institutions, equal to the sum of capital consumption allowances and mortgage interest in this example.

Note.—The following transactions are ignored in this example: Taxes; purchases on capital account; transfer payments to foreigners; purchases from government; and sales by nonprofit institutions to business, government, and foreigners.

1.2.2 Imputed transactions

The imputed transactions included in the NIPA's are a limited set of exceptions to the principle that GNP consists of market transactions in goods and services. In order to keep PCE invariant to how certain activities are carried out, imputations are made to place a market value on certain transactions that do not occur in the market economy, and that, therefore, are not observable in its records. In this process, some market transactions are restructured to provide a representation of the activity that is more appropriate for the NIPA's. Both a measure of production and the incomes associated with that production are imputed. The imputations described here are those for which purchases of the imputed production are included in PCE.

The effect of these imputed transactions on the NIP and personal income and outlay accounts is shown in table 4, which shows these two accounts with entries for 1988. The entries for the imputed transactions are shown in boldface both in table 4 and in tables 5, 6, and 7, which illustrate three of the more complex imputations.

Owner-occupied housing.—The imputation for owner-occupied housing creates a business that purchases housing and subsequently sells housing services to persons. The business has a production account that shows the receipts from these sales and the charges against these receipts and a saving-investment account that shows investment in housing and the charges for capital consumption on the housing stock. This treatment of housing is illustrated in table 5, which shows the production and saving-investment accounts for owner-occupied housing.

In the production account, purchases of housing services by persons are imputed; these services are measured as space rent, which is estimated by analogy with rental property.⁹ Gross product equals space rent less consumption of purchased materials and services—that is, expenditures that would be treated as expenses by owners of rental property.

Charges against gross product equals the sum of net interest paid (mortgage interest), indirect business taxes (property taxes), capital consumption allowances, subsidies (a negative entry), and the owner-occupants' income. The last, like corporate profits, is calculated as a residual. It is included in rental income of persons, in the case of nonfarm property, and in farm proprietors' income, in the case of farm property.

When this production account is consolidated with the rest of the NIP account, the imputed gross product originating in owner-occupied housing is included in GNP. As shown in table 4, the space rent is entered in PCE on the right side of the account, and the consumption of purchased materials and services cancels in the consolidation. The incomes, taxes, subsidies, and capital consumption allowances are entered

in the same categories of charges on the left side of the NIP account. Similarly, in the personal income and outlay account, space rent is included in PCE and in personal outlays; proprietors' income, rental income of persons, and net interest are included in personal income. In addition, purchases of newly constructed housing, shown in the saving-investment account in table 5, are business fixed investment and are included in gross private domestic investment on the right side of the NIP account.

In the absence of the imputation, the measure of housing services would not be invariant to changes in the ownership of the housing stock. The expenses of homeownership, such as expenditures for materials and supplies used in maintenance, would enter final demand (as PCE) rather than intermediate purchases; and purchases of owner-occupied housing would be part of PCE rather than of investment outlays. Property taxes and mortgage interest would be personal rather than business payments and therefore not included in charges against GNP; rental income on owner-occupied nonfarm housing, the owner-occupied rental component of farm proprietors' income, and capital consumption allowances for owner-occupied homes would not enter the national economic accounts at all.

Rental value of buildings and equipment owned and used by nonprofit institutions serving individuals.

—Because nonprofit institutions are considered persons in the NIPA's, an imputed rental charge for the buildings and equipment that they own and use is included in PCE as well as in the appropriate categories of factor and nonfactor charges against GNP. Purchases of buildings and equipment by nonprofit institutions for their own use are included in investment outlays rather than in PCE. The rental charge covers net interest (mortgage interest), indirect business taxes (property taxes), and capital consumption allowances. Unlike that for owner-occupied housing, the imputed rental charge does not include any imputed income. (The treatment of nonprofit institutions was taken up earlier.)

In the absence of this imputation, this component of current expenditures of nonprofit institutions would consist only of net purchases of buildings and equipment. PCE would not be invariant to changes in the ownership of such assets. As with owner-occupied housing, without the imputation, mortgage interest and property taxes would not enter GNP, because they would be personal rather than business outlays.

Farm products consumed on farms.—PCE includes estimates of the value of the food and fuel that are both produced and consumed on farms, and farm proprietors' income includes the margin on that production. Consumption of purchased materials and services cancels in the consolidation of the aggregate business sector.

In the absence of the imputation, these commodities would be treated as if consumed during production,

9. Space rent excludes charges for utilities, major appliances, furniture, and furnishings.

Table 4.—Imputed Transactions in PCE, 1988

[Billions of dollars]

National Income and Product (NIP) Account

Uses		Sources	
Compensation of employees	2,907.6	Personal consumption expenditures	3,235.1
Compensation paid in kind ¹	153.5	Space rent	348.0
Other	2,754.1	Nonprofit buildings and equipment ⁴	24.7
Proprietors' income ²	327.8	Farm products consumed on farms .....	.8
Owner-occupied farm housing	3.4	Compensation paid in kind ⁵	143.5
Farm products consumed on farms .....	.4	Services furnished without payment by domestic securities dealers	3.3
Other	324.0	Services furnished without payment by financial intermediaries except life insurance carriers and private noninsured pension plans	91.1
Rental income of persons ³	15.7	Expense of handling life insurance ⁶	45.4
Owner-occupied nonfarm housing	-15.0	Other	2,578.3
Other	30.7	Gross private domestic investment	750.3
Corporate profits ²	328.6	Residential	232.4
Services furnished without payment by domestic securities dealers	3.3	Owner-occupied housing	193.6
Other	325.3	Other	38.8
Net interest	392.9	Nonresidential	517.8
Owner-occupied housing	174.6	Nonprofit buildings and equipment	20.0
Nonprofit buildings and equipment	6.2	Other	497.9
Imputed interest paid to persons	233.1	Net exports of goods and services ⁷	-73.7
Depository institutions	91.1	Government purchases of goods and services ⁷	968.9
Life insurance carriers and private noninsured pension plans	141.9		
Other	-21.0		
Business transfer payments	29.0		
Indirect business tax and nontax liability	393.5		
Owner-occupied housing	57.5		
Nonprofit buildings and equipment	2.7		
Other	333.3		
Less: Subsidies less current surplus of government enterprises	18.5		
Owner-occupied housing .....	.2		
Other	18.3		
Capital consumption allowances ³	513.6		
Owner-occupied housing	79.6		
Nonprofit buildings and equipment	15.9		
Other	418.1		
Statistical discrepancy	-9.6		
Charges against gross national product	4,880.6	Gross national product	4,880.6

See footnotes at end of table.

and GNP and farm proprietors' income would not include their value. PCE would not include the value of this production and thus would not be invariant to whether farmers choose to consume their own products or to sell them and use the revenue to purchase farm products on the market.

Compensation in kind.—Both PCE and compensation of employees include estimates of compensation paid in kind. Three categories of wages and salaries in kind are identified in PCE: The value of food furnished to military personnel and to other employees, the value of standard clothing issued to military personnel, and the value of employees' lodging. In addition, two fringe benefits, employer-paid health insurance premiums and employer-paid life insurance premiums

are included in PCE and in the other labor income component of compensation.

In the absence of the imputation for compensation paid in kind, these expenditures would be employers' intermediate purchases rather than a factor cost—compensation of employees—and thus not included in GNP. PCE would not include these expenditures, nor would personal income include their value.

Imputed charges for the services of financial intermediaries.—The measures of PCE for the services of financial intermediaries include imputations for service charges that the intermediaries do not collect explicitly. These institutions are viewed as making explicit charges for some of the services that they render and making implicit charges for other services by pay-

Table 4.—Imputed Transactions in PCE, 1988—Continued

[Billions of dollars]

Personal Income and Outlay Account

Uses	Sources
Personal tax and nontax payments 586.6	Wage and salary disbursements 2,429.0
Personal outlays 3,333.1	Compensation paid in kind ¹ 10.7
Personal consumption expenditures 3,235.1	Other 2,418.3
Space rent 348.0	Other labor income 228.9
Nonprofit buildings and equipment ² 24.7	Compensation paid in kind ³ 132.8
Farm products consumed on farms8	Other 96.1
Compensation paid in kind ⁴ 143.5	Proprietors' income ⁵ 327.8
Services furnished without payment by domestic securities dealers 3.3	Owner-occupied farm housing 3.4
Services furnished without payment by financial intermediaries except life insurance carriers and private noninsured pension plans 91.1	Farm products consumed on farms4
Expense of handling life insurance ⁶ 45.4	Other 324.0
Other 2,578.3	Rental income of persons ⁷ 15.7
Interest paid by consumers to business 96.1	Owner-occupied nonfarm housing -15.0
Personal transfer payments to foreigners 1.9	Other 30.7
Personal saving 144.7	Personal dividend income 102.2
	Personal interest income 571.1
	Net interest 392.9
	Owner-occupied housing 174.6
	Nonprofit buildings and equipment 6.2
	Imputed interest paid to persons 233.1
	Depository institutions 91.1
	Life insurance carriers and private noninsured pension plans 141.9
	Other -21.0
	Interest paid by government to persons and business 204.7
	Less: Interest received by government ⁸ 122.6
	Interest paid by consumers to business 96.1
	Transfer payments to persons 584.7
	From business 29.0
	From government 555.7
	Less: Personal contributions for social insurance 194.9
Personal taxes, outlays, and saving 4,064.5	Personal income 4,064.5

1. Includes the following: Food furnished employees, including military and domestic service; standard clothing issued to military personnel; employees' lodging; employer-paid health insurance premiums; and employer-paid life insurance premiums.

2. With inventory valuation and capital consumption adjustments.

3. With capital consumption adjustment.

4. Appears in the PCE components representing the current operating expenditures of nonprofit institutions.

5. Includes the following: Food furnished employees, including military and domestic service; standard clothing issued to military personnel; employees' lodging; and employer-paid health insurance premiums. Employer-paid life insurance premiums are included in "expense of handling life insurance."

6. Includes employer-paid life insurance premiums.

7. Includes other imputations that do not affect PCE.

8. Includes the following: Food furnished employees, including military and domestic service; standard clothing issued to military personnel; and employees' lodging.

9. Includes employer-paid health insurance premiums and employer-paid life insurance premiums.

Table 5.—Production and Saving-Investment Accounts for Owner-Occupied Housing

Production Account

Uses	Sources
Farm proprietors' income ¹ Rental income of persons ² Net interest Indirect business tax and nontax liability Capital consumption allowances ² Less: Subsidies	Space rent ³ Less: Consumption of purchased materials and services
Charges against gross product	Gross product

Saving-Investment Account

Uses	Sources
Net purchases of owner-occupied housing units Net acquisition of financial assets Less: Net increase in liabilities	Saving Capital consumption allowances ²
Gross investment	Gross saving

1. With inventory valuation and capital consumption adjustments.

2. With capital consumption adjustment.

3. Excludes charges for utilities, major appliances, furniture, and furnishings.

ing depositors or policy holders less interest, dividends, and other property income than they earn on these funds. The NIPA's impute an estimate of this implicit charge and include it in PCE. The NIPA's also impute an income payment and include it in net interest paid.

The financial services imputations treat a financial institution as an intermediary, which channels saving into productive uses by giving savers the kind of assets they want (for example, bank deposits or life insurance policies) and giving business investors the kind of liabilities they want (for example, loans to carry inventories). Although the property income paid by business borrowers can be viewed as income attributable to the depositors or insurance beneficiaries, the intermediary typically does not pass on all this income to those who hold its liabilities. Three imputed financial service charges are shown in table 4: (1) Services furnished without payment by domestic securities dealers; (2) services furnished without payment by financial intermediaries except life insurance carriers and private noninsured pension plans—that is, by depository institutions; and (3) expense of han-

dling life insurance. These are discussed more fully in the following paragraphs.

Services furnished without payment by domestic securities dealers.—The PCE category brokerage charges and investment counseling includes an implicit charge equal in amount to the price spread on the transactions carried out by securities dealers with persons. 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, and the parallel one for transactions on behalf of business, would reduce business income because the trading gains would be classified as capital gains income, which is omitted in the NIPA's.

Services furnished without payment by financial intermediaries except life insurance carriers and private noninsured pension plans.—Depository institutions—that is, commercial banks, mutual savings banks, savings and loan associations, credit

unions, and regulated investment companies (including money market funds)—are considered to pay an imputed interest that the depositor uses to purchase those checking, bookkeeping, and investment services for which he does not pay an explicit service charge.

The nature of the interest imputation calculations for depository institutions is illustrated with T-accounts in table 6, which shows the income statement and the production account for depository institutions.¹⁰ In this example, net property income received by the institution consists entirely of monetary interest. The first panel of table 6 shows the T-account form of the income statement; the second, the income statement converted to a production account that includes the imputed transactions.

For depository institutions, the imputed service charge—or the equivalent imputed interest—consists of monetary interest received less monetary interest paid; it is entered on both sides of the production account. The sum of monetary and imputed service charges is equivalent to the operating expenses—that is, the charges against gross product (including profits) plus consumption of purchased materials and services. When this production account is consolidated with the rest of the NIP account, imputed interest is entered as an element of both PCE and net interest paid.¹¹

In the NIP account shown in table 4, imputed interest paid to persons is included both in net interest paid and in PCE, as services furnished without payment by financial intermediaries except life insurance carriers and private noninsured pension plans. When these entries are carried over to the personal income and outlay account, personal interest income is higher by the amount of the imputation, but personal saving is unaffected because PCE is increased by an equivalent service charge.

In the absence of the imputation, PCE would include only service charges actually paid by persons, and personal income would include only property income directly paid to persons.¹²

Expense of handling life insurance and private pension plans.—Life insurance carriers provide services that combine elements of both insurance and saving; private pension plans provide services to savers. These institutions earn property income on insurance and pension reserves, which have been contributed directly by—or for the benefit of—policy holders or pension beneficiaries and which are to be paid out to the beneficiaries as annuity or lump-sum distributions of income in the future.

10. This example covers stock companies only and ignores the treatment of mutual institutions.

11. Depository institutions also pay imputed interest to government, foreigners, and business. Government purchases and exports include services furnished without payment by depository institutions. Imputed interest paid to business and the imputed service charges paid by business cancel in the consolidation of the production accounts of financial and nonfinancial business.

12. In addition, in the absence of the imputation, gross product originating in depository institutions would be negative were property income receipts substantially in excess of property income payments.

In the NIPA's, life insurance premiums and benefits and pension plan contributions and benefits are disregarded; instead, the institutions are regarded as charging policyholders a fee equal to the institutions' operating expenses for the package of services provided. These imputed fees, which include profits in the case of stock companies, appear as "expense of handling life insurance" in PCE.

The treatment of this imputation is shown in table 7, which consists of the income statement and production T-accounts for the life insurance and pension business of stock life insurance carriers. Because the investment vehicles of these institutions are more diverse than those of depository institutions, table 7 includes the detail on property income omitted in table 6. In this example, net imputed interest paid is equal to net monetary interest and dividends received. When this production account is consolidated with the rest of the NIP account, the imputed fee for the costs of handling life insurance, which equals the operating expenses of life insurance companies, is added to PCE; the factor and nonfactor charges of which it is composed are added to the income side of the account.

The net effect of these transactions is to consolidate the saving of life insurance carriers and pension plans with that of households and institutions. Underwriting income (premiums less benefits) is treated as a transfer payment within the personal sector, and the property income and operating expenses of the institutions are treated as personal income and outlays. The gross product originating consists of the expense of handling life insurance less purchases of materials and business services.

Although personal saving is unaffected by the imputed interest paid by depository institutions, it is affected by the imputed interest paid by life insurance carriers. That paid by life insurance carriers and private noninsured pension plans, which is added to personal income, exceeds the imputed fee, which is added to PCE, by an amount equal to the excess of the net additions to policy reserves over underwriting income (premiums less benefits). In effect, the imputation performs a timing change, because it records the property income that has been withheld to the account of policy holders and beneficiaries as if it were actually disbursed to them in the current period.

In the absence of the insurance imputation, PCE for life insurance would be measured by underwriting income. Investment returns and increases in life insurance and pension reserves would be included in business income and saving rather than in personal income and saving.

1.3 Definitions

Personal consumption expenditures.—Goods and services purchased by individuals; the operating expenses of nonprofit institutions serving individuals; and the value of food, fuel, clothing, rent of dwellings,

Table 6.—Income Statement and Production Account for Depository Institutions

Income Account

Uses	Sources
Compensation of employees Consumption of purchased materials and services Monetary interest paid Capital consumption allowances Profits	Service charges (monetary) Monetary interest received
Outlays and profits	Receipts

Production Account

Uses	Sources
Compensation of employees Net interest paid Monetary interest paid Imputed interest paid Monetary interest received Less: Monetary interest paid Less: Monetary interest received Capital consumption allowances Profits	Total service charges Monetary Services furnished without payment by financial intermediaries except life insurance carriers and private noninsured pension plans Monetary interest received Less: Monetary interest paid Less: Consumption of purchased materials and services
Charges against gross product	Gross product

Note.—Monetary interest paid and monetary interest received are the only types of "property income" included in the imputed interest calculation in this example. This example covers stock institutions only.

and financial services received in kind by individuals. Net purchases of used goods are also included. Purchases of residential structures by individuals and of buildings and equipment used by nonprofit institutions serving individuals are classified as gross private domestic investment.

1.4 Classification conventions

The following conventions are used to classify each commodity as a good, either durable or nondurable, or as a service.

In general, goods are commodities that can be stored, or inventoried. Durable goods have an average life of at least 3 years; all other goods are considered nondurables. Services are commodities that cannot be stored and that are consumed at the place and time of purchase.

If commodities have both a good and service component, the classification generally is based on the relative importance of the two components.

- The following are the major commodities of this type that are classified as goods: Restaurant

meals, expenditures abroad by U.S. residents, and replacement parts whose installation cost is minimal.

- The following are the major commodities of this type that are classified as services: Airline transportation and hospital charges, which include food; natural gas and electricity; current operating expenses of nonprofit institutions; foreign travel by U.S. residents; expenditures in the United States by foreigners; and repair services, which include the cost of parts, except for replacement parts whose installation cost is minimal.

Other important conventions in the classification system include the following.

- All clothing and shoes are classified as nondurable goods, regardless of their average life.
- Margins on used goods are included in goods.
- Repair services for which separate data are not available are included in the goods category of the commodity being repaired.

Table 7.—Income Statement and Production Account for the Life Insurance and Pension Business of Life Insurance Carriers**Income Statement**

Uses	Sources
Death and annuity benefits paid Net additions to reserves Compensation of employees Consumption of purchased materials and services Monetary interest paid Capital consumption allowances Profits	Premiums and annuity considerations Property income received Monetary interest received Dividends received
Outlays and profits	Receipts

Production Account

Uses	Sources
Compensation of employees Net interest paid Monetary interest paid Imputed interest paid Property income received Monetary interest received Dividends received Less: Monetary interest paid to policyholders Less: Monetary interest received Capital consumption allowances Profits Less: Dividends received	Expense of handling life insurance Premiums and annuity considerations Property income received Less: Net additions to reserves Less: Death and annuity benefits Less: Monetary interest paid to policyholders Less: Consumption of purchased services
Charges against gross product	Gross product originating

Note.—This example covers only the life insurance and pension business of stock life insurance carriers. The real estate and accident and health insurance business of these carriers is excluded.

2 Presentation of the Estimates

In the NIPA tables, PCE is presented in one of two groupings of commodities—type of product or type of expenditure.

- PCE by type of product, the classification most frequently used, is based on the 3-way classification of commodities just mentioned. It consists of three broad categories, with additional detail under each: Durable goods, nondurable goods, and services. The most detailed presentation of PCE by type of product is shown annually in NIPA table 2.5, which is reproduced in appendix A. Less detail is shown quarterly and monthly.
- PCE by type of expenditure is a functional classification. Each category may include both goods and

services. There are 12 broad functional categories, with additional detail under each: Food and tobacco; clothing, accessories, and jewelry; personal care; housing; household operation; medical care; personal business; transportation; recreation; private education and research; religious and welfare activities; and foreign travel and other, net. PCE by type of expenditure is presented only on an annual basis in NIPA table 2.4, which is reproduced in appendix A.

2.1 NIPA tables

The estimates of PCE are published in the NIPA tables, which appear in the SURVEY (and reference volumes cited therein). Table 8 indicates the location, by NIPA table number, of the various annual, quarterly, and

Table 8.—Location of PCE in the NIPA Tables

[Entries are NIPA table numbers]

	Current dollars	1982 dollars	Price indexes
Personal consumption expenditures by type of product. ¹	1.1, 2.1, 2.2, 2.7#, 2.8#, 8.1‡, 9.1†, 9.2†	1.2, 2.3, 2.5*, 2.9#, 8.1‡	7.1, 7.4§, 7.9, 7.10*, 7.11#§, 8.1‡
Addenda:			
PCE by type of expenditure. ¹	2.4*	n.a.	n.a.
PCE for new and used autos.	1.17	1.18	n.a.
PCE for new trucks . . .	1.19	1.20	n.a.
Gross rental value of farm housing.	1.21*	1.22*	n.a.
Farm products consumed on farms.	1.21*	1.22*	n.a.
Nonfarm housing output	1.23*	1.24*	n.a.
PCE per capita by type of product.	8.2*	8.2*	n.a.
Imputations	8.9*	n.a.	n.a.

n.a. Not available.

1. See Appendix A for a reproduction of NIPA tables 2.2–2.5.

Note.—Except as noted, the tables include both annual and quarterly seasonally adjusted at annual rates and the price indexes are fixed-weighted price indexes with 1982 weights.

- * Annual estimates only, published in July issue of the *Survey of Current Business*.
- † Quarterly totals not seasonally adjusted, published in the July issue of the *Survey*.
- ‡ Percentage changes from preceding period.
- # Monthly estimates seasonally adjusted at annual rates, published in the "Current Business Statistics" section of the *Survey* and in this NIPA table in the July issue of the *Survey*.
- § Implicit price deflator.

monthly estimates of PCE in current dollars, and, where applicable, of estimates in constant dollars and of the associated price indexes.¹³ Annual estimates cover 1929 to the present; quarterly estimates in current dollars generally cover the beginning of 1946 to the present; corresponding estimates in constant dollars generally cover the first quarter of 1947 to the present; and monthly estimates cover January 1959 to the present.

Most presentations of the PCE estimates in the NIPA tables are for the three major types of product detail: Durable goods, nondurable goods, and services. Annual and seasonally adjusted quarterly estimates for these types in current dollars and in constant dollars are shown in NIPA tables 1.1 and 1.2, respectively. The associated fixed-weighted price indexes are shown in table 7.1; implicit price deflators in NIPA table 7.4; and chain price indexes, shown only as the percentage change from preceding period, in NIPA table 8.1. Percent changes from preceding period in annual and quarterly seasonally adjusted current and constant dollars, fixed-weighted price indexes, and implicit price deflators also are shown in NIPA table 8.1. Quarterly current-dollar totals, not seasonally adjusted, and seasonally adjusted monthly current-dollar estimates are shown in NIPA tables 9.1 and 2.8, respectively. Monthly seasonally adjusted constant-dollar estimates and the associated implicit price deflators are shown in NIPA tables 2.9 and 7.11, respectively. (As indicated in table 8, the monthly current- and constant-dollar estimates also appear in the “Current Business Statistics” section of the SURVEY.) Quarterly constant-dollar totals and monthly totals, not seasonally adjusted, are not prepared.

PCE estimates at the more detailed type of product level also are shown in the NIPA tables. Annual and seasonally adjusted quarterly estimates of PCE in current dollars and in constant dollars are shown in NIPA tables 2.2 and 2.3, respectively. The associated fixed-weighted price indexes are shown in table 7.9. Quarterly current-dollar totals, not seasonally adjusted, are shown in NIPA table 9.2.

The most detailed estimates of PCE are shown annually in current and in constant dollars in NIPA tables 2.4 and 2.5, respectively. In NIPA table 2.4, commodities are grouped by type of expenditure, a functional classification. In NIPA table 2.5, the commodities are grouped by major type—durable goods, nondurable goods, and services. Annual fixed-weighted price indexes corresponding to the detail in NIPA table 2.5 are shown in NIPA table 7.10. Annual and seasonally adjusted quarterly fixed-weighted price indexes for three special expenditure categories—food, energy, and all other PCE—are shown in NIPA table 7.1.

Annual and quarterly estimates of the PCE components of auto and truck output are in NIPA tables 1.17

and 1.19 in current dollars and in NIPA tables 1.18 and 1.20 in constant dollars.

Annual estimates of the PCE components that also are part of farm and of housing sector output are in NIPA tables 1.21 and 1.23 in current dollars and in NIPA tables 1.22 and 1.24 in constant dollars.

Annual per capita PCE estimates in current and in constant dollars are shown in NIPA table 8.2.

Annual estimates of the PCE components classified as imputations are shown in NIPA table 8.9.

2.2 Schedule

The initial monthly seasonally adjusted estimates of PCE are prepared about 4 weeks after the end of the month, revised in each of the following months until the preparation of the final estimate of the corresponding quarterly PCE estimate. Advance quarterly seasonally adjusted estimates of PCE are prepared in the first month after the end of the quarter, revised a month later (preliminary estimate), and revised again the following month (final estimate). No further revisions are made in the quarterly or monthly estimates until the annual revisions, which usually occur each July and cover the 3 most recent years. Following the third annual revision, no further revisions are made in the estimates until the comprehensive revisions (often referred to as “benchmark revisions”), which usually occur every 5 years.

3 Overview of Principal Source Data and Estimating Methods

3.1 Current-dollar estimates

The current-dollar estimates of PCE are based on statistical reports, primarily from the Census Bureau, but also from other government agencies; on government administrative and regulatory agency reports; and on reports from private organizations, hereafter denoted trade sources.

- The Census Bureau statistical reports cover the following: Sales, inventories, and cost of purchased goods for manufacturing and trade; service industry receipts and expenses; and residential rental payments.
- The statistical reports of other government agencies cover the following: Cash receipts by farmers for agricultural products, sales of electricity and fuel oil, international trade in services, receipts and expenses for higher education, and prices paid by consumers.
- Government administrative and regulatory agency reports cover the following: Federal and State and local government revenues and purchases, merchandise trade, sales of gasoline, wages and

13. Table 8 does not include references to NIPA table 2.1, which shows PCE as part of personal outlays and of the disposition of personal income.

salaries, revenues from transportation services, brokerage commissions, and bank service charges.

- Reports from trade sources cover the following: Sales to persons of motor vehicles, tires, drugs, natural gas, gasoline and oil, water and sanitary services, telephone and telegraph service, transit service, brokerage and investment counseling, broadwoven fabric, yarn, and knit fabric; expenses for life insurance; premiums and benefits for non-life insurance; receipts and expenses for hospitals; and expenses of religion.

Most of these source data are “value data,” that is, they embody both the quantity and the price dimensions that are required for current-dollar estimates. Other source data provide information on physical quantities and related prices, and the price and quantity data are combined to obtain value estimates.

The source data used for PCE are complete only for “benchmark” years, that is, years in which BEA’s benchmark input-output accounts are used to establish the level of PCE and of its components during a comprehensive revision. In nonbenchmark years, as well as for quarterly and monthly estimates, most of the estimates are prepared by interpolation and extrapolation, using indicator series.

There are significant differences among the methodologies for the current-dollar benchmark annual, non-benchmark annual, and quarterly and monthly PCE estimates. These differences are shown in table 9, which provides an overview of the source data and estimating methods used. Table 9 also identifies the PCE components for which there have been major changes in source data, estimating methods, or both during the period covered by the estimates.

For benchmark years, the current-dollar PCE estimates are based on the final demand components of BEA’s benchmark input-output (I-O) accounts, adjusted to reflect the definitional, classificational, and statistical changes incorporated into the NIPA’s since completion of the I-O accounts. These accounts provide information on the flow of commodities—goods, services, and structures—from each producing industry to other industries and to final users—that is, persons, governments, foreigners, and business on capital account. These accounts are prepared for years in which the Census Bureau conducts the quinquennial economic censuses, which provide extensive data on agriculture, transportation, manufactures, wholesale trade, retail trade, and service, construction, and mineral industries; and the quinquennial censuses of governments, which provides extensive data on State and local governments.

In the benchmark I-O accounts, the estimating methods used for purchases by persons depend on the type of source data available. For a relatively small number of commodities, purchases by persons are estimated directly. For most commodities, purchases by persons are estimated using methodologies that are variations of the commodity-flow method, which

links domestic commodity sales, domestic commodity supply, and commodity purchases by industries and by final users. These detailed I-O commodity estimates are grouped into the PCE categories used for the NIPA’s.

At present, the most recent benchmark I-O accounts reflected in the NIPA’s are for 1977. Other benchmark years based on I-O accounts are 1958, 1963, 1967, and 1972. Before the use of I-O benchmarks, a less systematic commodity-flow procedure was used for 1929–39 (when the census of manufactures was biennial), 1947–48, 1951, 1954, and 1956. See [161, pp. 103–22] and [163, pp. 74–82] for a description of this procedure.

For nonbenchmark years, the current-dollar annual estimates of PCE are not prepared at the commodity level but are prepared at the level of the PCE categories. For most PCE categories, the estimates are prepared by interpolating between and extrapolating from the benchmark estimates using less comprehensive indicator series; this estimating method assumes that some relationship underlying the benchmark estimates remains unchanged. For example, the use of all receipts of domestic legal service establishments as the indicator for the PCE legal services category assumes that the share of total domestic purchases attributable to persons remains unchanged. For most of the PCE categories for which benchmark estimates are based on quinquennial census data, the indicator series are derived from annual Census Bureau surveys of retail store sales and service industry receipts. For other PCE categories, a variety of related indicator series are used. In a few cases, the source data and estimating methods used are the same for both the benchmark and the nonbenchmark estimates.

Current-dollar quarterly and monthly estimates of most PCE categories are prepared using indicator series to interpolate between and extrapolate from the annual estimates. Among the more important monthly indicator series are retail store sales, unit sales of automobiles and trucks, wages and salaries, securities transactions, quantities of gasoline purchases, changes in the housing stock, and utility usage; where these series provide quantity measures, monthly price indexes are used to obtain value indicators.

For some PCE categories, such as net foreign travel and several types of insurance, only quarterly source data are available; for still others, only annual source data are available. Where monthly, quarterly, or both monthly and quarterly source data are not available, monthly estimates are prepared by judgmental interpolation and extrapolation of constant-dollar annual or quarterly series; the constant-dollar monthly series are then converted to current dollars using monthly price indexes.

Table 9.—Summary of Source Data and Estimating Methods Used in Preparing Current-Dollar Estimates of PCE

Line in NIPA table 2.5	Category and selected commodity ¹	Benchmark estimates ²	Indicator series used to interpolate and extrapolate	
			Nonbenchmark annual estimates ³	Quarterly estimates ⁴
2	Durable goods:			
3	Motor vehicles and parts:			
4	New autos ⁵	Unit sales and average list prices from trade sources; discounts and freight charges from BLS; sales taxes from ARTS and QS. PCE share based on registrations, from trade source.	Unit sales, PCE share, average list prices from trade sources. Monthly information on discounts, freight charges etc. from BLS.	Historical: Unit sales, PCE share, average list price from trade sources. Discounts, freight charges, etc. from BLS. Current: Same as historical except information on options purchased by nameplate not available.
5	Net purchases of used autos. ⁶	Dealers' margin: Sales from CRT, margin rate from ARTS. ⁴ Net transactions: Change in net stock of used autos from BEA estimates. PCE share based on registrations from trade source. ⁷ Employee reimbursement: Expenditures from Federal budget data.	Dealers' margin: 3rd and 2nd July: Franchised dealers, wholesale value of sales from trade sources and margin rate from ARTS; independent dealers margin from ARTS. 1st July: Sales from trade sources and MRTS times previous year's margin. ⁸ Net transactions and employee reimbursement: Same as benchmark.	Dealers' margin: Used car sales and auction price from trade sources, margin rates from annual estimate. Net transactions: Residual. Employee reimbursement: Judgmental trend.
6	Other motor vehicles ⁶ .	Shipments of new vehicles from CM; sales and dealer inventories from CRT; margin rate from ARTS; exports from Census. PCE share based primarily on TIUS.	New trucks: Abbreviated commodity-flow estimate based on ASM, Census merchandise trade data, and trade sources. 1st July: Unit sales from trade sources and price from CPI. Used trucks: Business purchases of new trucks 5 years ago; margin extrapolated by purchases of new trucks by persons. Recreational vehicles: 3rd and 2nd July: Retail trade sales from ARTS. 1st July: Retail trade sales from MRTS.	New trucks: Unit sales from trade sources and price from CPI. Used trucks and dealers' margin on used trucks: Purchases of new trucks by persons. Recreational vehicles: Retail sales from MRTS.
7	Tires, tubes, accessories, and other parts.	Shipments from CM and CWT. PCE share for tires and tubes based primarily on trade source.	Retail control using ARTS (3rd and 2nd July) and MRTS (1st July).	Retail control using MRTS.
8	Furniture and household equipment:			
9	Furniture including mattresses and bedsprings.	Shipments from CM	Retail control using ARTS (3rd and 2nd July) and MRTS (1st July).	Retail control using MRTS.
10	Kitchen and other household appliances.	Shipments from CM	Retail control using ARTS (3rd and 2nd July) and MRTS (1st July).	Retail control using MRTS.

Table 9.—Summary of Source Data and Estimating Methods Used in Preparing Current-Dollar Estimates of PCE—Continued

Line in NIPA table 2.5	Category and selected commodity ¹	Benchmark estimates ²	Indicator series used to interpolate and extrapolate	
			Nonbenchmark annual estimates ³	Quarterly estimates ⁴
11	China, glassware, tableware, and utensils.	Shipments from CM	Retail control using ARTS (3rd and 2nd July) and MRTS (1st July).	Retail control using MRTS.
12	Radio and television receivers, records, and musical instruments. ⁹	Shipments from CM	Purchases of computers and peripheral equipment from BLS. Retail control using ARTS (3rd and 2nd July) and MRTS (1st July) for the remainder.	Retail control using MRTS.
13	Other durable house furnishings.	Shipments from CM	Retail control using ARTS (3rd and 2nd July) and MRTS (1st July).	Retail control using MRTS.
14	Other durable goods:			
15	Ophthalmic products and orthopedic appliances.	Shipments from COG, CM, CWT, and CRT.	Retail control using ARTS (3rd and 2nd July) and MRTS (1st July).	Retail control using MRTS.
16	Wheel goods, durable toys, sports equipment, boats, and pleasure aircraft.	Shipments from COG, CM, CWT, and CRT.	Retail control using ARTS (3rd and 2nd July) and MRTS (1st July).	Retail control using MRTS.
17	Jewelry and watches ¹⁰ .	Shipments from COG, CM, CWT, and CRT.	American Eagle coin sales, in ounces [195], times average price of gold per ounce [66]. Retail control using ARTS (3rd and 2nd July) and MRTS (1st July) for the remainder.	American Eagle coin sales, in ounces [195], times average price of gold per ounce [66]. Retail control using MRTS for the remainder.
18	Books and maps	Shipments from COG, CM, CWT, and CRT.	Retail control using ARTS (3rd and 2nd July) and MRTS (1st July).	Retail control using MRTS.
19	Nondurable goods:			
20	Food:			
21	Food purchased for off-premise consumption.	Shipments from CA, CM, CWT, and CRT.	Retail control using ARTS (3rd and 2nd July) and MRTS (1st July).	Retail control using MRTS.
22	Purchased meals and beverages.	Receipts from CRT, GF, and CSI.	Retail control using ARTS (3rd and 2nd July) and MRTS (1st July).	Retail control using MRTS.
23	Food furnished employees (including military) and food produced and consumed on farms.	Civilian employees: Number of employees from EE, average consumption estimated judgmentally. Military employees: Expenditures from Federal budget data. Farm food: Value from USDA. All purchases defined to persons.	Civilian employees: Number of employees from EE times CPI for food away from home. Military employees and farm food: Same as benchmark.	Civilian employees: Same as annual. Military employees and farm food: Judgmental trends.
27	Clothing and shoes:			
28	Shoes.	Shipments from CM.	Retail control using ARTS (3rd and 2nd July) and MRTS (1st July).	Retail control using MRTS.

Table 9.—Summary of Source Data and Estimating Methods Used in Preparing Current-Dollar Estimates of PCE—Continued

Line in NIPA table 2.5	Category and selected commodity ¹	Benchmark estimates ²	Indicator series used to interpolate and extrapolate	
			Nonbenchmark annual estimates ³	Quarterly estimates ⁴
29	Women's and children's clothing and accessories except shoes.	Shipments from CM and CRT. PCE share of broadwoven fabric, yarn, and knit fabric based on quantity data from trade sources.	Retail control using ARTS (3rd and 2nd July) and MRTS (1st July).	Retail control using MRTS.
30	Men's and boys' clothing except shoes.	Shipments from CM and CRT. PCE share of broadwoven fabric, yarn, and knit fabric based on quantity data from trade sources. Standard clothing issued military from Federal budget data; all purchases defined to be PCE.	Standard clothing issued military from Federal budget data. Retail control using ARTS (3rd and 2nd July) and MRTS (1st July) for the remainder.	Standard clothing issued military: Judgmental trend. Retail control using MRTS for the remainder.
31	Gasoline and oil: Gasoline ⁵	Shipments from CM. Quantities purchased by persons from Federal agencies and trade source times average retail price from EIA.	Quantities from Federal agencies and trade sources (3rd and 2nd July) or EIA (1st July); average retail price from EIA.	Quantities and average retail price from EIA.
	Motor oil	Shipments from CM. Quantities purchased by persons, from gasoline sales and trade source, times average retail price from BLS and USDA.	Gasoline purchases times CPI for motor oil, coolant, and other products.	Same as annual.
32	Fuel oil and coal	Shipments from CMI and CM, PCE from EIA. Firewood from CM and USDA; all purchases assumed by persons.	Retail control using ARTS (3rd and 2nd July) and MRTS (1st July).	Retail control using MRTS.
33	Other nondurable goods:			
34	Tobacco products . . .	Shipments from CM; all purchases assumed by persons.	Quantity sold from trade source times CPI for tobacco.	Judgmental trend.
35	Toilet articles and preparations.	Shipments from CA, CMI, and CM.	Retail control using ARTS (3rd and 2nd July) and MRTS (1st July).	Retail control using MRTS.
36	Semidurable house furnishings.	Shipments from CA, CMI, and CM; PCE share of broadwoven fabric based on quantity data from trade source.	Retail control using ARTS (3rd and 2nd July) and MRTS (1st July).	Retail control using MRTS.
37	Cleaning and polishing preparations, and miscellaneous household supplies and paper products.	Shipments from CA, CMI, and CM.	Retail control using ARTS (3rd and 2nd July) and MRTS (1st July).	Retail control using MRTS.
38	Drug preparations and sundries.	Shipments from CA, CMI, and CM. PCE share of prescription drugs from trade source.	Retail control using ARTS (3rd and 2nd July) and MRTS (1st July).	Retail control using MRTS.

Table 9.—Summary of Source Data and Estimating Methods Used in Preparing Current-Dollar Estimates of PCE—Continued

Line in NIPA table 2.5	Category and selected commodity ¹	Benchmark estimates ²	Indicator series used to interpolate and extrapolate	
			Nonbenchmark annual estimates ³	Quarterly estimates ⁴
39	Nondurable toys and sport supplies.	Shipments from CA, CMI, and CM.	Retail control using ARTS (3rd and 2nd July) and MRTS (1st July).	Retail control using MRTS.
40	Stationery and writing supplies.	Shipments from CA, CMI, and CM.	Retail control using ARTS (3rd and 2nd July) and MRTS (1st July).	Retail control using MRTS.
41	Net foreign remittances.	Expenditures from BPA data; all purchases defined to persons.	Same as benchmark	Final estimates: Same as benchmark. Advance and preliminary estimates: BPA projections.
42	Other	Shipments from CA, CMI, and CM.	Retail control using ARTS (3rd and 2nd July) and MRTS (1st July).	Retail control using MRTS.
43	Services:			
44	Housing:			
45	Owner-occupied nonfarm dwellings—space rent. ⁵	Number of owner-occupied units times imputed average rental value, both from Census. All purchases defined to persons.	Number of owner-occupied units times imputed average rental value.	Number of units times imputed average rental value.
46	Tenant-occupied nonfarm dwellings—rent. ⁵	Number of tenant-occupied units times average rental value, both from Census. All purchases defined to persons.	Number of tenant-occupied units times average rental value.	Number of units times average rental value.
47	Rental value of farm dwellings.	Expenditures from USDA. All purchases defined to persons.	Same as benchmark	Judgmental trend.
48	Other housing: Hotels and motels	Receipts from CSI	Receipts from SAS less gambling receipts from State reports.	Number of rooms times occupancy rate times average room rate, all from trade sources.
	Higher education . .	Receipts from GF and CES. All purchases assumed by persons.	Number of students from CES times average dormitory room charge from CES.	Judgmental trend.
	Elementary and secondary education.	Number of students and dormitory charges from CES. All purchases assumed by persons.	Number of students from CPS adjusted to remove enrollment at religiously affiliated schools times CPI for lodging while at school.	Judgmental trend.
	Housing, n.e.c. . . .	Receipts and expenses from CSI.	Wages and salaries from EW . .	Judgmental trend.
49	Household operation:			
50	Electricity	Receipts from EIA. PCE share based on revenues from residential customers from same source.	Residential revenues from EEI .	Historical: Residential revenues from EEI. Current: Revenue from EIA or projected kilowatt hours times price based on CPI for electricity.

Table 9.—Summary of Source Data and Estimating Methods Used in Preparing Current-Dollar Estimates of PCE—Continued

Line in NIPA table 2.5	Category and selected commodity ¹	Benchmark estimates ²	Indicator series used to interpolate and extrapolate	
			Nonbenchmark annual estimates ³	Quarterly estimates ⁴
51	Gas	Receipts from trade source. PCE share based on revenue from residential customers from same source.	Residential revenue from EIA or trade source (1st July). ¹¹	Historical: Residential revenue from trade source. Current: BTU's from AGA or projected BTU's times price based on CPI for utility gas. Judgmental trend.
52	Water and other sanitary services.	Receipts from COG. PCE share based primarily on revenue from residential customers from trade source.	3rd July: Revenues from GF. 2nd and 1st July: Judgmental trend.	Judgmental trend.
53	Telephone and telegraph.	Receipts from trade source. PCE share based on revenue from residential customers from same source.	Local and toll revenue and revenue of specialized long-distance carriers from FCC adjusted to include Federal taxes. ¹²	Local network and long-distance revenues from FCC, quarterly operating revenue of MCI, Inc.
54	Domestic service . . .	Receipts of cleaning services from CSI. All others: Number of workers, weekly hours, and earnings from EE; all purchases defined to persons.	Number of workers times weekly hours times earnings from EE.	Judgmental trend.
55	Other household operation: Personal property insurance.	Net insurance premiums from trade source.	Net insurance premiums from trade source.	Final estimate: Same as annual Advance and preliminary estimates: Judgmental trend.
	Cleaning and repair service.	Receipts from CSI	Wages from EW times ratio of receipts for miscellaneous repair services from SAS to wages.	Judgmental trend.
	Moving and storage	Receipts from ICC	Receipts from ICC	Judgmental trend.
	Postage	Receipts from USPS	Receipts from USPS	Judgmental trend.
	Household operation, n.e.c.	Receipts from CSI.	Receipts from SAS	Judgmental trend.
56	Transportation:			
57	User-operated transportation: Motor vehicle repair, greasing, washing, parking, storage, and rental. Bridge, tunnel, ferry, and road tolls.	Receipts from CRT, CSI, and GF. Receipts from FHWA	3rd and 2nd July: Receipts from SAS, ARTS, and NADA. 1st July: Receipts from SAS, NADA, and MRTS. 3rd and 2nd July: Receipts from FHWA. 1st July: Quantity of gasoline (EIA) times average toll from trade source.	Judgmental trend. Judgmental trend.
	Motor vehicle insurance premiums less claims paid.	Net insurance premiums from trade source.	Net insurance premiums from trade source.	Final estimate: Same as annual Advance and preliminary estimate: Judgmental trend.
58	Purchased local transportation:			
59	Transit systems . . .	Receipts from trade source . . .	3rd July: Receipts from trade source. 2nd and 1st July: Passenger trips from trade source times CPI for intracity mass transit.	Passenger trips from trade source times CPI for intracity mass transit. Advance estimate: Judgmental trend.

Table 9.—Summary of Source Data and Estimating Methods Used in Preparing Current-Dollar Estimates of PCE—Continued

Line in NIPA table 2.5	Category and selected commodity ¹	Benchmark estimates ²	Indicator series used to interpolate and extrapolate	
			Nonbenchmark annual estimates ³	Quarterly estimates ⁴
60	Other purchased local transportation: Taxicabs Railway	Receipts from OTSAI Receipts from ICC	Number of taxicabs from trade source times CPI for taxicabs. Passenger revenue for class I railroads excluding AMTRAK from ICC.	Judgmental trend. Judgmental trend.
61	Purchased intercity transportation:			
62	Railway (excluding commutation).	Receipts from ICC	Passenger revenue from AMTRAK.	Revenue from AMTRAK.
63	Bus	Receipts from ICC	Passenger revenue, class I intercity buses, from ICC.	Revenue from Greyhound Lines.
64	Airline.	Domestic passenger revenues, hours flown and average fares, or planes in service and average fare, from TSC and FAA.	Domestic passenger revenues, hours flown and average fares, or average fare, from TSC and FAA.	Historical: Quarterly revenue and monthly passenger miles from TSC. Current: Revenue passenger miles times average fare, from ATA.
65	Other purchased intercity transportation.	Receipts from CSI and ICC	Receipts from SAS	Judgmental trend.
66	Medical care:			
67	Physicians	Receipts from CSI ¹³	Receipts from SAS and HCFA ¹³	Judgmental trend.
68	Dentists	Receipts from CSI ¹³	Receipts from SAS and HCFA ¹³	Judgmental trend.
69	Other professional services.	Receipts and expenses from CSI ¹³	Revenues and operating expenses of prepaid health plans from SAS and HCFA. ¹³	Monthly wages and salaries based on employment, hours, and earnings from EE.
70	Privately controlled hospitals and sanitariums:			
	Privately controlled hospitals.	Receipts and expenses from CSI	3rd and 2nd July: Expenses of proprietary and nonprofit facilities from AHA less government purchases from HCFA. 1st July: Expenses of community hospitals from AHA.	Monthly expenses of community hospitals from AHA. Advance estimates: Monthly wages and salaries based on employment, hours, and earnings from EE.
	Nursing homes	Receipts and expenses from CSI	Revenues from SAS less government purchases from HCFA.	Monthly wages and salaries based on employment, hours, and earnings from EE.
71	Health insurance:			
	Medical care and hospitalization.	Receipts and expenses from HCFA. ¹⁴ All purchases defined to persons.	3rd and 2nd July: Same as benchmark. ¹⁴ 1st July: HCFA projections.	Judgmental trend.
	Income loss	Net insurance premiums from SSA. All purchases defined to persons.	3rd July: Same as benchmark. 2nd July: Net insurance premiums from trade source. 1st July: Judgmental trend.	Judgmental trend.
	Workers' compensation.	Net insurance premiums from trade source. ¹⁵ All purchases defined to persons.	Net insurance premiums from trade source. ¹⁵	Final estimate: Same as annual. Advance and preliminary estimates: Judgmental trend.

Table 9.—Summary of Source Data and Estimating Methods Used in Preparing Current-Dollar Estimates of PCE—Continued

Line in NIPA table 2.5	Category and selected commodity ¹	Benchmark estimates ²	Indicator series used to interpolate and extrapolate	
			Nonbenchmark annual estimates ³	Quarterly estimates ⁴
72	Other services:			
73	Personal care:			
74	Cleaning, storage, and repair of clothing and shoes.	Receipts from CSI	Receipts from SAS and wages from EW.	Judgmental trend.
75	Barbershops, beauty parlors, baths, and health clubs.	Receipts from CSI. All purchases assumed by persons.	Receipts from SAS	Judgmental trend.
76	Other	Receipts from CSI and CRT. All purchases assumed by persons.	Receipts for miscellaneous personal services from SAS and wages for watch and jewelry repair from EW.	Judgmental trend.
77	Personal business:			
78	Brokerage charges and investment counseling: ⁴			
	Securities commissions.	Commissions from SEC. PCE share based on data from NYSE.	Commissions from SEC (3rd and 2nd July) and NYSE (1st July), value of trading from SEC, NYSE, and NASD.	Securities commissions per share and volume traded from SEC, NYSE, and NASD.
	Commodities commissions.	Commissions of securities dealers from SEC. Commissions of commodity dealers estimated from BLS wage of commodity dealers and ratio of security dealer revenues to their wages.	Commodity revenue of security dealers from SEC (3rd and 2nd July) and NYSE (1st July).	Judgmental trend.
	Fees for investment counseling services.	Fees of securities dealers and banks from SEC and FDIC. Fees of independent counselors estimated from BLS wage data and ratio of security dealer revenue to their wages.	Fees of security dealers and banks from FDIC. Fees of independent counselors estimated from wages (from EW) and security dealer mark-up from SEC.	Judgmental trend.
	Services furnished without payment by domestic securities dealers.	Income from SEC. PCE share based on data from NYSE.	Income from SEC (3rd and 2nd July) and NYSE (1st July); transactions from FRBNY.	Judgmental trend.
	Income from sale of investment company securities.	Income from SEC. PCE share based on data from trade source.	Income from SEC (3rd and 2nd July) and NYSE (1st July).	Sales of open-end investment company shares from trade source.
79	Bank service charges, trust services, and safe deposit box rental.	Receipts from FDIC	Receipts from FDIC	Judgmental trend.
80	Services furnished without payment by financial intermediaries except life insurance carriers and private noninsured pension plans. ⁵	Property income and interest paid from Federal regulatory agencies. PCE share based on data from regulatory agencies.	Same as benchmark	Judgmental trend.

Table 9.—Summary of Source Data and Estimating Methods Used in Preparing Current-Dollar Estimates of PCE—Continued

Line in NIPA table 2.5	Category and selected commodity ¹	Benchmark estimates ²	Indicator series used to interpolate and extrapolate	
			Nonbenchmark annual estimates ³	Quarterly estimates ⁴
81	Other personal business: Expense of handling life insurance. ⁵	Expenses of life insurance from trade sources and expenses of pension funds and profits of stock life insurance companies from IRS. All purchases defined to persons.	3rd July: Expenses of life insurance and pension funds from ACLI, NYSE, EW (wages), and trade source. Profits of stock life insurance carriers from IRS. 2nd July: Same as 3rd July except profits from trade source. 1st July: Wages from EW.	Monthly wages and salaries based on employment, hours, and earnings from EE.
	Legal services . . .	Receipts and expenses from CSI	Receipts and revenues from SAS	Judgmental trend.
	Funeral and burial expenses.	Receipts from CSI and CM.	Receipts from SAS	Number of deaths from NCHS times CPI for funeral expenses. Advance estimate: Judgmental trend.
	<i>Other:</i> Trade union and professional association expenses. Employment agency fees.	Expenses from CSI. All trade union expense assumed by persons. Receipts from CSI	Wages from EW Receipts from SAS	Monthly wages and salaries based on employment, hours, and earnings from EE. Monthly wages and salaries based on employment, hours, and earnings from EE.
	Postal money orders. Classified ads . . .	Receipts from USPS Receipts from trade source . . . Receipts from FCC	Receipts from USPS Receipts from trade source . . . Revenue from trade source . . .	Judgmental trend. Judgmental trend.
	Telegraph money orders. Accounting and tax return preparation services.	Receipts from CSI	Receipts from SAS	Judgmental trend.
	Travel and entertainment card fees.	Receipts from trade source . . .	Receipts from trade source . . .	Judgmental trend.
	Other personal business, n.e.c.	Receipts from CSI	Wages from EW	Judgmental trend.

Table 9.—Summary of Source Data and Estimating Methods Used in Preparing Current-Dollar Estimates of PCE—Continued

Line in NIPA table 2.5	Category and selected commodity ¹	Benchmark estimates ²	Indicator series used to interpolate and extrapolate	
			Nonbenchmark annual estimates ³	Quarterly estimates ⁴
82 83	Recreation: Admissions to specified spectator amusements.	Receipts and expenses from CSI, COG, and CES.	Receipts from SAS, wages from EW, receipts from NFL, admissions from trade sources times CPI for admissions. For high school athletics, GF (3rd July) and judgmental trend (1st and 2nd July).	Motion picture theaters, legitimate theaters and opera, etc. monthly revenue from <i>Variety</i> and <i>Amusement Business</i> . Spectator sports: Judgmental trend.
84	Other recreation: Radio and TV repair.	Receipts from CSI and CRT . . .	Receipts from SAS	Number of televisions based on stock and sales estimates from trade source times CPI for appliance and furniture repair.
	Clubs and fraternal organizations except insurance.	Expenses from CSI. All purchases assumed by persons.	Receipts and revenues for social and athletic clubs from SAS; membership in other organizations from CES and trade source times CPI for all items.	Monthly wages and salaries based on employment, hours, and earnings from EE.
	<i>Commercial participant amusements:</i> Sightseeing Private flying	Receipts from ICC Receipts from FAA	Receipts from ICC Hours flown in general aviation from FAA times CPI for all items.	Judgmental trend. Judgmental trend.
	Casino gambling	Receipts from State agency. All purchases assumed by persons.	Receipts from State agencies	Winnings from State of New Jersey.
	Other commercial participant amusements, n.e.c.	Receipts from CSI and GF.	Receipts from SAS	Judgmental trend.
	Parimutuel net receipts.	Receipts from CSI and GF. All purchases assumed by persons.	Take and break from NASRC, and offtrack betting from GF (3rd July) or judgmental trend (2nd July). 1st July: Judgmental trend.	Judgmental trend.
	<i>Other recreation, n.e.c.:</i> Pets and pet services, except veterinarians.	Receipts from USDA	Number of registered dogs from AKC times CPI for pets and pet services.	Judgmental trend.
	Veterinarians	Receipts from CA	Wages of veterinarians from EW	Monthly wages and salaries based on employment, hours, and earnings from EE.
	Cable TV	Receipts from FCC. All purchases assumed by persons.	Receipts from trade source	Number of cable households from trade source times price based on the CPI for cable television.
	Public broadcasting.	Expenses from CPB. All purchases assumed by persons.	3rd and 2nd July: Expenses from CPB. 1st July: Judgmental trend.	Judgmental trend.

Table 9.—Summary of Source Data and Estimating Methods Used in Preparing Current-Dollar Estimates of PCE—Continued

Line in NIPA table 2.5	Category and selected commodity ¹	Benchmark estimates ²	Indicator series used to interpolate and extrapolate	
			Nonbenchmark annual estimates ³	Quarterly estimates ⁴
	High school recreation.	Receipts from COG	3rd July: Receipts from GF. 2nd and 1st July: Judgmental trend.	Judgmental trend.
	Lotteries	Receipts from COG	3rd July: Receipts from GF. 2nd and 1st July: Judgmental trend.	Judgmental trend.
	Recreation, n.e.c. ⁹	Receipts and expenses from CSI and CRT.	Receipts from SAS and expenditures by consumers for video cassette rentals from trade source.	Judgmental trend.
85	Private education and research:			
86	Higher education . .	Expenses from CSI and CES ¹⁶ .	3rd and 2nd July: Expenses from CES. 1st July: Enrollment from CES times price index for higher education from trade source.	Monthly wages and salaries based on employment, hours, and earnings from EE.
87	Elementary and secondary schools. Nursery schools	Receipts and expenses from CSI. ¹⁶ All purchases assumed by persons.	Receipts and revenues from SAS.	Monthly wages and salaries based on employment, hours, and earnings from EE.
	Other	Receipts and expenses from CSI and, for religious-affiliated schools, expenses from BLS, COG, and CES. ¹⁶ All purchases assumed by persons.	Enrollment from trade source and CPS times PPI for industrial commodities. Wages from EW.	Monthly wages and salaries based on employment, hours, and earnings from EE.
88	Other	Receipts and expenses from CSI. ¹⁷	3rd and 2nd July: Receipts from SAS; wages from EW; trade source for foundation expenses. 1st July: Same as 3rd and 2nd July except wages from EW used for foundations.	Monthly wages and salaries based on employment, hours, and earnings from EE.
89	Religious and welfare activities. Religion ⁵	Expenses: Membership and average contribution from trade sources. All purchases assumed by persons.	2nd and 3rd July: Same as benchmark. 1st July: Population and per capita disposable personal income.	Monthly wages and salaries based on employment, hours, and earnings from EE.
	Political organizations.	Expenses from CSI. All purchases assumed by persons.	Expenses of presidential and congressional elections from FEC; votes cast times cost index based on earnings and PPI for State and local elections.	Judgmental trend.
	Social welfare	Expenses from CSI ¹⁶	Wages from EW	Monthly wages and salaries based on employment, hours, and earnings from EE.
	Museums and libraries.	Expenses from CSI, receipts from COG.	Wages from EW	Monthly wages and salaries based on employment, hours, and earnings from EE.

Table 9.—Summary of Source Data and Estimating Methods Used in Preparing Current-Dollar Estimates of PCE—Continued

Line in NIPA table 2.5	Category and selected commodity ¹	Benchmark estimates ²	Indicator series used to interpolate and extrapolate	
			Nonbenchmark annual estimates ³	Quarterly estimates ⁴
	Foundations	Expenses: Wages from Census Bureau and other expenses from HR. All purchases assumed by persons.	Grants from trade source	Judgmental trend.
90	Net foreign travel . . .	Travel expenditures from BPA. Passenger fares paid to U.S. carriers from BPA and DOT. All expenditures in the United States by foreigners assumed by persons.	Travel expenditures and passenger fares paid to foreign airlines from BPA. Passenger fares paid to U.S. carriers from BPA and DOT.	Travel expenditures and passenger fares paid to foreign airlines from BPA and BPA projections. Passenger fares paid to U.S. carriers from BPA and DOT. Passenger revenue miles and fares from ATA for current estimates.

n.e.c. Not elsewhere classified.

1. Additional commodities are shown within a published PCE category when they are prepared using different source data or estimating methods.

2. The descriptions in this column refer to total domestic supply. Source data and estimating methods are those used for the 1977 benchmark input-output accounts. Except as noted, PCE share is derived as the difference between total commodity sales at purchasers' prices less purchases by business and government. The entry "All purchases defined to persons" means that the category is unique to PCE. The entry "All purchases assumed by persons" means that purchases by business and government are assumed to be statistically insignificant, although information is not available.

3. "3rd July," "2nd July," and "1st July" refer to the third, second, and first annual NIPA revisions, respectively. Source data and estimating methods are those used for the July 1989 annual NIPA revision.

4. Except as noted, the same methodology is used for both historical and current estimates.

5. For a more detailed description of the methodology used for this item, including major changes in the source data and estimating methods, see the end of the next section of the text.

6. For 1946–58, estimates are based on gross margin rates from trade source [78] and IRS (1946–49) and sales from the Federal Reserve Board [27]. Before 1946, gross margin estimates are based on retail census data with rough interpolations for intercensal years (1929–39); sales from the Federal Reserve Board (1939–41) [26] and gross margin rates adjusted upward moderately from the rate derived from the 1939 retail census; and interpolations using used car registrations (1942–45) [100].

7. Before 1946, included with new autos.

8. For a more detailed description of the methodology used for this item, including major changes in the source data and estimating methods, see the end of the next section of the text. Before 1946, PCE for trucks are assumed to be negligible.

9. Purchases of computers and video cassette rentals are not included in the 1977 benchmark estimates although they are included in the nonbenchmark annual, quarterly, and monthly estimates from 1982 forward.

10. Purchases of American Eagles are not included in the 1977 benchmark estimates although they are included in the nonbenchmark annual, quarterly, and monthly estimates from 1986 forward.

11. Before 1982, trade source data are used for all years.

12. Before 1984, the annual estimates were based on trade source, alone or with FCC data to establish the PCE share before 1948.

13. Before 1981 (1977 for benchmark estimates), estimates were based on *Statistics of Income* [206, 207, 208], from 1947–80, and before 1947, on BEA surveys and data from the Census of Population and trade sources.

14. Before 1965, the estimates are based on data from *Social Security Bulletin* [185], for 1948–64, and the *Spectator Insurance Yearbook*, published by the Spectator Company [105], for 1929–47.

15. For 1947–67, the estimates are based on data from the *Social Security Bulletin* [187]; estimates for earlier years are zero.

16. Before 1977, estimates are based on data from CES and other sources.

17. Before 1977, the estimates are based on data from the IRS and other sources.

18. Before 1977, the estimates are based on data from the *Social Security Bulletin* [186].

ACLI	American Council of Life Insurance.	FRB	Federal Reserve Board [24].
AGA	American Gas Association [6, 7, 8].	FRBNY	Federal Reserve Bank of New York.
AHA	American Hospital Association [9, 10].	GF	<i>Governmental Finances</i> (Census Bureau) [138].
AKC	American Kennel Club [11].	HCFA	Health Care Financing Administration, U.S. Department of Health and Human Services [189, 190, 191].
APTA	American Public Transit Association [14, 15].	HIAA	Health Insurance Association of America [50].
ARTS	Annual Retail Trade Survey (Census Bureau) [128].	HR	House of Representatives [226].
ASM	Annual Survey of Manufactures (Census Bureau) [129].	ICC	Interstate Commerce Commission [57, 58, 60, 61, 62].
AT&T	American Telephone and Telegraph Company [16, 17].	IRS	Internal Revenue Service, U.S. Department of the Treasury [205, 206].
ATA	Air Transport Association of America [1, 2].	MRTS	Monthly Retail Trade Survey (Census Bureau) [127, 131].
BLS	Bureau of Labor Statistics, U.S. Department of Labor [197].	NAB	Newspaper Advertising Bureau [96].
BPA	Balance of Payments Accounts (Bureau of Economic Analysis) [158].	NADA	National Automobile Dealers Association [76].
CA	Census of Agriculture (Census Bureau) [113].	NASD	National Association of Securities Dealers.
CES	Center for Education Statistics (U.S. Department of Education) [164, 165, 166, 167, 168].	NASRC	National Association of State Racing Commissioners [74].
CM	Census of Manufactures (Census Bureau) [117].	NCHS	National Center for Health Statistics, U.S. Department of Health and Human Services [192].
CMJ	Census of Mineral Industries (Census Bureau) [118].	NFL	National Football League [86].
COG	Census of Governments (Census Bureau) [114].	NSA	Not seasonally adjusted.
CPB	Corporation for Public Broadcasting [30, 31].	NYSE	New York Stock Exchange.
CPI	Consumer Price Index (BLS) [201].	OTSAI	Office of Transportation Systems Analysis and Information [215].
CPS	Current Population Survey (Census Bureau) [137].	PPI	Producer Price Index (BLS) [204].
CRT	Census of Retail Trade (Census Bureau) [119].	QS	<i>Quarterly Summary of Federal, State, and Local Tax Revenue</i> (Census Bureau) [141].
CSI	Census of Service Industries (Census Bureau) [120].	SAS	Service Annual Survey (Census Bureau) [132].
CWT	Census of Wholesale Trade (Census Bureau) [124].	SEC	Securities and Exchange Commission [229].
EE	<i>Employment and Earnings</i> (BLS) [202].	SSA	Social Security Administration, U.S. Department of Health and Human Services [193].
EI	Edison Electric Institute [33].	TIUS	Truck Inventory and Use Survey (Census Bureau) [123].
EIA	Energy Information Administration, U.S. Department of Energy [169, 170, 172-177, 180, 182].	TSC	Transportation Systems Center [216, 217, 218].
EW	<i>Employment and Wages</i> (BLS) [203].	USDA	U.S. Department of Agriculture [108].
FAA	Federal Aviation Administration [210, 211, 212].	USPS	U.S. Postal Service [228].
FCC	Federal Communications Commission [39-42].		
FDIC	Federal Deposit Insurance Corporation [43, 44].		
FEC	Federal Election Commission [222, 223, 224].		
FHLBB	Federal Home Loan Bank Board [46].		
FHWA	Federal Highway Administration, U.S. Department of Transportation [213].		

3.2 Constant-dollar estimates

Constant-dollar estimates are prepared using one of three methods. For most PCE categories, the method used is deflation, in which the constant-dollar estimates are obtained by dividing the most detailed current-dollar categories by appropriate price indexes, primarily Bureau of Labor Statistics (BLS) consumer price indexes. The other methods of preparing constant-dollar estimates both use quantity indica-

tors; these methods are quantity extrapolation and direct base-year valuation. For quantity extrapolation, constant-dollar estimates are obtained by extrapolating the current-dollar estimates from the base year by quantity indicators. For direct valuation, constant-dollar estimates are obtained by multiplying base-year prices times quantity data for the current period. All constant-dollar estimates are expressed in terms of a single base period, currently 1982. This period usually is changed at the time of a comprehensive revision.

Current-Dollar Estimates

This section provides more detailed information on the source data and estimating methods used to prepare the current-dollar PCE estimates for both benchmark and nonbenchmark years and the quarterly and monthly estimates of PCE. This information for benchmark years is summarized in table 11; for nonbenchmark years in table 12; and for quarters and months in table 13. In the section on special procedures, more detailed descriptions are provided for selected categories.

1 Annual Estimates: Benchmark Years

PCE estimates for benchmark years are the estimates from BEA's benchmark I-O accounts, adjusted for the latest definitional, classificational, and statistical changes incorporated into the NIPA's. These accounts show domestic output of each commodity and its disposition either as consumption by industries or as part of one or more components of final demand, which sum to gross national product (GNP). PCE and the other components of final demand are presented in the I-O accounts as the sum of purchases of detailed commodities—that is, goods, services, or structures. In the presentation of PCE in the NIPA's, these commodities are grouped into the detailed type of product or type of expenditure categories shown in the NIPA tables.¹⁴ Two methods are used in preparing the benchmark estimates of PCE: The commodity-flow method and direct estimation.

1.1 Commodity-flow estimates

For most commodities purchased by persons, the estimates in the I-O accounts are calculated using the commodity-flow method, which is outlined in table 10. This method first converts *domestic sales*, which is the value of sales of commodities produced by domestic firms at producers' prices, to *domestic supply*, which is the value of sales to domestic purchasers at purchasers' prices and, therefore, includes imports and excludes exports. Then it allocates domestic supply among

domestic purchasers—that is, persons, business, and government.¹⁵

1.1.1 Commodities purchased by persons

In step 1 of the commodity-flow method, commodities purchased by persons are identified by BEA on the basis of the nature of the product from the product titles contained either in the detailed tabulations in the quinquennial economic censuses or in the *Standard Industrial Classification Manual* [221].

1.1.2 Domestic sales

In step 2, estimates of total domestic sales—that is, shipments, revenues, or receipts—are prepared for each of the commodities identified in step 1. These estimates reflect sales of commodities produced by private firms, regardless of their principal activity, and by government agencies; the value of the sales includes excise taxes and tips. For example, shipments of jewelry are obtained by combining shipments by manufacturers with the value of lapidary work performed by wholesale and retail jewelers; receipts for auto repair include repair work performed by gasoline service stations and automobile dealers, as well as by auto repair shops; and revenues for electricity include electricity provided by both private and government utilities.

In the 1977 I-O accounts, shipments of goods are primarily from the detailed product statistics of the *1977 Census of Manufactures* [117]; sales, receipts, or expenses for services are primarily from the *1977 Census of Service Industries* [120] and the *1970 and 1980 Censuses of Housing* [115]; the estimates of excise taxes are those prepared for BEA's government accounts, as described in MP-5 [152, pages 24 and 25]; tips are estimated by BEA by applying appropriate tipping rates to sales or receipts. For goods produced in nonmanufacturing industries, shipments data are from the U.S. Department of Agriculture (USDA) [108] and from the *1977 Census of Agriculture* [113], the *1977 Census of*

14. A complete listing of the commodities underlying each PCE product category is available from BEA. For additional information, write to BEA (BE-51), U.S. Department of Commerce, Washington, D.C. 20230.

15. The description in the following pages focuses on the source data that are important determinants of the benchmark PCE estimates. It ignores the unique strength of the I-O accounts for benchmarking. Briefly, the compilation of the I-O accounts requires that *all* inputs and outputs for each industry be accounted for fully. This requirement means that each data source is cross-checked indirectly by every other data source. If there are major imbalances in inputs or outputs, source data and procedures must be reviewed and estimates reworked. Small imbalances between the supply and use of a commodity are distributed mathematically across the outputs (inputs) purchased by business and, sometimes, the components of final demand.

Table 10.—Steps in the Commodity-Flow Method Used for PCE

1. Identify commodities purchased by persons.
2. Estimate domestic sales—shipments, sales, and/or receipts of these commodities at producers' prices.
3. Add imports.
4. Add trade margins and related taxes and transportation costs.
5. Subtract exports.
6. Subtract change in trade inventories (mainly wholesale and retail).
7. Allocate domestic supply among business, government, and persons.
8. Adjust for intersector sales of used goods to derive purchases by persons.

Mineral Industries [118], the *1977 Census of Wholesale Trade* [124], the *1977 Census of Service Industries* [120] and the *1977 Census of Retail Trade* [119].¹⁶ Receipts of government enterprises and sales by other government agencies are from the *1977 Census of Governments, Governmental Finances, and Federal budget documents* as described in MP-5 [152, pages 33, 49, 91, and 99].

1.1.3 Imports

In step 3, imports are added because in the NIPA's, they are included in the final demand of each type of purchaser and subtracted as a separate entry in determining GNP.

The source for merchandise imports is the Census Bureau monthly merchandise trade series [145]. For imports of services, the source is BEA's balance of payments accounts, which rely heavily on quarterly and annual BEA surveys, as described in MP-3 [151, pages 22, 23, and 37] and in the June 1989 SURVEY OF CURRENT BUSINESS [158].

1.1.4 Trade margins and related taxes and transportation costs

In step 4, distribution costs—consisting of trade margins, sales and excise taxes collected by the trade establishments, and transportation costs—are added because transactions measured so far in the commodity-flow method mostly have been stated at producers' prices while the components of final demand are valued at purchasers' prices.

In the 1977 I-O accounts, trade margins for both wholesalers and retailers are estimated for each commodity in two stages.

- First, margins for each establishment industry (that is, the unit that is classified is the establishment) are estimated by multiplying establishment-industry margin rates by the corresponding establishment-industry sales. The margin rates are based on establishment-industry data on sales, sales tax rates, and cost of goods sold from the Census Bureau 1977 annual surveys of merchant wholesalers and retailers [128, 130]; wholesale and retail trade sales by establishment industry and by commodity are from the *1977 Censuses of Wholesale and Retail Trade* [119, 124].
- Then, margins for each of the commodities sold in each industry are estimated. This is accomplished for each industry by multiplying the margin rate for the establishment industry in which the commodity is primary by sales of the commodity in the given industry and then adjusting the sum over all commodities to the margin of the given industry. Margins also are added to account for sales of the commodity by other industries, such as government-owned liquor stores and service-industry establishments. When more commodity detail is needed, wholesale margins are estimated for the appropriate commodities based on the composition of manufacturing shipments to wholesalers; detailed retail margins are estimated based on the composition of products purchased by persons.

Sales taxes at both the wholesale and the retail levels are estimated for each commodity using the same source data and procedures as used for the trade margins.

16. The economic census data used to prepare the 1977 I-O accounts were adjusted to account for undercoverage due to the exclusion of certain small firms from those censuses and for misreporting on the tax return data used by the Census Bureau to conduct the censuses. The adjustment for misreporting is described in the June 1984 SURVEY OF CURRENT BUSINESS [153].

Transportation costs are derived primarily from 1977 revenue data by mode of transportation: For railroads and motor freight, from the Interstate Commerce Commission (ICC) [62] and the *1977 Census of Transportation: Nonregulated Carriers and Public Warehousing* [12]; for pipelines, from the Department of Energy (DOE) [184]; for airlines, from the Department of Transportation (DOT) [216]; and for water, from the Department of Defense (DOD) [111]. The costs are allocated by commodity using data from these sources, from the ICC [59, 61], and from the *1977 Census of Transportation: Commodity Transportation Survey* from the Census Bureau [121].

1.1.5 Exports

In step 5, exports, which include distribution costs, are subtracted because they are recorded in the NIPA's as a separate final demand component.

The source for merchandise exports is the Census Bureau monthly merchandise trade series [144]. For exports of services, the source is BEA's balance of payments accounts, which rely heavily on quarterly and annual BEA surveys, as described in MP-3 [151, pages 22, 23, and 37] and in the June 1989 SURVEY OF CURRENT BUSINESS [158].

1.1.6 Change in trade inventories

In step 6, changes in inventories held by distributors are subtracted, because not all goods shipped by producers or imported in a given period are final purchases in the same period. In the 1977 I-O accounts, the inventory data used for this step are primarily from inventories reported by establishments in the *1977 Census of Wholesale Trade* [124] and in the *1977 Annual Retail Trade* [128].

Although sales of establishments are collected by type of commodity, inventories are collected only for the establishment as a whole. The commodity composition of inventories for each establishment industry, therefore, is estimated by multiplying sales of each commodity by the inventory-sales ratio of the establishment industry in which the product is primary. The sum of the resulting commodity inventories is then adjusted to equal the corresponding establishment-industry total. Total inventories for each commodity are obtained by summing the commodity detail across all industries.

1.1.7 Allocation of domestic supply among business, government, and persons

In step 7, purchases by government and business are subtracted from domestic supply at purchasers' prices—the result of steps 2 through 6—to obtain purchases by persons. However, this residual procedure is not used where additional source data are available on purchases by persons. There are two variations on the

standard commodity-flow procedure: (1) For a few commodities, source data are available to allocate domestic supply at purchasers' prices among persons, business, and government. (2) For some commodities, source data are available to estimate purchases by persons directly.

For commodities where the residual procedure is used to obtain purchases by persons, estimates of commodity purchases by governments and government enterprises are described in MP-5 [152]. Estimates of business purchases are derived in part from Census Bureau data on purchased materials and services, but because such data are not available for all business, most business purchases must be estimated using other data and, where necessary, judgment in place of data. In these cases, inputs to an industry may be estimated from trade source data, administrative records, or the cost structure of a similar industry for which data are available. For example, the expenses of business associations and professional membership organizations are estimated from the following diverse sources: Census Bureau data on payroll and employment, BEA estimates of capital consumption allowances, and trade source data and administrative records for the remaining inputs. In other cases, source data can provide the means for allocating the output of a commodity among purchasers. Thus, trade sources provide the basis for allocating the output of carpeting among industry inputs, business investment, and PCE.

In the first variation on the standard commodity-flow procedure, independent estimates are prepared of the distribution of domestic supply at purchasers' prices among persons, government, and business. This procedure is used for new autos, new trucks, and gasoline. In the second variation on the standard commodity-flow procedure, purchases by persons are estimated directly, either at producers' prices (coal, broadwoven fabric, yarn, and knit fabric) or at purchasers' prices (natural gas, electricity, telephone and telegraph, prescription drugs, motor oil, fuel oil, liquified petroleum gas, and kerosene).

1.1.8 Intersector sales of used goods

In step 8, net transactions in used goods between persons and other sectors are added. Margins on sales of used goods are included in earlier steps because they are based on the same source data as the trade margins for new goods described in step 4. Intersector sales (net transactions) are net sales of used goods to persons by business, foreigners, and government. The largest of these transactions are those in used motor vehicles; the sources used for the motor vehicle estimates are described in the section on special procedures. For other goods, net exports are from the Census merchandise trade series; business sales, primarily sales of used rental equipment, are derived from data on receipts of equipment rental establishments reported in the *1977*

Census of Service Industries [120]; and government sales of used equipment are estimated as described in MP-5 [152, pages 93–96].

1.2 Direct estimates

The commodity-flow method is not used for PCE categories where, by definition, the commodities are purchased only by persons. These categories are the following: Food furnished employees (including military); food produced and consumed on farms; standard clothing issued military personnel; the rental value of owner- and tenant-occupied dwellings; expense of handling life insurance; personal remittances in kind to foreigners; expenditures abroad by U.S. residents; expenditures in the United States by foreigners; domestic service other than cleaning services; health insurance; and reimbursement for government employee use of own motor vehicles.

Most of these categories are discussed in the introduction. The last category, reimbursement for government employee use of own motor vehicles, is a negative entry in PCE for used autos that offsets a positive entry in government purchases. Estimates for all these categories are prepared directly using a variety of source data.

1.3 Sources of the benchmark estimates

Table 11 identifies the principal source data and estimating methods for key elements that are important in the derivation of the PCE estimates. This information is presented for each PCE category shown in NIPA table 2.5; additional commodity detail is presented where different methodologies are used for the commodities within the category. Where special procedures are needed either because of the nature of the commodities (for example, rent) or the availability of more detailed source data (for example, new autos) table 11 provides only a summary description. More detail is presented at the end of this section for the following PCE categories: New autos, net transactions in used motor vehicles, gasoline, rental value of owner- and tenant-occupied nonfarm dwellings, brokerage charges and investment counseling, services furnished without payment by financial intermediaries except life insurance carriers and private noninsured pension plans, expense of handling life insurance, and religious activities.

Estimates of most PCE categories are prepared using the standard commodity-flow method described above; these categories are identified by the entry “residual estimate” in the “purchases by persons” column of table 11. The “domestic supply” column identifies the primary source of domestic commodity sales, which is one of the key elements in preparing the estimates of supply and which differs among the categories. This column also identifies secondary sources of sales, such as those by governments, for categories

where these sales are significant. Generally, no information is provided about the other key elements in the standard commodity-flow method—exports, change in inventories, distribution costs, and imports—because their sources, which are described in the text, are the same for all PCE categories. Where this is not the case, the other sources and methods are described in table 11.

Table 11 also indicates the categories that are prepared using variations on the standard commodity-flow method. For these categories, the “purchases by persons” column describes the additional source data and the methods used. In addition, there are a few categories, such as firewood, for which purchases by business and government are assumed to be statistically insignificant. These are identified by the entry “all purchases assumed by persons.”

Finally, table 11 indicates the categories that are estimated directly because, by definition, they are unique to PCE, such as food furnished civilian employees. These categories are identified by the entry “all purchases defined to persons” in the “purchases by persons” column. The entry “n.a.” (not applicable) in the “domestic supply” column indicates that the commodity-flow method is not used for this category and that the category is estimated directly. In these cases, the “purchases by persons” column identifies the principal source data used for the estimate.

For most of the PCE categories and commodities, “purchases by persons” are purchases by individuals only. As explained in the introduction, the expenditures of nonprofit institutions are not distributed among the individual commodities in PCE. A measure of their services equal to their current operating expenses is included in those PCE categories—other than life insurance—for which the domestic supply column has the entry “expenses.”

2 Annual Estimates: Nonbenchmark Years

In general, estimates of PCE categories for nonbenchmark years are prepared using an indicator series to interpolate between and extrapolate from the benchmark estimates, because most of the latter depend heavily on data available only from quinquennial censuses. The most important census data that are not available for other years are the following: (1) Detailed commodity shipments, revenues, and receipts, which are used to identify commodities purchased by persons and which provide measures of output of these commodities; (2) sales of wholesalers and retailers, by merchandise line, which provide the information necessary to convert trade inventories and trade margins from an establishment-industry basis to a commodity basis; and (3) materials purchased by mineral industries, construction, and manufacturing establishments, which provide measures of business

Table 11.—Source Data and Estimating Methods Used in Preparing Benchmark Estimates of Current-Dollar PCE¹

Line in NIPA table 2.5	Category and selected commodity ²	Domestic supply at purchasers' prices ³	Purchases by persons ⁴
	Goods:		
4	New autos (65) ⁵	Shipments from CM: Total domestic supply from physical quantity times average price. Unit sales and average list prices from trade sources; discounts and freight charges from BLS; sales taxes from ARTS and QS.	Information on new auto registrations by sector of owner.
5	Net purchases of used autos (66): Dealers' margin Net transactions ⁵ Employee reimbursement	Sales from CRT; margin rate from ARTS. Change in net stock of used autos . . . n.a.	Residual estimate. Information on auto registration by sector of owner. Expenditures from Federal budget data [220]. All purchases defined to persons.
6	Other motor vehicles (67): New trucks Net transactions in used trucks ⁵ Dealers' margin on used trucks Recreational vehicles	Shipments from CM Sales and dealer inventories from CRT, margin from ARTS, exports from Census [144]. Sales from CRT; margin rate from ARTS Shipments from CM	Information on primary use of small trucks from TIUS. TIUS. Information on primary use of small trucks from TIUS. Residual estimate.
7	Tires, tubes, accessories, and other parts (68): Tires Other	Shipments from CM Shipments from CM and CWT	Sales of replacement tires from trade source [102] allocated by persons' share of mileage. Residual estimate.
8	Furniture and household equipment (29-32, 87). ⁶	Shipments from CM	Residual estimate.
14	Other durable goods (18, 46, 83, 86) ⁷	Shipments from COG, CM, CWT, and CRT.	Residual estimate.
21	Food purchased for off-premise consumption (3).	Shipments from CA, CM, CWT, and CRT.	Residual estimate.
22	Purchased meals and beverages (4) . .	Receipts from CRT, GF, and CSI	Residual estimate.
23	Food furnished employees (including military) and food produced and consumed on farms (5 + 6): Food furnished civilian employees Food furnished military employees Food produced and consumed on farms.	n.a. n.a. n.a.	Expenditures from physical quantity times price: Number of employees in eating and drinking places, hotels and motels, and hospitals and average value of consumption. Employees from EE, average consumption estimated judgmentally. All purchases defined to persons. Expenditures from Federal budget data [220]. All purchases defined to persons. Value from USDA. All purchases defined to persons.

Table 11.—Source Data and Estimating Methods Used in Preparing
Benchmark Estimates of Current-Dollar PCE¹—Continued

Line in NIPA table 2.5	Category and selected commodity ²	Domestic supply at purchasers' prices ³	Purchases by persons ⁴
28	Shoes (12)	Shipments from CM	Residual estimate.
29	Women's and children's clothing and accessories except shoes (14).	Shipments from CM and CRT	For broadwoven fabric, yarn, and knit fabric, sales to persons at producers' prices, quantity from trade sources [82, 106] and prices from CM, times margin rate from ARTS; for others, residual estimates.
30	Men's and boys' clothing and accessories except shoes: Men's and boys' clothing and accessories except shoes (15).	Shipments from CM and CRT	For broadwoven fabric, yarn, and knit fabric, sales to persons at producers' prices, quantity from trade sources [82, 106] and prices from CM, times margin rate from ARTS; for others, residual estimates. Expenditures from Federal budget data [220]. All purchases defined to persons.
	Standard clothing issued military personnel (16).	n.a.	
31	Gasoline and oil (70): Gasoline ⁵ Motor oil	Shipments from CM Shipments from CM	Quantities purchased by persons times average retail price. Quantities from Federal agencies and trade sources; price from EIA. Quantities purchased by persons times average retail price. Quantities from quantities of gasoline purchased by persons times ratio of motor oil to gasoline sold at service stations from trade source [51]; price from BLS and USDA, updated by CPI for motor oil.
32	Fuel oil and coal (40): Fuel oil, kerosene, liquified petroleum gas, and coal. Firewood	Shipments from CMI and CM Shipments from CM and USDA	EIA. All purchases assumed by persons.
33	Other nondurable goods:		
34	Tobacco products (7)	Shipments from CM	All purchases assumed by persons.
41	Net foreign remittances: Expenditures abroad by U.S. residents (105). Less: Personal remittances in kind to foreigners (107). Other (21, 33-35, 45, 84, 85, 89) ⁸ . . .	n.a. n.a. Shipments from CA, CMI, and CM . . .	Expenditures from BPA data. All purchases defined to persons. Expenditures from BPA data. All purchases defined to persons. For broadwoven fabric, sales to persons at producers' prices, quantity from trade source [82] and average price from CM, times margin rate from ARTS. Prescription drugs from trade source [52]. For others, residual estimates.
	Services:		
45	Owner-occupied nonfarm dwellings—space rent (24). ⁸	n.a.	Expenditures from physical quantity times price: Number of owner-occupied units and imputed average rental value from Census. All purchases defined to persons.
46	Tenant-occupied nonfarm dwellings—rent (25). ⁸	n.a.	Expenditures from physical quantity times price: Number of tenant-occupied units and average rental value from Census. All purchases defined to persons.

Table 11.—Source Data and Estimating Methods Used in Preparing Benchmark Estimates of Current-Dollar PCE¹—Continued

Line in NIPA table 2.5	Category and selected commodity ²	Domestic supply at purchasers' prices ³	Purchases by persons ⁴
47	Rental value of farm dwellings (26) . . .	n.a.	Expenditures from USDA. All purchases defined to persons.
48	Other housing (27): Hotels and motels Higher education Elementary and secondary education Housing, n.e.c.	Receipts from CSI Receipts from GF and CES Receipts from physical quantity times price: Number of students and dormitory charges from CES. Receipts and expenses from CSI	Residual estimate. All purchases assumed by persons. All purchases assumed by persons. Residual estimate.
50	Electricity (37)	Receipts from EIA	Revenue from residential customers from EIA.
51	Gas (38)	Receipts from trade source [6]	Revenues from residential customers including commercial billings from trade source [6].
52	Water and other sanitary services (39)	Receipts from COG	Information on sales to residential customers from trade source [75] and from BEA study.
53	Telephone and telegraph (41)	Receipts from AT&T	Revenues from residential customers from AT&T.
54	Domestic service (42)	Receipts of cleaning services from CSI. For all others, n.a.	Residual estimate for cleaning services. For all others, physical quantity times price: Number of workers, weekly hours, and earnings from EE. All purchases defined to persons.
55	Other household operation (43): Personal property insurance Cleaning and repair service Moving and storage Postage Household operation, n.e.c.	Receipts from trade source [20] Receipts from CSI Receipts from ICC Receipts from USPS Receipts from CSI	Residual estimate. Residual estimate. Residual estimate. Residual estimate. Residual estimate.
57	User-operated transportation: Motor vehicle repair, greasing, washing, parking, storage, and rental (69). Bridge, tunnel, ferry, and road tolls (71). Motor vehicle insurance premiums less claims paid (72).	Receipts from CRT, CSI, and GF Receipts from FHWA Receipts from trade source [20]	Residual estimate. Residual estimate. Residual estimate.
59	Local transit systems (74)	Receipts from trade source [14]	Residual estimate.
60	Other purchased local transportation: Taxicabs (75) Railway (76)	Receipts from OTSAI Receipts from ICC	Residual estimate. Residual estimate.
62	Intercity railway transportation (78)	Receipts from ICC	Residual estimate.
63	Intercity bus transportation (79)	Receipts from ICC	Residual estimate.
64	Airline transportation (80)	Domestic passenger revenues, hours flown and average fares, or planes in service and average fares from TSC and FAA	Residual estimate.
65	Other purchased intercity transportation (81).	Receipts from CSI and ICC	Residual estimate.
67	Physicians (47)	Receipts from CSI	Residual estimate.

Table 11.—Source Data and Estimating Methods Used in Preparing
Benchmark Estimates of Current-Dollar PCE¹—Continued

Line in NIPA table 2.5	Category and selected commodity ²	Domestic supply at purchasers' prices ³	Purchases by persons ⁴
68	Dentists (48)	Receipts from CSI	Residual estimate.
69	Other professional medical services (49)	Receipts and expenses from CSI	Residual estimate.
70	Privately controlled hospitals and sanitariums (50): Privately controlled hospitals Nursing homes	Receipts and expenses from CSI Receipts and expenses from CSI	Residual estimate. Residual estimate.
71	Health insurance: Medical care and hospitalization (52) Income loss (53) Workers' compensation (54)	n.a. n.a. n.a.	Receipts and expenses from HCFA. All purchases defined to persons. Receipts and expenses from SSA. All purchases defined to persons. Receipts from trade source [20]. All purchases defined to persons.
74	Cleaning, storage, and repair of clothing and shoes (17).	Receipts from CSI	Residual estimate.
75	Barbershops, beauty parlors, baths, and health clubs (22).	Receipts from CSI	All purchases assumed by persons.
76	Other personal care services (19)	Receipts from CSI and CRT	All purchases assumed by persons.
78	Brokerage charges and investment counseling (56): ^a Securities commissions Commodities commissions Fees for investment counseling services. Services furnished without payment by domestic securities dealers Income from sale of investment company securities.	Commissions from SEC Commissions of security dealers from SEC; wages of commodity dealers from EW times ratio of revenues to wages of security dealers. Fees of security dealers from SEC and of banks from FDIC; wages of independent counselors from EW times ratio of revenue to wages of security dealers. Income from SEC Income from SEC	Information from NYSE. Residual estimate. Residual estimate. Information from NYSE. Information from trade source.
79	Bank service charges, trust services, and safe deposit box rental (57).	Receipts from FDIC	Residual estimate.
80	Services furnished without payment by financial intermediaries except life insurance carriers and private noninsured pension plans (58). ^b	Property income and interest paid from Federal regulatory agencies; profits of mutual depositories from IRS.	Information from Federal regulatory agencies. FRB and FHLBB.
81	Other personal business: Expense of handling life insurance (59). ^a Legal services (60) Funeral and burial expenses (61) Other (62): Trade union and professional association expenses.	n.a. Receipts and expenses from CSI Receipts from CSI and CM Expenses from CSI	Expenses for life insurance from trade sources, expenses of private pension plans and profits of stock life insurance companies from IRS. All purchases defined to persons. Residual estimate. Residual estimate. For trade unions, all purchases assumed by persons; for professional organizations, residual estimate.

Table 11.—Source Data and Estimating Methods Used in Preparing Benchmark Estimates of Current-Dollar PCE¹—Continued

Line in NIPA table 2.5	Category and selected commodity ²	Domestic supply at purchasers' prices ³	Purchases by persons ⁴
	Employment agency fees	Receipts from CSI	Residual estimate.
	Postal money orders	Receipts from USPS	Residual estimate.
	Classified ads	Receipts from trade source [96]	Residual estimate.
	Telegraph money orders	Receipts from FCC	Residual estimate.
	Accounting and tax return preparation services.	Receipts from CSI	Residual estimate.
	Travel and entertainment card fees	Receipts from trade source [5]	Residual estimate.
	Other personal business, n.e.c.	Receipts from CSI	Residual estimate.
83	Admissions to specified spectator amusements:		
	Motion picture theaters (91)	Receipts from CSI	Residual estimate.
	Legitimate theaters and opera, and entertainments of nonprofit institutions (except athletics) (92). Spectator sports (93)	Receipts and expenses from CSI	Residual estimate.
		Receipts from CSI, COG, and CES	Residual estimate.
84	Other recreation:		
	Radio and TV repair (88)	Receipts from CSI and CRT	Residual estimate.
	Clubs and fraternal organizations except insurance (94). Commercial participant amusements (95):	Expenses from CSI	All purchases assumed by persons.
	Sightseeing	Receipts from ICC	Residual estimate.
	Private flying	Receipts from FAA	Residual estimate.
	Casino gambling	Receipts from State agency [91]	All purchases assumed by persons.
	Other commercial participant amusements, n.e.c.	Receipts from CSI and GF	Residual estimate.
	Parimutuel net receipts (96)	Receipts from CSI and GF	All purchases assumed by persons.
	Other recreation, n.e.c. (97):		
	Pets and pet services, except veterinarians.	Receipts from USDA	Residual estimate.
	Veterinarians	Receipts from CA	Residual estimate.
	Cable TV	Receipts from FCC	All purchases assumed by persons
	Public broadcasting	Expenses from CPB	All purchases assumed by persons.
	High school recreation	Receipts from COG	Residual estimate.
	Lotteries	Receipts from COG	Residual estimate.
	Recreation, n.e.c.	Receipts and expenses from CSI and CRT.	Residual estimate.
85	Private education and research:		
86	Higher education (99)	Expenses from CSI and CES	Residual estimate.
87	Elementary and secondary schools (100):		
	Nursery schools	Receipts and expenses from CSI	All purchases assumed by persons.
	Other	Expenses of religious-affiliated schools: Wages from EW and CSI, and non-wage expenses from COG and CES. For all other schools, receipts and expenses from CSI.	All purchases assumed by persons.
88	Other private education and research (101).	Receipts and expenses from CSI	Residual estimate.
89	Religious and welfare activities (102):		
	Religion ⁴	Expenses from physical quantity times price: Membership and average contribution from trade sources.	All purchases assumed by persons.
	Political organizations	Expenses from CSI	All purchases assumed by persons.
	Social welfare	Expenses from CSI	Residual estimate.

Table 11.—Source Data and Estimating Methods Used in Preparing Benchmark Estimates of Current-Dollar PCE¹—Continued

Line in NIPA table 2.5	Category and selected commodity ²	Domestic supply at purchasers' prices ³	Purchases by persons ⁴
90	Museums and libraries	Receipts from COG and expenses from CSI.	Residual estimate.
	Foundations	Expenses: Wages from Census Bureau [126] and other expenses from HR.	All purchases assumed by persons.
	Net foreign travel: Foreign travel by U.S. residents (104).	Travel expenditures abroad and passenger fares paid to foreign airlines from BPA; passenger fares paid to U.S. carriers from TSC and BPA data	Residual estimate.
	Less: Expenditures in the United States by foreigners (106).	n.a.	Expenditures from BPA data. All purchases defined to persons.

n.a. Not applicable.

n.e.c. Not elsewhere classified.

1. Source data and estimating methods are those used for 1977 benchmark input-output accounts. Purchases of computers and video cassette rentals are not included in PCE until 1982.

2. Additional commodities are shown within a published PCE category when they are prepared using different source data or estimating methods.

3. Except as noted in the text, the commodity-flow method is used to estimate total domestic supply. The sources of estimates of domestic commodity sales are shown in this table; sources for the other steps of the commodity-flow method are noted in the text.

4. The entry "Residual estimate" means that the PCE estimate is derived as the difference between total commodity sales at purchasers' prices and purchases by business and government. The entry "All purchases assumed by persons" means that the category is unique to PCE. The entry "All purchases assumed by persons" means that purchases by business and government are assumed to be statistically insignificant, although information is not available.

5. For a more detailed description of the methodology used for this item, see the end of this section of the text.

6. Sum of lines 9 through 13 in NIPA table 2.5.

7. Sum of lines 15 through 18 in NIPA table 2.5.

8. Sum of lines 35 through 40 and 42 in NIPA table 2.5.

Note.—Number in parentheses after title is line number in NIPA table 2.4. Number in brackets refers to the item number in the listing of sources.

ARTS	Annual Retail Trade Survey (Census Bureau) [128].	FHLBB	Federal Home Loan Bank Board [46].
AT&T	American Telephone and Telegraph Company [16, 17].	FHWA	Federal Highway Administration, U.S. Department of Transportation [214].
BLS	Bureau of Labor Statistics, U.S. Department of Labor [197, 198].	FRB	Federal Reserve Board [24].
BPA	Balance of Payments Accounts (Bureau of Economic Analysis) [158].	GF	Governmental Finances (Census Bureau) [138].
CA	Census of Agriculture (Census Bureau) [113].	HCFA	Health Care Financing Administration, U.S. Department of Health and Human Services [191].
CES	Center for Education Statistics (U.S. Department of Education) [164, 166, 167, 168].	HR	U.S. House of Representatives [226].
CM	Census of Manufactures (Census Bureau) [117].	ICC	Interstate Commerce Commission [61, 62].
CMI	Census of Mineral Industries (Census Bureau) [118].	IRS	Internal Revenue Service, U.S. Department of the Treasury [205, 206].
COG	Census of Governments (Census Bureau) [114].	NYSE	New York Stock Exchange [95].
CPB	Corporation for Public Broadcasting [30, 31].	OTSAI	Office of Transportation Systems Analysis and Information [215].
CPI	Consumer Price Index (BLS) [201].	QS	Quarterly Summary of Federal, State, and Local Tax Revenue (Census Bureau) [141].
CRT	Census of Retail Trade (Census Bureau) [119].	SEC	Securities and Exchange Commission [229].
CSI	Census of Service Industries (Census Bureau) [120].	SSA	Social Security Administration, U.S. Department of Health and Human Services [193].
CWT	Census of Wholesale Trade (Census Bureau) [124].	TIUS	Truck Inventory and Use Survey (Census Bureau) [123].
EE	Employment and Earnings [202].	TSC	Transportation Systems Center [216].
EIA	Energy Information Administration, U.S. Department of Energy [169, 172-176, 182].	USDA	U.S. Department of Agriculture [108, 110].
EW	Employment and Wages [203].	USPS	U.S. Postal Service [228].
FAA	Federal Aviation Administration [210, 211].		
FCC	Federal Communications Commission [39, 42].		
FDIC	Federal Deposit Insurance Corporation [43].		

purchases used in the residual calculation of purchases by persons.

In addition, certain data that are important in deriving the PCE estimates are not available for other years because they are derived in preparing the benchmark I-O accounts. For example, the commodity detail on purchases by State and local governments enters into the estimates of purchases by business and government used in the residual calculation of purchases by persons, and State and local government sales detail enters into the calculation of domestic commodity sales.

The source data and estimating methods used to prepare the 1986–88 estimates released in July 1989 are shown in table 12. (Major changes over the years in the source data used are indicated in the footnotes to table 9.) Where necessary, the table distinguishes among the source data and estimating procedures used in the first, second, and third July revisions. Finally, the table indicates the few categories for which the indicator series is not based on annual source data, but is the sum of the monthly or quarterly estimates. The information in table 12 is presented in the same detail as in table 11 except for computers, American Eagles, and video cassette rentals, three commodities that were not purchased by persons in 1977.

2.1 Goods

2.1.1 Goods extrapolated by the retail-control method

The retail-control method provides, first, the indicator series used in interpolating and extrapolating the total of most goods and, second, provides the “control” total to which the categories included in this group must sum. The goods to which it is applied are called the “retail-control group,” consisting of all goods except motor vehicles, computers and peripheral equipment, gasoline and oil, food furnished employees, food produced and consumed on farms, standard clothing issued military personnel, tobacco products, and net foreign remittances.

The indicator series for the retail-control total is derived primarily from retail store sales as reported by the Census Bureau, excluding sales of building material stores, hardware stores, garden supply stores, mobile home dealers, gasoline service stations, and motor vehicle dealers. (These outlets are omitted because most of their sales either relate to homeownership items that are not included in PCE or consist of products that can more reliably be estimated from other source data.) To the remaining retail store sales are added (1) sales of military commissaries and exchanges and (2) sales of goods other than gasoline and oil by gasoline service stations. The latter sales are calculated as total sales at gasoline service stations less sales of gasoline and oil and less receipts for repair services. (Sales of gasoline and oil are estimated using

quantities and average price data; receipts for repair services are estimated as a fixed proportion of sales other than for gasoline and oil, based on merchandise line sales from the most recent census of retail trade.) The indicator series is used to extrapolate total PCE for the retail-control group.

Estimates of the underlying commodity detail are derived primarily from data on merchandise line sales from the most recent census of retail trade and annual data on retail sales by kind of business. First, independent estimates of purchases by persons of tobacco and of computers and peripheral equipment are removed. Then, the commodity composition of the remainder is determined using a two-stage process. In the first stage, the benchmark levels of the component commodities are extrapolated by estimates of retail sales of those commodities; these estimates are prepared by disaggregating annual data on retail sales for each kind of business, using commodity proportions from the census of retail trade data on merchandise line sales, and then aggregating each commodity across kinds of business. In the second stage, estimated sales of the extrapolated commodities are adjusted proportionately to agree with the previously determined retail-control group total. (The retail-control group includes landlord purchases of durable equipment, which are included in the residential investment component of GNP, and these purchases are also estimated.)

For 1948–58, the data used for the retail control indicator series were a combination of Census Bureau retail sales of specialty stores [131] and Federal Reserve Board data on retail sales of department stores, by department [23]. This indicator was also used to interpolate between the commodity flow estimates of 1929–39 and 1947.

The retail-control method assumes that the following three ratios remain constant: (1) The ratio of merchandise line sales of each commodity to total sales for each kind of business within the control group; (2) the ratio of total purchases by persons at retail-control group stores to total purchases by persons; and (3) the ratio of purchases by persons at these stores to total sales of these stores.

2.1.2 Other goods

Table 12 also indicates the methods used for nonbenchmark year estimates of goods that are not extrapolated by the retail-control method. For new trucks, an abbreviated commodity-flow method is used. For other motor vehicles and for gasoline and oil, the procedures are discussed in more detail at the end of this section. For food furnished military employees, food produced and consumed on farms, standard clothing issued military personnel, and net foreign remittances, the method is the same as that used in the benchmark estimates. For tobacco products and for computers and peripheral equipment, independent source data are used.

Table 12.—Source Data and Estimating Methods Used in Preparing
Nonbenchmark Annual Estimates of Current-Dollar PCE¹

Line in NIPA table 2.5	Category and selected commodity ²	Source data and estimating methods used in preparing interpolators and extrapolators ³
	Goods:	
4	New autos (65) ⁴	Physical quantity purchased times average retail price: Unit sales, information to allocate sales to persons, and most components of current average list prices, all from trade sources. Information on optional equipment available from trade source. Information on discounts, freight charges, etc., from BLS.
5	Net purchases of used autos (66): Dealers' margin	3rd and 2nd July: For franchised dealers, wholesale value of sales times margin rate. Unit sales and average price from trade sources [32, 68]; margin rate of independent dealers from ARTS. For independent dealers, margin from ARTS. 1st July: For franchised dealers, same as 2nd July except margin rate is from previous year. For independent dealers, sales from MRTS times margin rate from previous year. Change in net stock of used autos owned by persons. ⁵ Expenditures from Federal budget data [220]. ⁵
	Net transactions	
	Employee reimbursement	
6	Other motor vehicles (67): New trucks ⁶	3rd and 2nd July: Abbreviated commodity-flow estimate. Shipments from ASM; exports and imports from Census [144, 145] dealer inventory change from trade sources [69, 234] information to allocate sales to persons from trade sources [100]. Benchmark relationships used for other elements of the commodity-flow method. 1st July: Unit sales of light trucks and information to allocate sales to persons from trade sources [69, 100]; average price based on base-year prices and CPI for new trucks. Business purchases of new trucks 5 years ago. Purchases of new trucks by persons. 3rd and 2nd July: Retail trade sales from ARTS. 1st July: Retail trade sales from MRTS.
	Net transactions in used trucks ⁴	
	Dealers' margin on used trucks	
	Recreational vehicles	
7	Tires, tubes, accessories, and other parts (68)	3rd and 2nd July: Retail-control method using retail trade sales from ARTS. 1st July: Retail-control method using retail trade sales from MRTS. ⁷
8	Furniture and household equipment (29-32, 87): Computers and peripheral equipment (87pt.) ⁸	Purchases from BLS [200]. 3rd and 2nd July: Retail control method using retail trade sales from ARTS. 1st July: Retail-control method using retail trade sales from MRTS. ⁷
	Other furniture and household equipment ⁸	
14	Other durable goods (18, 46, 83, 86): American Eagles ¹⁰	American Eagle coin sales, in ounces [195], times average price of gold per ounce [66]. 3rd and 2nd July: Retail-control method using retail trade sales from ARTS. 1st July: Retail-control method using retail trade sales from MRTS. ⁷
	Other ¹¹	
21	Food purchased for off-premise consumption (3)	3rd and 2nd July: Retail-control method using retail trade sales from ARTS. 1st July: Retail-control method using retail sales from MRTS. ⁷
22	Purchased meals and beverages (4)	3rd and 2nd July: Retail-control method using retail trade sales from ARTS. 1st July: Retail-control method using retail trade sales from MRTS. ⁷
23	Food furnished employees (including military) and food produced and consumed on farm (5 + 6): Food furnished civilian employees	Number of employees in eating and drinking places, hotels and motels, and hospitals from EE times CPI for food away from home. Expenditures from Federal budget data [220]. ⁵ Value from USDA. ⁵
	Food furnished military employees	
	Food produced and consumed on farms (6)	

Table 12.—Source Data and Estimating Methods Used in Preparing
Nonbenchmark Annual Estimates of Current-Dollar PCE¹—Continued

Line in NIPA table 2.5	Category and selected commodity ²	Source data and estimating methods used in preparing interpolators and extrapolators ³
28	Shoes (12)	3rd and 2nd July: Retail-control method using retail trade sales from ARTS. ⁷ 1st July: Retail-control method using retail trade sales from MRTS. ⁷
29	Women's and children's clothing and accessories except shoes (14).	3rd and 2nd July: Retail-control method using retail trade sales from ARTS. ⁷ 1st July: Retail-control method using retail trade sales from MRTS. ⁷
30	Men's and boys' clothing and accessories except shoes: Men's and boy's clothing and accessories except shoes (15). Standard clothing issued military personnel (16) ..	3rd and 2nd July: Retail-control method using retail trade sales from ARTS. ⁷ 1st July: Retail-control method using retail trade sales from MRTS. ⁷ Expenditures from Federal budget data [220]. ⁵
31	Gasoline and oil (70): Gasoline ⁴	3rd and 2nd July: Physical quantities purchased times average retail price. Gallons consumed from federal agencies and trade sources, and average retail price from EIA. 1st July: Physical quantities purchased times average retail price. Gallons consumed and average price, both from EIA.
	Motor oil	Quantity of gasoline purchased by persons times CPI for motor oil, coolant, and other products.
32	Fuel oil and coal (40): Fuel oil, kerosene, liquified petroleum gas, and coal. Firewood	3rd and 2nd July: Retail-control method using retail trade sales from ARTS. ⁷ 1st July: Retail-control method using retail trade sales from MRTS. ⁷ 3rd and 2nd July: Retail-control method using retail trade sales from ARTS. ⁷ 1st July: Retail-control method using retail trade sales from MRTS. ⁷
33	Other nondurable goods:	
34	Tobacco products (7)	Quantity sold from trade source [29] times CPI for tobacco.
41	Net foreign remittances: Expenditures abroad by U.S. residents (105) . . . Less: Personal remittances in kind to foreigners (107). Other goods (21, 33-35, 45, 84, 85, 89) ¹²	Expenditures from BPA data. ⁵ Expenditures from BPA data. ⁵ 3rd and 2nd July: Retail-control method using retail trade sales from ARTS. ⁷ 1st July: Retail-control method using retail trade sales from MRTS. ⁷
	Services:	
45	Owner-occupied non-farm dwellings—space rent (24). ⁴	Number of owner-occupied units times imputed average rental value.
46	Tenant-occupied non-farm dwellings—rent (25) ⁴	Number of tenant-occupied units times average rental value.
47	Rental value of farm dwellings (26)	Expenditures from USDA. ⁵
48	Other housing (27): Hotels and motels	Receipts from SAS less gambling receipts from reports of the States of Nevada [90, 91] and New Jersey [92].
	Higher education	Number of students times average dormitory room charge, both from CES.
	Elementary and secondary education	Number of students from CPS less enrollment at religiously affiliated schools from trade source [80] times CPI for lodging while at school.
	Housing, n.e.c.	Wages and salaries from EW.
50	Electricity (37)	Residential revenues from EEI.
51	Gas (38)	3rd and 2nd July: Residential revenue from EIA. 1st July: Residential revenue from AGA.
52	Water and other sanitary services (39)	3rd July: Revenues of State and local agencies from GF. 1st and 2nd July: Judgmental trend.

Table 12.—Source Data and Estimating Methods Used in Preparing
Nonbenchmark Annual Estimates of Current-Dollar PCE¹—Continued

Line in NIPA table 2.5	Category and selected commodity ²	Source data and estimating methods used in preparing interpolators and extrapolators ³
53	Telephone and telegraph (41)	Local and toll revenue and revenue of specialized long distance carriers from FCC adjusted to include Federal taxes.
54	Domestic service (42)	Number of workers times weekly hours times earnings from EE.
55	Other household operation (43): Personal property insurance Cleaning and repair services Moving and storage Postage Household operation, n.e.c.	Premiums earned less losses incurred and dividends to policy-holders for fire and allied lines, homeowners multiple peril, inland marine, and other liability insurance from A.M. Best [21]. Wages from EW times ratio of receipts for miscellaneous repair services from SAS to wages. Receipts from ICC. Receipts from first class, fourth class, and priority mail from USPS. Receipts from SAS.
57	User-operated transportation: Motor vehicle repair, greasing, washing, parking, storage, and rental (69). Bridge, tunnel, ferry, and road tolls (71) Motor vehicle insurance premiums less claims (72)	3rd and 2nd July: Receipts of automotive repair shops, passenger car rental and leasing establishments, and other automotive service establishments from SAS; receipts of gasoline service stations and other retail establishments handling motor vehicle repair and rental and leasing from ARTS; and receipts for repair services by franchised car and truck dealers from NADA. 1st July: Same as 2nd July except MRTS for retail establishments other than franchised car and truck dealers. 3rd and 2nd July: Toll receipts from FHWA. 1st July: Quantity of gasoline sold from EIA times average tolls from trade source [54, 55]. Premiums earned less losses incurred and dividends to policy-holders for private passenger automobile insurance from A.M. Best [21].
59	Local transit systems (74)	3rd July: Receipts from APTA. 2nd and 1st July: Passenger trips from APTA times CPI for intracity mass transit.
60	Other purchased local transportation:	
	Taxicab (75)	Number of taxicabs from trade source [28] times CPI for taxicabs.
	Railway (76)	Passenger revenue, class I railroads excluding AMTRAK, from ICC.
62	Intercity railway transportation (78)	Passenger revenue from AMTRAK [89].
63	Intercity bus transportation (79)	Passenger revenue, class I intercity buses, from ICC.
64	Airline transportation (80)	Domestic passenger revenue of certificated carriers; hours flown times average fare for air taxis and commuter carriers; and planes in service times average fare for other commercial carriers, from TSC and FAA.
65	Other purchased intercity transportation (81)	Receipts from SAS.
67	Physicians (47)	Receipts of physicians in private practice from SAS, receipts of physicians employed by prepaid health plans, less purchases by governments, both from HCFA.
68	Dentists (48)	Receipts of dentists in private practice from SAS, receipts of dentists employed by prepaid health plans, less purchases by government, both from HCFA.

Table 12.—Source Data and Estimating Methods Used in Preparing
Nonbenchmark Annual Estimates of Current-Dollar PCE¹—Continued

Line in NIPA table 2.5	Category and selected commodity ²	Source data and estimating methods used in preparing interpolators and extrapolators ³
69	Other professional medical services (49)	Receipts and revenues from SAS, less payments to physicians and dentists employed by prepaid health plans and government purchases, both from HCFA, less operating expenses of prepaid health plans with own facilities from HCFA.
70	Privately controlled hospitals and sanitariums (50): Privately controlled hospitals Nursing homes	3rd and 2nd July: Expenses of proprietary and nonprofit private hospitals from AHA less government purchases from HCFA. 1st July: Expenses of community hospitals from AHA. Receipts and revenues of private nursing homes from SAS less government purchases for veterans from HCFA.
71	Health insurance: Medical care and hospitalization (52) Income loss (53) Workers' compensation (54)	3rd and 2nd July: Premiums less benefits for commercial insurance carriers; operating expenses of nonprofit plans; premiums paid by employers for commercial insurance for accidental death and dismemberment, all from HCFA. 1st July: HCFA projections. 3rd July: Premium less benefits from SSA [193]. ⁴ 2nd July: Premium less benefits from HIAA. 1st July: Judgmental trend. Premiums earned less losses incurred and dividends to policy-holders from A.M. Best [21].
74	Cleaning, storage, and repair of clothing and shoes (17).	Wages from EW for shoe repair shops, shoe shine parlors, and hat cleaning shops; receipts for laundry, cleaning, and garment services from SAS.
75	Barbershops, beauty parlors, baths, and health clubs (22).	Receipts from SAS.
76	Other personal care services (19)	Wages from EW for watch and jewelry repair; receipts for miscellaneous personal services from SAS.
78	Brokerage charges and investment counseling (56): ⁴ Securities commissions Commodity commissions Fees for investment counseling services Services furnished without payment by domestic securities dealers Income from sale of investment company securities.	3rd and 2nd July: Commissions from SEC; value of trading from NYSE, SEC, and NASD reports. 1st July: Same as 2nd July except commissions from NYSE. 3rd and 2nd July: Commodity revenue of security dealers from SEC. 1st July: Commodity revenue from NYSE. Fees of security dealers and banks from FDIC; wages from EW for independent counselors times mark-up of security dealers from SEC. 3rd and 2nd July: Income from SEC and transactions from FRBNY. 1st July: Income from NYSE and transactions from FRBNY. 3rd and 2nd July: Income from SEC. 1st July: Income from NYSE.
79	Bank service charges, trust services, and safe deposit box rental (57).	Receipts from FDIC.
80	Services furnished without payment by financial intermediaries except life insurance carriers and private noninsured pension plans (58). ⁴	Property income received and interest paid by financial intermediaries and share of deposits held by persons from regulatory agency reports. ⁵

Table 12.—Source Data and Estimating Methods Used in Preparing Nonbenchmark Annual Estimates of Current-Dollar PCE¹—Continued

Line in NIPA table 2.5	Category and selected commodity ²	Source data and estimating methods used in preparing interpolators and extrapolators ³
81	<p>Other personal business:</p> <p>Expense of handling life insurance (59)⁴</p> <p>Legal services (60)</p> <p>Funeral and burial expenses (61)</p> <p>Other (62):</p> <p>Trade union and professional association expenses</p> <p>Employment agency fees</p> <p>Postal money orders</p> <p>Classified ads</p> <p>Telegraph money orders</p> <p>Accounting and tax return preparation services</p> <p>Travel and entertainment card fees</p> <p>Other personal business, n.e.c.</p>	<p>3rd July: Expenses of legal reserve companies related to life insurance operations from ACLI; profits of stock life insurance carriers from IRS. Premiums for fraternal benefit societies from trade source. Pension fund commission expense from ACLI and NYSE; other pension fund expenses, wages from EW.</p> <p>2nd July: Same as 3rd July except profits from trade source.</p> <p>1st July: Wages from EW.</p> <p>Receipts and revenues from SAS.</p> <p>Receipts from SAS.</p> <p>Wages from EW.</p> <p>Receipts from SAS.</p> <p>Revenue from USPS.</p> <p>Revenue from NAB.</p> <p>Revenue from Western Union [235].</p> <p>Receipts from SAS.</p> <p>Receipts from American Express [5].</p> <p>Wages from EW.</p>
83	<p>Admissions to specified spectator amusements:</p> <p>Motion picture theaters (91)</p> <p>Legitimate theaters and opera, and entertainments of nonprofit institutions (except athletics) (92).</p> <p>Spectator sports (93)</p>	<p>Receipts from SAS.</p> <p>Wages from EW.</p> <p>3rd July: Receipts for professional football, from NFL; CPI for admissions times admissions from trade sources [12, 71, 88, 142] for the following: Professional baseball, hockey and basketball; college athletics; and dog and horse racing; the value of admissions receipts for high school athletics from GF; judgmental trend for auto racing.</p> <p>1st and 2nd July: Same as 3rd July except judgmental trend for high school athletics.</p>
84	<p>Other recreation:</p> <p>Radio and TV repair (88)</p> <p>Clubs and fraternal organizations except insurance (94).</p> <p>Commercial participant amusements (95):</p> <p>Sightseeing</p> <p>Private flying</p> <p>Casino gambling</p> <p>Other commercial participant amusements, n.e.c.</p> <p>Parimutuel net receipts (96)</p> <p>Other recreation, n.e.c.(97):</p> <p>Pets and pet services except veterinarians</p> <p>Veterinarians</p> <p>Cable TV</p> <p>Public broadcasting</p> <p>High school recreation</p>	<p>Receipts from SAS.</p> <p>Receipts and revenues for social and athletic clubs from SAS; membership in other organizations from CES and trade source [97] times CPI for all items.</p> <p>Special bus receipts of intercity buses from ICC.</p> <p>Hours flown in general aviation from FAA times CPI for all items.</p> <p>Receipts from State agency reports [90, 92].</p> <p>Receipts from SAS.</p> <p>3rd July: Total take and break from NASRC; receipts from off-track betting from GF.</p> <p>2nd July: Same as 3rd July except judgmental trend for off-track betting.</p> <p>1st July: Judgmental trend.</p> <p>Number of registered dogs from AKC times CPI for pets and pet services.</p> <p>Wages from EW.</p> <p>Receipts from trade source [79].</p> <p>3rd and 2nd July: Expenses from CPB.</p> <p>1st July: Judgmental trend.</p> <p>3rd July: Receipts from GF.</p> <p>1st and 2nd July: Judgmental trend.</p>

Table 12.—Source Data and Estimating Methods Used in Preparing
Nonbenchmark Annual Estimates of Current-Dollar PCE¹—Continued

Line in NIPA table 2.5	Category and selected commodity ²	Source data and estimating methods used in preparing interpolators and extrapolators ³
85 86	Lotteries Video cassette rentals Recreation, n.e.c.	3rd July: Receipts from GF. 1st and 2nd July: Judgmental trend. Expenditures by consumers from trade source [38]. Receipts from SAS.
85 86	Private education and research: Higher education (99)	3rd and 2nd July: Expenses adjusted to exclude dormitory charges, food, other revenue, and sales to business and government, all from CES. 1st July: Enrollment from CES times price index for higher education from trade source [101].
87	Elementary and secondary schools (100): Nursery schools Other	Revenues (nonprofit) and receipts (for profit) from SAS. Enrollment from trade source [80] and CPS times PPI for industrial commodities for receipts net of wages of for-profit schools and nonwage expenses of nonprofit schools; wages from EW for all schools.
88	Other private education and research (101)	3rd and 2nd July: Receipts from SAS for correspondence and vocational schools; wages from EW for nonprofit research organizations and for schools and educational services, n.e.c.; grants for educational activities from trade source [107] for foundations. 1st July: Same as 2nd July except wages from EW used for foundations.
89	Religious and welfare activities (102): Religion ⁴	3rd and 2nd July: Membership times average contribution or expenses, both from trade sources. 1st July: Population from Census and per capita disposable personal income from BEA.
	Political organizations	Expenses of congressional and presidential elections from FEC; number of votes cast in State and local elections from trade source [34] times cost index based on earnings and PPI from BLS.
	Social welfare Museums and libraries Foundations	Wages from EW. Wages from EW. Grants for social welfare activities from trade source. [107]
90	Net foreign travel: Foreign travel by U.S. residents (104) Less: Expenditures in the United States by foreigners (106).	Travel expenditures abroad and passenger fares paid to foreign airlines from BPA. Passenger fares paid to U.S. carriers from BPA and DOT. Travel expenditures in United States by foreigners from BPA.

n.e.c. Not elsewhere classified.

1. Source data and estimating methods are those used for the July 1989 annual NIPA revision.
2. Additional commodities are shown within a published PCE category when they are prepared using different source data or estimating methods.
3. "3rd July," "2nd July," and "1st July" refer to the third, second, and first annual NIPA revisions, respectively.
4. For a more detailed description of the methodology used for this item, see the end of this section of the text.
5. Source data and estimating method is same as that used for the benchmark estimates.
6. Estimates of PCE new trucks are prepared as part of estimates of purchases of trucks by business.
7. For a description of the retail-control method, see text.
8. Part of line 12 in NIPA table 2.5.
9. Sum of lines 9 through 11, 13, and the remainder of 12 in NIPA table 2.5.
10. Part of line 17 in NIPA table 2.5.
11. Sum of lines 15, 16, 18, and the remainder of 17 in NIPA table 2.5.
12. Sum of lines 35 through 40 and 42 in NIPA table 2.5.

Note.—Number in parentheses after title is line number in NIPA table 2.4. Number in brackets refers to the item number in the listing of sources.

ACLI	American Council of Life Insurance.	FHWA	Federal Highway Administration, U.S. Department of Transportation [213].
AGA	American Gas Association [6, 7, 8].	FRBNY	Federal Reserve Bank of New York.
AHA	American Hospital Association [9, 10].	GF	<i>Governmental Finances</i> (Census Bureau) [138].
AKC	American Kennel Club [11].	HCFA	Health Care Financing Administration, U.S. Department of Health and Human Services [189, 190, 191].
APTA	American Public Transit Association [14, 15].	HIAA	Health Insurance Association of America [50].
ARTS	Annual Retail Trade Survey (Census Bureau) [128].	ICC	Interstate Commerce Commission [57, 58, 60, 61, 62].
ASM	Annual Survey of Manufactures (Census Bureau) [129].	IRS	Internal Revenue Service, U.S. Department of the Treasury [205, 206].
BLS	Bureau of Labor Statistics, U.S. Department of Labor [197].	MRTS	Monthly Retail Trade Survey (Census Bureau) [127, 131].
BPA	Balance of Payments Accounts (Bureau of Economic Analysis) [158].	NAB	Newspaper Advertising Bureau [96].
CES	Center for Education Statistics (U.S. Department of Education) [164, 165, 166, 167, 168].	NADA	National Automobile Dealers Association [76].
CPB	Corporation for Public Broadcasting [30, 31].	NASD	National Association of Securities Dealers.
CPI	Consumer Price Index (BLS) [201].	NASRC	National Association of State Racing Commissioners [74].
CPS	Current Population Survey (Census Bureau) [137].	NFL	National Football League [86].
EE	<i>Employment and Earnings</i> (BLS) [202].	NYSE	New York Stock Exchange.
EEl	Edison Electric Institute [33].	PPI	Producer Price Index (BLS) [204].
EIA	Energy Information Administration, U.S. Department of Energy [169, 170, 172-177, 180, 182].	SAS	Service Annual Survey (Census Bureau) [132].
EW	<i>Employment and Wages</i> (BLS) [203].	SEC	Securities and Exchange Commission [229].
FAA	Federal Aviation Administration [210, 211, 212].	TSC	Transportation Systems Center [216, 217, 218].
FCC	Federal Communications Commission [39-42].	USDA	U.S. Department of Agriculture [108].
FDIC	Federal Deposit Insurance Corporation [43, 44].	USPS	U.S. Postal Service [228].
FEC	Federal Election Commission [222, 223, 224].		

2.2 Services

A variety of methods is used to construct indicator series for the PCE service categories, as indicated in table 12. The methodologies used for the rental value of owner- and tenant-occupied dwellings, brokerage charges and investment counseling, services furnished without payment by financial intermediaries except life insurance carriers and private noninsured pension plans, the expense of handling life insurance, and religion are described in greater detail at the end of this section. The preferred approach for the remainder is to use receipts—or, for nonprofit institutions, expenses—as the indicator.

For services that use industry receipts as the indicator series—for example, legal services—it is assumed that the proportion of these receipts accounted for by persons in the benchmark year remains constant. For services for which annual data on receipts are not available, several approaches are used. In some cases—for example, spectator sports—an indicator series for receipts is derived from the number of admissions and the CPI for admissions, again on the assumption that the proportion of industry receipts accounted for by persons remains constant. In other cases—for example, employment agency fees—the indicator series is wages and salaries for the industry. This approach assumes that both the ratio of wages and salaries to receipts and the proportion of industry receipts accounted for by persons remain constant.

Finally, for services provided mainly by nonprofit institutions—for example, social welfare—the indicator series also is wages and salaries for the industry. This approach assumes that the ratio of wages and salaries to total current operating expenditures and

the proportion of these expenditures accounted for by persons remain constant.

3 Quarterly and Monthly Estimates

The source data and estimating methods used in preparing the quarterly and monthly estimates of current-dollar PCE released in July 1989 are shown in table 13, using the same categories and detail as those shown in table 12. Table 13 identifies categories for which different sources and methods are used for “historical” estimates—that is, those prepared for the years covered by annual or benchmark revisions—and for “current” estimates—that is, those prepared for the years that have not yet been subject to an annual revision. (Major changes over time in the source data used are identified in the footnotes to table 9.) Table 13 also provides information about the seasonal adjustment of the PCE estimates. Except as noted, indicator series are seasonally adjusted using the Census X-11 seasonal adjustment program. For categories for which a judgmental trend is used for quarterly or monthly estimates, the trend represents a seasonally adjusted series.

3.1 Historical estimates

Historical estimates are prepared from annual interpolations that generally use the same indicator series or judgmental trend as that used for the current estimates, unless additional source data become available. Where source data are quarterly, the historical

Table 13.—Source Data and Estimating Methods Used in Preparing Quarterly Estimates of Current-Dollar PCE¹

Line in NIPA table 2.5	Category and selected commodity ²	Source data and estimating methods used in preparing interpolators and extrapolators ³
	Goods:	
4	New autos (65) ⁴	Historical: Physical quantity purchased times average retail price. Unit sales, information to allocate sales to persons, and components of average list prices, all from trade sources; information on discounts, freight charges, etc., from BLS. Current: Same as historical, except information on options purchased by nameplate not available. For advance estimate, 3 months unit sales, 3 months average retail price, and 1 month of share purchased by persons.
5	Net purchases of used autos (66): Dealers' margin	Used car sales times margin rate; unit sales of franchised auto dealers and auction price from trade sources [32, 68] and margin rates from annual estimate. Advance estimate, 1 month of unit sales and 3 months of auction prices.
	Net transactions ⁴	Residual based on net sales by other sectors. Advance estimate, 1 month inventories (NSA) and 3 months of auction prices.
	Employee reimbursement	Judgmental trend.
6	Other motor vehicles (67): New trucks ⁵	Physical quantity purchased times average retail price. Unit sales of light trucks and information to allocate sales to persons from trade sources [69, 100, 234]; average price based on base-year prices and CPI for new trucks. Advance estimate: 3 months of unit sales, 2 months of average retail price and imports, and 1 month of share purchased by persons.
	Net transactions in used trucks ⁴	Purchases of new trucks by persons.
	Dealers' margin on used trucks	Purchases of new trucks by persons.
	Recreational vehicles	Retail trade sales from MRTS.
7	Tires, tubes, accessories, and other parts (68)	Retail-control method using retail trade sales from MRTS. ⁶
8	Furniture and household equipment (29-32, 87): Computers and peripheral equipment ⁷	Retail-control method using retail trade sales from MRTS. ⁶
	Other furniture and household equipment ⁸	Retail-control method using retail trade sales from MRTS. ⁶
14	Other durable goods (18, 46, 83, 86): American Eagles ⁹	American Eagle coin sales, in ounces [195], times average price of gold per ounce [66].
	Other ¹⁰	Retail-control method using retail trade sales from MRTS. ⁶
21	Food purchased for off-premise consumption (3)	Retail-control method using retail trade sales from MRTS. ⁶
22	Purchased meals and beverages (4)	Retail-control method using retail trade sales from MRTS. ⁶
23	Food furnished employees (including military) and food produced and consumed on farms (5 + 6): Food furnished civilian employees	Employees times average price. Number of employees in eating and drinking places, hotels and motels, and hospitals from EE times CPI for food away from home. Advance estimate, 3 months of employees and of prices.
	Food furnished military employees	Judgmental trend.
	Food produced and consumed on farms (6)	Judgmental trend.
28	Shoes (12)	Retail-control method using retail trade sales from MRTS. ⁶
29	Women's and children's clothing and accessories except shoes (14).	Retail-control method using retail trade sales from MRTS. ⁶

Table 13.—Source Data and Estimating Methods Used in Preparing Quarterly Estimates of Current-Dollar PCE¹—Continued

Line in NIPA table 2.5	Category and selected commodity ²	Source data and estimating methods used in preparing interpolators and extrapolators ³
30	Men's and boys' clothing and accessories except shoes: Men's and boys' clothing and accessories except shoes (15). Standard clothing issued military personnel (16) . .	Retail-control method using retail trade sales from MRTS. ⁶ Judgmental trend.
31	Gasoline and oil (70): Gasoline ⁴	Physical quantity purchased times average retail price. Advance estimate, gallons consumed: For first month, product supplied from EIA and for other months, weekly estimates from EIA; prices for first 2 months from EIA and third month from CPI and EIA.
32	Motor oil Fuel oil and coal (40): Fuel oil, kerosene, liquified petroleum gas, and coal.	Gasoline purchases times CPI for motor oil, coolant, and other products.
33	Other nondurable goods:	Retail-control method using retail trade sales from MRTS. ⁶
34	Tobacco products (7)	Judgmental trend.
41	Net foreign remittances: Expenditures abroad by U.S. residents (105) ¹¹ . . Less: Personal remittances in kind to foreigners (107). Other goods (21, 33-35, 45, 84, 85, 89) ¹²	Expenditures. Advance and preliminary estimate, BPA projection (NSA). Final estimate, BPA data for quarter. Remittances. Advance and preliminary estimate, BPA projection (NSA). Final estimate, BPA data for quarter. Retail-control method using retail trade sales from MRTS. ⁶
	Services:	
45	Owner-occupied nonfarm dwellings—space rent (24). ⁴	Number of units times imputed average rental value (NSA). ¹¹
46	Tenant-occupied nonfarm dwellings—rent (25) ⁴	Number of units times average rental value (NSA). ¹¹
47	Rental value of farm dwellings (26)	Judgmental trend.
48	Other housing (27): Hotels and motels Higher education Elementary and secondary education Housing, n.e.c.	Number of rooms times occupancy rate times average room rate, all from trade sources [65, 104]. Judgmental trend. Judgmental trend. Judgmental trend.
50	Electricity (37)	Historical: Residential revenues from EEI. Current: For advance estimate, projected kilowatt hours based on heating/cooling degree day data from NOAA times price based on CPI for electricity. For preliminary estimate, revenue from EIA for first month of quarter.
51	Gas (38)	Historical: Residential revenues from AGA. Current: For advance estimate, projected BTU's based on heating/cooling degree day data from NOAA times price based on CPI for utility (piped) gas. For preliminary estimate, BTU's from AGA for first month of quarter.
52	Water and other sanitary services (39)	Judgmental trend.
53	Telephone and telegraph (41)	Revenues. ¹¹ Advance estimate, local network and long distance revenues (NSA) from FCC for first month of quarter. Final estimate, quarterly operating revenue of MCI, Inc. [67] (NSA).
54	Domestic service (42)	Judgmental trend.

Table 13.—Source Data and Estimating Methods Used in Preparing Quarterly Estimates of Current-Dollar PCE¹—Continued

Line in NIPA table 2.5	Category and selected commodity ²	Source data and estimating methods used in preparing interpolators and extrapolators ³
55	Other household operation (43): Personal property insurance Cleaning and repair service Moving and storage Postage Household operation, n.e.c.	Premiums earned less losses incurred and dividends to policy-holders. Advance and preliminary estimate, judgmental trend. Final estimate, premiums less losses and dividends for quarter from A.M. Best [21]. ¹³ Judgmental trend. Judgmental trend. Judgmental trend. Judgmental trend.
57	User-operated transportation: Motor vehicle repair, greasing, washing, parking, storage, and rental (69). Bridge, tunnel, ferry, and road tolls (71) Motor vehicle insurance premiums less claims paid (72).	Judgmental trend. Judgmental trend. Premiums earned less losses incurred and dividends to policy-holders. Advance and preliminary estimate, judgmental trend. Final estimate, premiums less losses and dividends for quarter from A.M. Best [21]. ¹³
59	Local transit systems (74)	Historical: Physical quantity times average price. Passenger trips from trade source [15] times CPI for intracity mass transit. Current: For advance estimate, judgmental trend. For preliminary estimate, 1 month of passenger trips and 3 months CPI.
60	Other purchased local transportation: Taxicab (75) Railway (76)	Judgmental trend. Judgmental trend.
62	Intercity railway transportation (78)	Revenue. For advance estimate, 2 months of revenue data from AMTRAK [89].
63	Intercity bus transportation (79)	Revenue. For advance estimate, 2 months of intercity passenger revenue from Greyhound Lines [49].
64	Airline transportation (80)	Historical: Revenue for quarter and passenger miles for months, both from TSC. Current: Passenger miles times average fare: For advance estimate, 2 months of revenue passenger miles and fares, both from ATA.
65	Other purchased intercity transportation (81)	Judgmental trend.
67	Physicians (47)	Judgmental trend.
68	Dentists (48)	Judgmental trend.
69	Other professional medical services (49)	Receipts and expenses. Monthly wages and salaries based on employment, hours, and earnings from EE (NSA).
70	Privately controlled hospitals and sanitariums (50): Privately controlled hospitals Nursing homes	Historical: Monthly expenses of community hospitals from AHA. Current: For advance estimate; monthly wages and salaries based on employment, hours, and earnings from EE. For preliminary estimate, expenses of community hospitals for the first month of the quarter. Receipts and expenses. Monthly wages and salaries based on employment, hours, and earnings from EE.

Table 13.—Source Data and Estimating Methods Used in Preparing Quarterly Estimates of Current-Dollar PCE¹—Continued

Line in NIPA table 2.5	Category and selected commodity ²	Source data and estimating methods used in preparing interpolators and extrapolators ³
71	Health insurance: Medical care and hospitalization (52) Income loss (53) Workers' compensation (54)	Judgmental trend. Judgmental trend. Premiums earned less losses incurred and dividends to policy-holders. Advance and preliminary estimate, judgmental trend. Final estimate, premiums less losses and dividends for quarter from A.M. Best [21]. ¹³
74	Cleaning, storage, and repair of clothing and shoes (17).	Judgmental trend.
75	Barbershops, beauty parlors, baths, and health clubs (22).	Judgmental trend.
76	Other personal care services (19)	Judgmental trend.
78	Brokerage charges and investment counseling (56):⁴ Securities commissions Commodity commissions Fees for investment counseling services Services furnished without payment by domestic securities dealers. Income from sale of investment company securities.	Advance estimate: 3 months of shares traded from NYSE and NASD times cents per share commission (NSA) based on shares per order (NSA) from NYSE. Preliminary and final estimates: SEC volume data on other exchanges and additional detail on order-size distribution (NSA) from NYSE. Judgmental trend. Judgmental trend. Judgmental trend. Sales of open-end investment company shares (NSA) from trade source.
79	Bank service charges, trust services, and safe deposit box rental (57).	Judgmental trend.
80	Services furnished without payment by financial intermediaries except life insurance carriers and private noninsured pension plans (58).	Judgmental trend.
81	Other personal business: Expense of handling life insurance (59) ⁴ Legal services (60) Funeral and burial expenses (61) Other (62): Trade union and professional association expenses. Employment agency fees Postal money orders Classified ads Telegraph money orders Accounting and tax return preparation services. . Travel and entertainment card fees Other personal business, n.e.c.	Expenses. Monthly wages and salaries based on employment, hours, and earnings from EE (NSA). Judgmental trend. Historical: Physical quantity times price. Number of deaths from NCHS times the CPI for funeral expenses (NSA). Current: For advance estimate, judgmental trend; for preliminary estimate, 1 or 2 months deaths and 3 months price. Expenses. Monthly wages and salaries (NSA) based on employment, hours, and earnings from EE. Receipts. Monthly wages and salaries based on employment, hours, and earnings from EE. Judgmental trend. Judgmental trend. Judgmental trend. Judgmental trend. Judgmental trend.

**Table 13.—Source Data and Estimating Methods Used in Preparing
Quarterly Estimates of Current-Dollar PCE¹—Continued**

Line in NIPA table 2.5	Category and selected commodity ²	Source data and estimating methods used in preparing interpolators and extrapolators ³
83	Admissions to specified spectator amusements: Motion picture theaters (91) Legitimate theatres and operas, and entertainment of nonprofit institutions (except athletics) (92). Spectator sports (93)	Revenue. Monthly revenue from <i>Variety</i> [233]. Revenue. Monthly revenue from <i>Variety</i> [233] and <i>Amusement Business</i> [22]. Judgmental trend.
84	Other recreation: Radio and TV repair (88) Clubs and fraternal organizations except insurance (94). Commercial participant amusements (95): Sightseeing Private flying Casino gambling Other commercial participant amusements, n.e.c. Parimutuel net receipts (96) Other recreation, n.e.c. (97): Pets and pet services, excluding veterinarians .. Veterinarians Cable TV Public broadcasting High school recreation Lotteries Video cassette rentals Recreation, n.e.c.	Physical quantity times price. Number of televisions based on annual stock estimate and monthly sales from trade source [35, 36] times CPI for appliance and furniture repair. Advance estimate, 2 months of sales and 3 months of prices. Expenses. Monthly wages and salaries based on employment, hours, and earnings from EE. Judgmental trend. Judgmental trend. Receipts. Winnings from State of New Jersey [92]. Advance estimate, 2 months of winnings. Judgmental trend. Judgmental trend. Judgmental trend. Receipts. Monthly wages and salaries based on employment, hours, and earnings from EE. Physical quantity times average price. Number of cable television households (NSA) for mid-month of quarter from trade source [98] times price based on the CPI for cable television (NSA). Advance estimate, judgmental trend for households and 3 months of price. Judgmental trend. Judgmental trend. Judgmental trend. Judgmental trend. Judgmental trend.
85	Private education and research:	
86	Higher education (99)	Expenses. Monthly wages and salaries based on employment, hours, and earnings from EE.
87	Elementary and secondary schools (100): Nursery schools Other	Expenses. Monthly wages and salaries based on employment, hours, and earnings from EE. Expenses. Monthly wages and salaries based on employment, hours, and earnings from EE.
88	Other private education and research (101)	Expenses. Monthly wages and salaries based on employment, hours, and earnings from EE.

Table 13.—Source Data and Estimating Methods Used in Preparing Quarterly Estimates of Current-Dollar PCE¹—Continued

Line in NIPA table 2.5	Category and selected commodity ²	Source data and estimating methods used in preparing interpolators and extrapolators ³
89	Religious and welfare activities (102): Religion ⁴ Political organizations Social welfare Museums and libraries Foundations	Expenses. Monthly wages and salaries based on employment, hours, and earnings from EE. Judgmental trend. Expenses. Monthly wages and salaries based on employment, hours, and earnings from EE. Expenses. Monthly wages and salaries based on employment, hours, and earnings from EE. Judgmental trend.
90	Net foreign travel: Foreign travel by U.S. residents (104) Less: Expenditures in the United States by foreigners (106).	Historical: Quarterly travel expenditures abroad and passenger fares paid to foreign airlines from BPA; passenger fares paid to U.S. carriers from quarterly TSC and BPA data. Current: For advance estimates, projections of BPA data for quarter and 2 months of revenue passenger miles times fares, both from ATA. For final estimate, quarterly BPA data and 3 months of ATA data. Expenditures. Advance and preliminary estimate, quarterly BPA projection. Final estimate, BPA data for quarter.

n.e.c. Not elsewhere classified.

1. Source data and estimating methods for historical estimates are those used for the July 1989 annual NIPA revision. See text for information on the monthly estimates.

2. Additional commodities are shown within a published PCE category when they are prepared using different source data or estimating methods.

3. Except as noted: The same methodology is used for both historical and current estimates; 3 months of source data are available for the advance quarterly estimate; and source data are seasonally adjusted. Generally, where 1 or 2 months of data are available for the advance quarterly estimate, an additional month of data is available for the preliminary quarterly estimate and another month for the final quarterly estimate.

4. For a more detailed description of the methodology used for this item, see the end of this section of the text.

5. Estimates of PCE new trucks are prepared as part of estimates of purchases of new trucks by business.

6. For a description of the retail-control method, see text.

7. Part of line 12 in NIPA table 2.5.

8. Sum of lines 9 through 11, 13, and the remainder of 12 in NIPA table 2.5.

9. Part of line 17 in NIPA table 2.5.

10. Sum of lines 15, 16, 18, and the remainder of 17 in NIPA table 2.5.

11. Quarterly or monthly seasonally adjusted indicator series used to estimate not seasonally adjusted series.

12. Sum of lines 35 through 40 and 42 in NIPA table 2.5.

13. A.M. Best data not available for the current estimate for the 4th quarter of each year. A judgmental trend is used instead.

Note.—Number in parentheses after title is line number in NIPA table 2.4. Number in brackets refers to the item number in the listing of sources.

AGA American Gas Association [6, 7, 8].
 AHA American Hospital Association [10].
 ATA Air Transport Association of America [1, 2].
 BLS Bureau of Labor Statistics, U.S. Department of Labor
 BPA Balance of Payments Accounts (Bureau of Economic Analysis) [158].
 CPI Consumer Price Index (BLS) [201].
 EE *Employment and Earnings* [202].
 EEI Edison Electric Institute [33].
 EIA Energy Information Administration, U.S. Department of Energy [170].

FCC Federal Communications Commission [41].
 MRTS Monthly Retail Trade Survey (Census Bureau) [127, 131].
 NASD National Association of Securities Dealers
 NCHS National Center for Health Statistics, U.S. Department of Health and Human Services [192].
 NOAA National Oceanographic and Atmospheric Administration, U.S. Department of Commerce [160].
 NSA Not seasonally adjusted.
 NYSE New York Stock Exchange.
 SEC Securities and Exchange Commission
 TSC Transportation Systems Center [216, 217].

monthly series is derived from the quarterly series by interpolation using a judgmental trend.

Historical quarterly not seasonally adjusted estimates are prepared by interpolation using quarterly indicator series that are either quarterly source data or the sum of monthly source data. For categories in which a judgmental trend is used for the seasonally adjusted indicator series, the unadjusted quarterly estimates are prepared using the constant-dollar trend reflat by not seasonally adjusted price indexes. (Historical monthly unadjusted estimates are not prepared.)

3.2 Current estimates

Current estimates for most categories are extrapolations of the most recent July revision estimates. In most cases, these extrapolations are prepared using indicator series; judgmental trends are used to estimate the remaining categories, as well as those indicator series for periods for which the source data are not yet available. For each judgmental extrapolation, the estimate is prepared by first extrapolating the constant-dollar series and then reflatting it to current dollars with the price index used as the deflator for the category, usually a component of the CPI.

Although the sources and methods used to prepare the monthly estimates of current-dollar PCE are not shown separately in table 13, information about their preparation can be determined from the quarterly descriptions:

- For PCE categories for which 3 months of source data or indicator series are available for the advance quarterly estimate, the initial monthly estimate is prepared using that information.
- For PCE categories for which 1 or 2 months of source data or indicator series are available for the advance estimate, a judgmental trend is used for the initial monthly estimate and any other missing month.
- For PCE categories for which quarterly source data or indicator series are used, monthly estimates are prepared by interpolating between and extrapolating from the quarterly estimates using a judgmental trend as the indicator series.
- For PCE categories for which a judgmental trend is used to prepare the quarterly estimates, the trend is estimated monthly and is used to prepare both the quarterly and monthly estimates.

Current quarterly and monthly not seasonally adjusted estimates are not prepared.

4 Special Procedures Used for Selected PCE Categories

The source data and estimating methods for the PCE categories discussed in this section were too complex

to be summarized adequately in the tabular presentation of tables 11, 12, and 13. These descriptions cover the benchmark annual, nonbenchmark annual, and quarterly and monthly estimates.

4.1 New autos

Estimates of PCE for new autos are derived by valuing unit sales purchased by persons by average expenditure, which is the average retail list price adjusted for discounts, sales taxes, and transportation costs. Separate estimates are made for expenditures on domestic and on imported autos.¹⁷ The proportion purchased by persons (consumer share) is derived using information on new auto registrations. The source data are from trade sources, except for the data on discounts, sales taxes, and transportation costs. Annual estimates for all years and quarterly estimates are the sum of monthly estimates. Where source data are available only annually, relationships determined from these annual data are held constant for the monthly estimates extrapolated from the most recent year. For quarterly estimates, 3 months of unit sales and list prices of both domestic and foreign autos, 3 months of price adjustments, and 1 month of registrations data are available for the advance estimate. Projections of missing source data are based on judgmental trends.

4.1.1 Data sources

Data on monthly unit sales of domestic autos, by model, are from the Motor Vehicle Manufacturers Association of America (MVMA) [68]; monthly unit sales of imported autos are from *Ward's Automotive Reports* (*Ward's*) [234]. Data on the proportion of each model manufactured or imported with specified options are available for model year to date at approximately 4-month intervals from *Ward's*. Data on the proportion of new autos by type of owner—that is, persons, business, or government—are from monthly R.L. Polk & Company data on registrations of new autos [100]. The MVMA and *Ward's* data have been used since 1951 and 1956, respectively. Estimates for 1946–50 are based on R. L. Polk data on new registrations; those for 1942–1945 on rationing data from the Office of Price Administration (OPA) [162]; and those for 1929–41 on data on dealers' sales from the Automobile Manufacturers' Association [19], the predecessor of the MVMA.

Manufacturers' wholesale and retail list prices for each style and option of each model are from the Automobile Invoice Service (AIS) [18]. Average dealer discounts, or premiums, and transportation costs are from the Bureau of Labor Statistics (BLS) [197], which collects this information monthly as part of its regular pricing program for the Consumer Price Index (CPI). Sales taxes are estimated using a tax rate for

17. Domestic autos consist of units assembled in the United States, Canada, and Mexico; imported autos are those assembled elsewhere.

franchised car dealers from the Census Bureau 1977 *Annual Retail Trade Survey* [128] and taxes from the Census Bureau's quarterly survey of State and local tax revenue [141]. Estimates from 1946–66 are based on price data from the BLS composite price for selected models [199], adjusted beginning in 1954 for allowances and discounts. Prices from 1942–45 are estimated in accordance with OPA regulations, increasing 1 percent per month from the December 1941 price and an additional 1 percent per month from May 1944 to December 1944. The December 1944 price is held constant through the first quarter of 1945. Price data from 1929–41 are from the Automobile Manufacturer's Association.

4.1.2 Unit sales

Unit sales of domestic autos to persons are derived as the product of total unit sales and the proportion of new auto registrations recorded in the names of individuals from the Polk data. The Polk data are adjusted by BEA for "mixed-use" autos—that is, autos used both for business and personal use. This adjustment is based on Census data [134] on business mileage driven by household members, updated annually to reflect changes in the number of self-employed persons per household from the Census Bureau current population survey (CPS) [136]. This procedure applies to estimates from 1946 forward. The PCE share in earlier years is based on survey data from the OPA (1942–45) [227] and the Bureau of Public Roads [159], predecessor to the Federal Highway Administration. This share, after a small deduction for Federal, State, and local government purchases, is 70 percent from 1929–41 and 50 percent from 1942–45. The allocation for these years applies to new autos and to gross margins on used autos.

Sales to persons of imported autos are assumed to be 96 percent of total sales of imported autos less fleet purchases, which are estimated from annual data from *Automotive Fleet Fact Book* [28].

4.1.3 Average expenditure

Average list prices are estimated by combining retail list prices with unit sales of each model. These average list prices are adjusted to an average expenditure basis using BLS data, classified by size class and manufacturer, on discounts and transportation costs; sales taxes are added based on the tax rate from the benchmark estimates.

Further adjustments are made for fleet purchases by businesses and governments, which are assumed to be made at wholesale prices. These fleet purchase adjustments are based on unit sales from monthly Polk data and from annual data on fleet purchases by businesses and government from the *Automotive Fleet Fact Book*. (Expenditures by business and government are

used to estimate the new auto component of producers' durable equipment and government purchases.)

4.2 Net transactions in used autos

In PCE, purchases of used goods consist of the dealers' margin on goods purchased by persons and net transactions (purchases less sales) between persons and other sectors valued in wholesale prices. For used autos the estimate of net transactions represents several types of transactions. Most purchases are from new or used auto dealers, but some are directly from other types of businesses and from government and foreigners. Most sales are also to new and used auto dealers, either as trade-ins or as direct sales. Individuals also sell autos that are at the end of their useful lives to scrap dealers, and in some instances they sell directly to other businesses and to government and foreigners. (Transactions between persons are intrasectoral and cancel in aggregation.) The estimate of net transactions in used autos is not developed by explicitly taking into account each type of transaction listed above but by estimating the change in unit stocks of used autos held by persons and then valuing that change at wholesale prices.

The procedure is described in three parts; in each part, autos are grouped by age—determined by year of original sale—and the calculations are carried out by age group. First, the total unit stock of autos in use is estimated and the year-to-year change in the stock separated into its various components—purchases of new autos, the change in dealers' inventories of used autos, exports and imports of used autos, and scrapped units.

Second, unit stocks held by persons are calculated as a residual by estimating unit stocks held by government and by business and then deducting these estimates from total unit stocks. In establishing unit stocks held by persons, the business portion of "mixed-use" autos held by persons is assigned to business. Then the change in unit stocks held by persons is divided into purchases of new autos, scrapped units, and net unit transactions, except scrapped units.

Third, the change in unit stocks held by persons is valued at wholesale prices, with a lower value assigned to scrapped units than to other autos.

4.2.1 Total unit stock and components of change

The total unit stock of autos in use is based on sales of new autos for the current and previous years, assumed retention rates for autos less than four years old, and R.L. Polk Company registration data on the number of autos in use by model year [234]. The assumed retention rates are shown in table 14. The R.L. Polk Company data are for autos in use on July 1 of each year. This information is converted to an end of calendar year basis.

Table 14.—Retention Rates and Percent of Original Value by Age of Auto

Age	Assumed retention rates [Percent]			Percent of original value in constant dollars
	Total	Government	Business	
< 1 year	100.0	100.0	100.0	100.0
1–2 years	99.8	99.0	70.0	68.4
2–3 years	99.6	96.0	65.0	51.4
3–4 years	99.0	90.0	60.0	36.8
4–5 years	n.a.	80.0	55.0	26.4
5–6 years	n.a.	70.0	50.0	17.6
6–7 years	n.a.	60.0	45.0	11.4
7–8 years	n.a.	50.0	45.0	7.6
8–9 years	n.a.	50.0	45.0	3.6
9–10 years	n.a.	0	0	1.7
10–11 years	n.a.	0	0	0.8
>11 years	n.a.	0	0	0.4

n.a. Not applicable.

The procedure for estimating purchases of new domestic and imported autos is described above. Used auto inventories held by franchised domestic auto dealers are from the Motor Vehicle Manufacturers Association (MVMA) [68]. The number of used autos held by franchised foreign auto dealers is estimated judgmentally, and those held by independent used auto dealers are estimated from the value of yearend inventories from the annual retail trade survey [128], and an average value based on a five-term moving average of monthly auction prices for autos less than 8 years old from *Automotive News* [32]. Annual data on exports and imports of used autos are from the Census Bureau's *U.S. Exports* [144] and *U.S. General Imports and Imports for Consumption* [145].

Given estimates of the other components of the change in the stock of autos in use, scrappage is estimated as a residual. In estimating the components of change by age of auto, it is assumed that the change in dealers' inventories and exports and imports are confined to newer models and scrappage to older models.

4.2.2 Residual estimates of change in unit stock held by persons

The unit stock of autos held by government and the unit stock of autos held by business (excluding the

business portion of "mixed-use" autos) are based on new auto purchases for the current and previous years and assumed retention rates. The estimates of purchases of new autos by government and business are derived by allocating total sales of new autos among government, business and household purchases with new auto registration data from R.L. Polk Company. The assumed retention rates are shown in table 14. The calculation of the unit stock held by business is reviewed against information on the average length of time autos are retained in business fleets according to the National Association of Fleet Administrators and on the total number of autos in fleets of four or more [28]. As necessary, the results of the calculation are adjusted so that the change in the unit stock is in line with the change in the total number of autos in fleets of four or more.

The unit stock of autos held by persons is derived by subtracting the unit stocks held by government and business (excluding "mixed-use") from the total unit stock. The business portion of "mixed-use" autos is then separated from the unit stock held by persons and included in the business stock. The separation is based on information from the Census Bureau on the share of total mileage by age of auto that households report as business usage [126]. The effect of splitting the stock held by persons between business and personal use on the basis of mileage shares is to measure

the business use of personal autos on a "full-car equivalent" basis and thereby to measure the unit stocks held by business and persons on a "full-car equivalent" basis.

The change in the unit stock of autos held by persons (excluding "mixed-use") is separated into purchases of new autos, scrapped units, and net unit transactions, except scrapped units. Purchases of new autos by persons is known and scrapped units are calculated by age of auto as a proportion of the total scrappage previously established. The proportion is assumed to be equal to the ratio of the unit stock held by persons to the total unit stock. Net unit transactions, except scrap, are calculated as the residual.

4.2.3 Valuation in wholesale prices

Net transactions, except scrap, grouped by age, are valued in wholesale prices. Scrapped units by age are valued at 8 percent of the wholesale price.

The estimate of the average wholesale value for each age group of used autos is calculated by (1) stating the original average retail value for each group in constant dollars, (2) adjusting that value for depreciation, and (3) restating the depreciated value in current prices. The original average retail value is the average expenditure calculated in estimating purchases of new autos. These values are adjusted for price change with the consumer price index (CPI) for new autos [201]. The depreciated values are calculated according to the schedule shown in table 14. This schedule was developed from information on the wholesale value of used autos published by the National Automobile Dealers Association [77] for the years 1963 to 1972. Beginning with August 1987, the restatement to current prices is carried out by multiplying the depreciated values by the CPI for used autos [201]. Before then, the CPI for used autos, unlike that for new autos, did not include an adjustment for quality change. The restatement was carried out using a price index obtained by adjusting the CPI for used cars for quality based on the quality adjustment made for new autos in the CPI for new autos.¹⁸

4.2.4 Quarterly and monthly estimates

Quarterly and monthly estimates of net transactions are calculated using a procedure that parallels aspects of the annual procedure but in which calculations in terms of values replace those in units. Five elements of the annual unit calculations, expressed in values, are interpolated and extrapolated. They are (1) change in dealers' inventories of used autos, (2) net exports of used autos, (3) scrappage, (4) net transactions in used autos by business, and (5) net transactions in used autos by government. The sum of the first three

provides an estimate of the change in the total stock of used autos in use valued in wholesale prices. The other two provide the basis for a residual calculation of net transactions in used autos by persons given the estimate of the change in the total stock of used autos.

The value of the change in dealers' inventories of used autos is estimated from dealers' unit stocks valued at average wholesale prices. Unit stocks of franchised domestic auto dealers are reported monthly by the Motor Vehicle Manufacturers' Association [68], and stocks of franchised foreign auto dealers and used auto dealers are estimated judgmentally. Unit stocks are valued with the average wholesale price of used autos published by *Automotive News* [32]. The values of net exports and of scrappage are held constant from the previous annual estimates. The values of net transactions by business and by government are interpolated and extrapolated by the products of their unit purchases of new autos and the average wholesale price of used autos. Their unit purchases are those estimated in the procedure for new autos; the average wholesale price is that from *Automotive News*.

4.3 Net transactions in used trucks

In PCE, purchases of used goods consist of the dealers' margin on goods purchased by persons and net transactions (purchases less sales) between persons and other sectors valued in wholesale prices. For used trucks, the benchmark estimate of net transactions by persons is obtained as the difference between purchases of used trucks by persons from dealers and sales of used trucks by persons to dealers. It is assumed that persons have no transactions in used trucks with businesses (other than dealers), governments, or foreigners and that trucks owned by persons are not sold to scrap dealers at the end of their useful lives.

Purchases of used trucks by persons from dealers is estimated as (1) dealer sales less (2) exports less (3) dealers' margins, (4) split into purchases by persons and by business. Dealer sales are from the 1977 *Census of Retail Trade* merchandise line data [119], adjusted to include sales taxes using data from the 1977 ARTS [128]; exports are from Census Bureau merchandise trade data [144]; dealers' margin is from the 1977 ARTS [128]; and the split between purchases by persons and by business is based on information on truck usage in the 1977 *Truck Inventory and Use Survey* (TIUS) conducted by the Census Bureau [123].

Sales of used trucks by persons to dealers is estimated as (1) dealer sales less (2) dealers' margin plus (3) the change in dealers' inventories of used trucks, (4) split into sales by persons and by business. The change in dealer inventories is based on inventory data from the 1977 ARTS as described in the section on current dollar benchmark estimates; the split between sales by persons and by business is based on data from TIUS [123].

18. The adjustment for quality change in the used auto price index was introduced in July 1987 and covers the period beginning January 1984. It will be carried back to earlier periods in the next comprehensive revision of GNP.

For nonbenchmark years, annual estimates of net transactions by persons are interpolated between benchmarks and extrapolated from the last benchmark, using the number of new truck registrations to business five years earlier from the R.L. Polk Company [100], and the CPI for used autos [201] as indicator series. Quarterly and monthly estimates are interpolations and extrapolations using as an indicator series the monthly estimates of new trucks purchased by persons.

4.4 Gasoline

Estimates of PCE for gasoline are prepared as the product of the quantity purchased and an average retail price.

4.4.1 Quantities purchased

Except for the first annual revision, separate estimates of quantities purchased by persons are prepared for gasoline used in each of the following types of vehicles: Autos, trucks, airplanes, motorcycles, and boats. Before 1946, estimates are only for auto gasoline.

Quantities are expressed in gallons, except as otherwise noted. For autos, consumer purchases are obtained as a residual after accounting for other uses. For trucks and airplanes, purchases by persons are estimated directly. For motorcycles and boats, purchases by persons are estimated judgmentally as a portion of total purchases for these vehicles.

For the first annual revision, a single estimate is prepared of the total quantity purchased for use in all types of vehicles.

Autos.—Purchases by persons are equal to total gasoline purchased for use in autos less purchases by government and business. Business purchases are the sum of purchases for autos held and used exclusively by business and the business portion of purchases by persons for “mixed-use” autos.

Total gasoline purchased for use in autos is from *Highway Statistics* [213, 214] or, before 1940, the *Minerals Yearbook* [196].¹⁹

Purchases for exclusively business autos and for government autos are each estimated as the product of an auto stock estimate and estimated fuel usage per auto. The stock estimates are prepared by BEA, as described in the section on net transactions in used autos. In both cases, fuel usage per auto is calculated as miles driven per vehicle divided by average miles per gallon (MPG).

For exclusively business autos, the 1977 benchmark estimate of miles driven per auto is based on 1977

data from a survey of fleet operators conducted by the Brookhaven National Laboratory [103]. Miles driven per auto is assumed constant at the 1977 level for all years beginning in 1972, except for 1974, when it is assumed to have declined 5 percent in response to the gasoline shortage. For 1946 to 1971, miles driven per auto are from the National Association of Fleet Administrators (NAFA) [70].

MPG for 1977, 1982, and 1983 are from the NAFA. For other years from 1972 to 1981, MPG is interpolated and extrapolated by an estimate of MPG calculated using MPG of new autos sold by model year, from an Environmental Protection Agency study [219], and weights derived from the age distribution of the BEA stock of exclusively business autos. After 1983, MPG is extrapolated by MPG for all autos from FHWA. From 1946 to 1971, MPG is assumed to equal FHWA’s MPG for all autos.

For government autos, the 1977 benchmark estimate of miles driven per auto is calculated as a weighted average of three groups—civilian Federal Government autos, State and local governments, and other State and local government autos. For civilian Federal Government autos, miles driven per auto is based on data from the General Services Administration (GSA) [225]; for State and local government police civilian autos, estimates are based on the Brookhaven survey. Miles driven per auto for government autos is assumed constant at the 1977 level for all years beginning in 1972, except for 1974, when it is assumed to have been reduced 5 percent in response to the gasoline shortage. From 1946 to 1971, miles driven per government auto is assumed to be 77 percent of miles driven per auto for exclusively business autos. Average MPG for government autos for all years from 1972 to 1983 is assumed to be the same as that for civilian Federal Government autos from the GSA report. After 1983, it is extrapolated by MPG for all autos from FHWA. From 1946 to 1971, MPG is assumed equal to the FHWA measure for all autos.

The business portion of purchases by persons is estimated as a proportion of total auto gasoline purchased by persons. The proportion is based on Census data [134] on the share of total mileage by age of auto reported by persons as business usage. Total auto gasoline purchased by individuals is calculated as total auto gasoline less that for exclusively business autos and government autos.

For the period 1929 to 1941, total auto gasoline purchases are allocated 70 percent to PCE, the same percentage used in the allocation of new autos and gross margin on used autos. For the period of gasoline rationing during World War II, the percentages used are 65 percent for 1942, 55 for 1943 and 1944, and 60 percent for 1945.

Trucks.—Beginning with 1972, estimates of purchases of truck fuel by persons are derived using BEA stocks of consumer trucks (including vans) and fuel usage per truck, which is assumed to be 20 percent more than

19. For the 1968 to 1982 estimates, BEA adjusted the FHWA data to reduce quantity purchased for autos and increase quantities purchased for trucks, based on an Energy Information Administration (EIA) survey [181]. Detailed information about the derivation of this adjustment, which now is reflected in the FHWA data, as well as in the procedures described here, is contained in BEA Working Paper 5 [149].

average usage of consumer autos, based on a 1983 EIA survey [181].

From 1946 to 1971, estimates are based on unit stocks and average mileage of trucks for personal use, and MPG assumed to be equal to the FHWA measure for passenger autos. Benchmark estimates of stocks and average mileage are from the *Truck Inventory and Use Survey* [123]; for non-benchmark years, unit stocks and average mileage are judgmentally interpolated and extrapolated.

Airplanes.—Benchmark estimates of purchases of aviation fuel by persons are based on EIA data [171] on barrels used in general aviation and a PCE share based on Federal Aviation Administration data [211] on the proportion of hours flown accounted for by persons. For nonbenchmark years beginning in 1946, quantities are from FHWA data on gallons of gasoline consumed for aviation, with the share purchased by persons interpolated between benchmark years and held constant from the latest benchmark year.

Motorcycles.—Total gasoline for motorcycles is from the FHWA; 95 percent is assumed to be purchased by persons.

Boats.—Total gasoline purchased for boats is from the FHWA; 50 percent is assumed to be purchased by persons.

4.4.2 Average retail price

The 1977 benchmark estimate of the average retail price per gallon of nonaviation gasoline is from an EIA report [178]. The same price is used for all types of vehicles except airplanes. For aviation fuel, the average retail price is from EIA data [176], adjusted to include taxes.

After 1977, a single average retail price is used for all vehicles. For 1978 to 1981, this price is the average price of nonaviation gasoline, from the same source used for the benchmark estimate. Beginning in 1982, a weighted average of price per gallon of leaded gasoline and of unleaded regular and premium are used. Prices by type and grade are published by EIA [175]. Weights are based on data from the same source on quantities of leaded and unleaded gasoline supplied and data on the quantities of regular and premium grades of unleaded gasoline from information on supplier sales published in the *Petroleum Marketing Annual* [179]. For the first annual revision, supplier sales are not available, and the distribution of unleaded gasoline by grade is judgmentally trended.

For 1976, the average price is from the "Survey of Gallonage Sales of Gasoline" conducted by the Census Bureau [143]. For the 1972 benchmark estimate, the average price is the unit value of gasoline sales at gasoline service stations from the *1972 Census of Retail Trade* [119]. For the 1967 benchmark estimate, for other annual estimates from 1958 to 1966, and for

interpolation between the 1967, 1972, and 1976 estimates, a weighted average of prices per gallon of leaded regular and premium and of unleaded gasoline from BLS [198] is used. Weights are based on quantities from the Ethyl Corporation [37]. Before 1958, the overall average price, adjusted to include taxes, is from the American Petroleum Institute [13].

4.4.3 Quarterly and monthly estimates

Quarterly and monthly estimates of purchases by persons are based, when available, on the same product supplied data from EIA used for the first annual revision estimate and on the same average price data and quantity weights from EIA used for annual estimates beginning in 1982. For the advance quarterly estimate, the total product supplied is based on monthly EIA data [180] for the first month of the quarter and weekly EIA data [183] for the other two months. Average retail prices and the distribution of gasoline supplied between leaded and unleaded are from EIA for the first two months of the quarter [175]. For the third month of the quarter, prices by type and grade are extrapolated with consumer price index components [201], and the distribution of gasoline by type is based on weekly EIA data.

4.5 Rental value of owner- and tenant-occupied nonfarm dwellings

As explained in the introductory section, PCE includes both monetary rents paid by tenants and an imputed rental value for owner-occupied dwellings. PCE for rent on tenant-occupied nonfarm dwellings is measured as net contract rent plus tenants' unreimbursed expenditures for major replacements, maintenance, and repairs. Net contract rent is defined as the rent that tenants contract for or agree to pay—including any charges for major appliances and furnishings, utilities, or services—less the charges for utilities. PCE for owner-occupied nonfarm dwellings is defined as "space rent," which is an imputed value of the rental of the dwelling alone, exclusive of any charges for major appliances and furnishings, utilities, or services.

Separate estimates are prepared for owner-occupied permanent site dwellings, for owner-occupied mobile homes, for tenant-occupied permanent site dwellings, and for tenant-occupied mobile homes. For each type of dwelling, the estimate of PCE is essentially the product of the number of occupied units and an appropriate rent per unit. Benchmark estimates are based primarily on data from the decennial census of housing (COH) [115] and the survey of residential finance (SRF) [116], which is conducted in conjunction with the COH. Estimates for other years are interpolations between and extrapolations from the benchmark estimates; they are based primarily on data from the biennial American housing survey (AHS) [112], the current population survey (CPS) [133], and the CPI. (The AHS is available

annually from 1973 through 1981 and biennially since that time; the CPS is available annually and, in recent years, quarterly.) Quarterly and monthly estimates are based primarily on data from the CPS and CPI and from BEA estimates of the stock of mobile homes.

4.5.1 Number of permanent-site units

The benchmark for the number of tenant- and owner-occupied permanent site dwellings is from the COH, adjusted by BEA to reflect the stock as of July 1 and to include certain vacant units. For tenant-occupied dwellings, two types of vacant units are treated as if they were occupied for one-half of the year: Units that have been rented and are awaiting occupancy, and seasonal and migratory units. For owner-occupied dwellings, two types of vacant units are treated as if they were occupied for the entire year: Units that have been sold and are awaiting occupancy, and units held off the market for occasional use. The COH provides separate estimates for the seasonal and occasional use units and a combined total for units sold or rented awaiting occupancy; BEA allocates this total between owner- and tenant-occupied units using the proportions from the occupied housing stock. Before 1960, COH data are supplemented by intercensal benchmarks based on the *1956 National Housing Inventory* [140]; Census Bureau surveys done in conjunction with the Monthly Report on the Labor Force [136] for 1944, 1945, and 1947; and data from the *Census Bureau Real Property Inventory of 1934* [136].

Similar information from the AHS for selected years and from the CPS is used to interpolate between and extrapolate from the census data. Before 1948, the number of units is interpolated between and extrapolated from benchmarks using Current Population Survey data on the number of households [136] (1948–72) and by data on new housing units adjusted to allow for demolitions and conversions (1929–47). New housing units are based on data on starts [139], and demolitions and conversions are from a reconciliation of cumulative starts and the net change in the stock between successive benchmark estimates.

4.5.2 Rent on tenant-occupied permanent site dwellings

For tenant-occupied permanent site dwellings, PCE is the sum of (1) net contract rent per unit multiplied by the number of units and (2) tenants' unreimbursed expenditures for major replacements, maintenance, and repairs.

Net contract rent equals contract rent less payments for utilities—electricity, gas, water, and heating fuel. The benchmark estimate for net contract rent per unit is derived from unpublished data on mean contract rent per unit from the COH; similar information from the AHS is used to interpolate between census years and to extrapolate from the latest census benchmark. Estimates for years when the AHS is not available

are based on changes in the CPI for residential rent, adjusted judgmentally for changes in the quality of the housing stock. Payments for utilities are estimated as the product of average expenditures per room and the number of rooms. Average expenditures per room are extrapolated from the 1976 estimate by changes in the CPI for fuel and other utilities; until 1976, average expenditures were obtained from *Apartment Building Income and Expense Analysis* [53], published by the Institute of Real Estate Management. The average number of rooms per tenant unit and the number of tenant units in two or more unit buildings are from the COH.

Tenants' unreimbursed expenditures for major replacements, maintenance, and repairs—available from the survey of residential alterations and repairs (SORAR) [125] from the inception of the survey through 1963—have been extrapolated from the 1963 SORAR estimate by data on maintenance and repair expenditures from SORAR, from 1964–82, and on data from the BLS consumer expenditures survey [200] from 1983 forward. (Expenditures from 1973 forward are for tenant-occupied properties; those for 1964–72 are for owner-occupied unit properties.)

4.5.3 Space rent on owner-occupied permanent site dwellings

For owner-occupied permanent site dwellings, PCE is space rent per unit times the number of units. Benchmark estimates of space rent per unit are derived using (1) the estimated tenant-occupied net contract rent per unit and (2) SRF information on the market values of owner- and tenant-occupied units and on the rent-to-market-value ratios of the latter by value class. An estimate of owner-occupied net contract rent is calculated by assuming that it is the equivalent of net contract rent of tenant-occupied units in the same value class.

Estimates of owner-occupied net contract rent for years between censuses are interpolated and, until 1984, extrapolated from the latest census using the change in rents for tenant-occupied units. Beginning in 1984, the estimates are extrapolated using the CPI for homeowners' equivalent rent adjusted judgmentally for changes in the quality of the housing stock. Owner-occupied net contract rent, the product of the rent per unit and the number of units, is converted to space rent by subtracting an amount attributable to the use of major appliances and furnishings. The amount is set equal to the capital consumption allowance with capital consumption adjustment on these appliances and furnishings estimated by BEA as part of its estimates of capital stock [150].

4.5.4 Rent on owner- and tenant-occupied mobile homes

For mobile homes, the benchmark for the number of tenant- and owner-occupied units is the COH. Inter-

polation between these benchmarks and extrapolation from the latest census is based on a perpetual inventory calculation, using data on new units from the National Conference of States on Building Codes and Standards [81].

The average rent per unit for tenant-occupied units is also derived from COH. The rent on owner-occupied mobile homes is assumed to be slightly higher, based on the average number of rooms in each type of unit. (In 1970 the differential was eleven percent; currently, it is about 7.5 percent.) Interpolations between benchmarks and extrapolation from the latest census year are based on the CPI for residential rent. Beginning with 1984, contract rent for owner-occupied units is extrapolated with the CPI for homeowners' equivalent rent. Contract rent for mobile homes is calculated as the number of units times average rent. PCE for owner-occupied and for tenant-occupied mobile homes are contract rents less payments for utilities. Benchmark data on utility payments are based on a 1966 survey by the Department of Housing and Urban Development [194]. These payments are extrapolated backward and forward, using as indicator the product of the number of units and the CPI for gas and electric utilities.

4.5.5 Quarterly and monthly estimates

Quarterly and monthly current-dollar estimates are prepared by reflating constant-dollar PCE for each type of dwelling using the CPI for residential rent (tenant-occupied) or owner's equivalent rent (owner-occupied).

Monthly constant-dollar estimates are based on the number of units for each type of dwelling adjusted for changes in the quality of new units. Estimates of the stock of owner-occupied and of tenant-occupied dwellings are derived by interpolating between and extrapolating from annual estimates from the AHS or CPS, whichever is available. (In recent years these CPS data also have been available quarterly, usually in time for the final quarterly estimate.) The total stock of mobile homes is estimated by interpolating between and extrapolating from annual estimates, using as an indicator monthly data on shipments of mobile homes [81]. The distribution of the mobile home stock between owner- and tenant-occupied units is based on recent trends. Stocks of permanent site dwellings are estimated as the difference between the total stocks of owner- and tenant-occupied dwellings and the estimates of mobile homes. The units estimates are adjusted for changes in the quality of new units based on historical relationships between average rental values and the respective CPI's.

For the advance quarterly estimate the estimates of units are extrapolated judgmentally, and the CPI's are available for all 3 months. For the preliminary estimate, 1 month of data on manufacturers' shipments of mobile homes becomes available. For the final es-

timate, the quarterly CPS data on units and another month of shipments of mobile homes become available.

4.6 Brokerage charges and investment counseling

This PCE category consists of (1) commissions paid by persons on securities transactions, (2) commissions paid by persons on commodities transactions, (3) investment counseling fees paid by persons, (4) services furnished without payment by domestic securities dealers, and (5) sales charges paid by persons on purchases of investment company securities.

4.6.1 Annual estimates

Benchmark and nonbenchmark annual estimates for all five categories are based primarily on consolidated income statements for securities broker-dealers. For all estimates except the first July revision, these income statements are from the Financial and Operational Combined Uniform Single (FOCUS) Report, which all security broker-dealers are required to file with the Securities and Exchange Commission (SEC). SEC tabulations of broker-dealer income statements are published in its *Annual Report* [229]. For the first July revision, the identical revenue items obtained from consolidated income statements of New York Stock Exchange (NYSE) member firms [93], which constitute a major portion of all broker-dealers, are used to extrapolate the detailed SEC data. Except as noted, all data used in the estimates are from these sources.

Broker-dealer revenues for each of the five categories, from the FOCUS or NYSE reports, are adjusted to exclude interest and revenues derived only from business and government (such as underwriting). The remainder is allocated between the public—that is, persons and institutions—and other broker-dealers using independent information from a variety of sources.

Securities commissions.—For the benchmark estimate of securities commissions, revenues from the FOCUS reports are first adjusted to exclude floor brokerage—that is, commissions paid by broker-dealers to other broker-dealers—based on data on commissions paid from the FOCUS reports. The remainder, commissions charged the public, is allocated between persons and institutions using data on the distribution of the value of stock transactions accounted for by each and data on their relative commission rates.

- The distribution of the value of stock transactions is based on annual data on the total value of stock transactions from the SEC [230] and the NYSE [94] for registered exchanges, and from the National Association of Securities Dealers (NASD) [72] for over-the-counter markets. The value of public trading is estimated by excluding member trading for their own account, based on the 1976

and 1980 versions of the NYSE *Public Transactions Study* (PTS) [95]. The percentage of the value of public trading accounted for by persons also is based on PTS data.

- The ratio of individual to institutional commission rates is based on the SEC Survey of Commission Rates [231], with commission rate levels adjusted so that commissions paid by individuals and by institutions sum to the SEC's total commissions.

For nonbenchmark years, the percentage of the value of stock transactions accounted for by members is interpolated and extrapolated by members' percentage of total shares traded on the NYSE [93]. For public transactions on the NYSE, the percentage of the value of trading accounted for by persons is extrapolated by an estimate of the percentage of publicly traded shares accounted for by individuals. This estimate is based on NYSE data on the distribution of trading by order-size class [93] and on unpublished data for 1975 to 1981, from the SEC's commission rate survey, on the distribution of publicly traded shares, by order-size class between individuals and institutions. For public transactions on markets other than the NYSE, the share of the value of public transactions accounted for by persons is held constant at the level determined from PTS. The ratio of individual to institutional commission rates is based on the last SEC commission rate survey.

Commodities commissions.—Benchmark estimates of commissions paid by individuals on commodities transactions are based on commodities revenues of security and commodity broker-dealers. Commodities revenues of security broker-dealers are from the FOCUS reports. Commodities revenues of commodity broker-dealers are derived as the product of BLS wages and salaries for the industry [203] and the ratio of revenues to wages and salaries of security broker-dealers [229]. For nonbenchmark years, commodities revenues are extrapolated by security broker-dealer revenues.

Allocation to persons is based on a judgmental estimate for 1977 of their share of trading; the share is held constant for nonbenchmark years.

Investment counseling fees.—Investment counseling services are provided by security broker-dealers, commercial banks, and independent investment counselors. Allocation to persons is based on the market value of holdings of equity securities not accounted for by institutional investors, from the 1979 SEC *Annual Report* [229].

Benchmark estimates of total fees charged at security broker-dealers are based on FOCUS report data. Benchmark estimates of fees charged at commercial banks are based on Federal Deposit Insurance Corporation data [44] on income from fiduciary activities, allocated to personal agency accounts on the basis of data from FRBNY *Functional Cost Analysis* [47]. Benchmark estimates of fees of independent invest-

ment counselors are based on the wages and salaries of services allied with the exchange of securities or commodities and the ratio of revenues to wages and salaries of security broker-dealers, adjusted to exclude services other than investment counseling [229].

For nonbenchmark years, investment counseling fees at broker-dealers and commercial banks are extrapolated by FDIC data on the fiduciary income of commercial banks [44]. Fees at independent counselors are extrapolated with wages and salaries from BLS [203].

Services furnished without payment by domestic securities dealers.—As explained in the introduction, the PCE category brokerage charges and investment counseling includes an implicit charge equal in amount to the price spread on the transactions carried out by securities dealers with persons. Dealers who make markets in securities do not charge commissions; instead, they retain as compensation the income resulting from acquiring securities at a price lower than the price at which the securities subsequently are sold to their customers.

Services furnished without payment by domestic securities dealers on transactions involving persons are estimated in three parts: Income from over-the-counter market making, income from trading debt securities, and income from trading other securities. All data on services furnished without payment by domestic securities dealers come from the FOCUS report.

The income of over-the-counter market makers, who maintain inventories of stocks and provide market liquidity, is allocated to persons on the basis of data from the *Mutual Fund Fact Book*.

Income from trading debt securities reported in the FOCUS report first is adjusted to exclude interest earnings on the basis of interest income reported in the SEC *The Securities Industry in 1980* [232] and information from 10-K reports and from annual reports to shareholders of large publicly traded broker-dealers; the proportion of income accounted for by interest has been held constant since 1980. The adjusted income from trading debt securities is allocated among Federal, State and local, and corporate securities on the basis of broker-dealer holdings of these securities from the FOCUS report.

- Income from trading Federal securities is adjusted to include that received by commercial banks, based on New York Federal Reserve Bank (FRBNY) data [48], and allocated to persons on the basis of marketable Federal securities held by individuals, based on Treasury Department data [209].
- Income from trading State and local debt securities is allocated to persons in the same proportion as Federal securities.
- Income from trading corporate debt securities is allocated to persons on the basis of the percentage

of corporate and foreign bonds held by households from the Federal Reserve Board's flow of funds data [25].

Income from trading other securities reported in the FOCUS report is allocated to persons on the basis of data on individuals' share of the value of stock transactions used in allocating securities commissions.

In nonbenchmark years, services furnished without payment by domestic securities dealers for State and local, corporate debt, and other securities on behalf of persons are extrapolated from benchmark levels by data on income from trading these securities.

Sales charges on purchases of investment company securities.—Benchmark estimates of sales charges on purchases of investment company securities are allocated to persons on the basis of the share of market value accounted for by noninstitutional and fiduciary mutual fund holdings, using data from the *Mutual Fund Fact Book* [63]. For nonbenchmark years, the share is held constant.

4.6.2 Quarterly and monthly estimates

Quarterly and monthly estimates of brokerage charges and investment counseling are prepared in three steps: (1) Commissions on securities transactions, (2) income from the sale of investment company securities, and (3) all other commissions and fees, including services furnished without payment by domestic securities dealers.

Commissions paid by persons on securities transactions are estimated as the product of total shares traded and a cents-per-share commission rate.

- Shares traded by persons are based on data on the volume of securities transactions from the NYSE [94], the National Association of Securities Dealers (NASD) [73], and the Securities and Exchange Commission (SEC) [230]. Estimates of shares traded by persons are prepared separately for the NYSE and other markets, which include other registered exchanges and the over-the-counter market. For the NYSE, publicly traded shares are estimated as total shares traded less shares accounted for by members; the share of persons is derived from (1) information on shares traded by order-size class and from (2) data from the last SEC commission rate survey [231] on the shares of persons and institutions in each size class. For other markets, shares traded by persons are assumed to be a constant proportion of total shares traded, based on PTS.
- Estimates of the commission rate, expressed as cents per share, are derived from the latest July revision estimate as an implicit rate, which is calculated from the estimates of shares traded by persons and commission revenue accounted for by persons on securities transactions. During the

year, the estimated commission rate may be adjusted when there are large changes in the number of shares per order accounted for by individuals to reflect the fact that larger orders generally cost less per share than smaller ones. For the NYSE, the number of orders placed by persons is estimated in the same way as the number of shares traded by persons. Shares per order for persons on other markets are estimated as a constant proportion of NYSE shares per order, based on the last PTS.

Income from the sale of investment company securities is extrapolated by the sales of the shares of open-end investment companies reported by the Investment Company Institute and published by the Federal Reserve Board [24].

All other commissions and fees, including services furnished without payment by domestic securities dealers, are extrapolated judgmentally.

For the advance quarterly estimate, 3 months of source data are available except for SEC data on transactions on exchanges other than the NYSE, for which 1 month of data is available. For the preliminary and final estimates, additional detail on shares traded by order size class from the NYSE becomes available. For the initial monthly estimate, NYSE and NASD data are available.

4.7 Services furnished without payment by financial intermediaries except life insurance carriers and private noninsured pension plans

As explained in the introduction, purchases of services include an imputation for the value of services furnished to persons without payment by depository institutions—that is, financial intermediaries except life insurance carriers and private noninsured pension plans. Estimates of this service charge are prepared as part of the estimates of imputed interest and associated service charges. The service charge is equal to imputed interest received by persons from commercial banks and savings and loan associations and all the imputed interest paid by mutual savings banks, credit unions, and investment companies.

For commercial banks, total imputed interest paid equals the sum of monetary interest received on deposits plus other property income and imputed interest received from Federal Reserve Banks less monetary interest paid on deposits. For mutual savings banks, savings and loan associations, and credit unions, imputed interest equals monetary interest received on deposits plus other property income less monetary interest paid on deposits less profits before tax of mutual institutions. For investment companies, imputed interest equals monetary interest received plus dividends received less the interest share of cash distributions less dividends paid other than capital gains

distributions. The personal share of commercial bank and savings and loan association imputed interest is equal to the share of deposits of these institutions held by persons; imputed interest paid by mutual savings banks, credit unions, and investment companies is all allocated to persons.

Estimates for all years are derived from data on interest paid and received from the FDIC [44], the Federal Home Loan Bank Board [45], and the National Credit Union Administration [85]. Profits of mutual institutions and interest and dividend income of investment companies are from tabulations of corporate income tax returns or other sources as described in MP-2 [147, pages 10, 19, 38–39]. The share of commercial bank deposits attributable to persons is based on data from the FDIC [44] and the Federal Reserve Board's demand deposit ownership survey [24]. The share of savings and loan association deposits attributable to persons is based on a 1968 study by the Federal Home Loan Bank Board on ownership of deposits [46].

Quarterly and monthly estimates are prepared judgmentally.

4.8 Expense of handling life insurance

This PCE category consists of current expenses of private businesses that underwrite life insurance and administer pension plans. As explained in the introduction, current expenses are used to measure PCE for this category because it allows the savings attributable to life insurance and private pension plans to be treated as personal saving rather than as business saving. Current expenses are defined to consist of all expenses related to life insurance and pension activities, including investment expenses, but to exclude expenses related to real estate activities. Current expenses are defined to include imputed interest received from commercial banks and the profits of stock life insurance companies.

Life insurance is underwritten by three types of businesses: Legal reserve companies, including both stock and mutual companies; fraternal benefit societies; and mutual savings banks. All types of policies are included: Whole life, term, endowment and retirement income, group life, industrial life, and credit life insurance. Private pension plans include all types of annuity arrangements administered by life insurance companies and pension plans administered by other institutions (that is, private noninsured pension plans), so long as the plan is subject to the provisions of the Employees Retirement Security Act of 1974, which covers virtually all types of plans provided by employers.

4.8.1 Legal reserve companies

For domestic legal reserve companies, the benchmark and nonbenchmark annual estimates, except for the first July revision estimates, are based on tab-

ulations prepared by the American Council of Life Insurance (ACLI) from annual statements filed by the companies with State insurance departments [3]. The following items related to the life insurance and pension business in these tabulations are considered current expenses: Commissions paid on premiums and annuity considerations; general insurance expenses; investment expenses; insurance taxes, licenses, and fees; and other miscellaneous expenses. Commissions paid on premiums and annuity considerations, which measure only commissions on direct insurance business, are adjusted to a measure of total net commissions paid by including commissions paid on reinsurance assumed and by subtracting commissions received on reinsurance ceded.

Because the annual statements of domestic companies consolidate their activities world-wide, the expenses of their operations in foreign countries must be subtracted. In addition, the expenses of foreign life insurance companies operating in the United States must be added. The expenses of domestic companies abroad are estimated using the relationship between domestic premium receipts and total premium receipts from the ACLI's *Life Insurance Fact Book* (LIFB) [4]. The expenses of foreign companies in the United States are estimated as the product of current expenses of U.S. companies chargeable to U.S. residents and the ratio, based on data from the LIFB, of premiums paid by U.S. residents to Canadian companies operating in the United States to premiums paid by U.S. residents to U.S. companies. For nonbenchmark years, the net of these geographic adjustments is extrapolated by current expenses of domestic legal reserve companies.

The last steps in estimating current expenses are (1) to add imputed interest paid by commercial banks to life insurance companies and (2) to add the profits of stock life insurance companies. The estimates of imputed interest paid by commercial banks are described in the previous section; as described in [147], the estimates of profits are based on tabulations of corporate tax returns from IRS [206] for the third July revision or on data from ACLI for the second July revision.

4.8.2 Fraternal benefit societies and mutual savings banks

For fraternal benefit societies and mutual savings banks, data on current expenses are not available. Consequently, PCE is estimated as premiums less benefits and dividends paid to members and beneficiaries. For the benefit societies, estimates are based on data from the National Fraternal Congress of America [87]. For mutual savings banks, estimates are based on data from the LIFB [4]. Both of these sources are available annually, except for the most recent year.

4.8.3 Private noninsured pension plans

For private noninsured pension plans, the estimate of expenses for the last benchmark year (1977) are based on IRS tabulations of reports for pension plans [205]. (Previous benchmark and annual estimates were based on SEC data on noninsured plans [230], since discontinued.) Annual estimates except for the most recent year are prepared separately for commissions and for all other expenses. Commissions are estimated as the product of the value of stock transactions by these plans and an institutional commission rate. Stock transactions is the sum of purchases and sales from the IRS report, extrapolated by the product of pension fund assets, from LIFB, and the NYSE turnover rate [93]. The institutional commission rate is that derived in preparing the PCE estimate for brokerage and investment counseling described above. All other expenses of private pension plans are extrapolated by the wages and salaries of private pension, health and welfare funds from BLS [203].

For the most recent year, expenses for both life insurance and private noninsured pension plans are extrapolated by BLS tabulations of the wages and salaries of life insurance carriers [203].

For the extrapolation of current quarterly and monthly estimates, and the interpolation of historical estimates, wages and salaries of insurance carriers are estimated based on BLS employment and earnings

[202]. For the advance quarterly estimate, 3 months of BLS data are available.

4.9 Religious activities

Religious activities, like those of other nonprofit institutions, are measured in PCE by their current operating expenses, as explained in the introduction. For all years except the first July revision estimates, the annual estimates are the sum of a number of separate calculations for each denomination. Expenses are derived by multiplying per capita contributions to congregational expenses, taken from the National Council of Churches (NCC) *Church Financial Statistics* [83], by membership estimates based on data from the same source, from the *Yearbook of American and Canadian Churches* [84], and from the *Official Catholic Directory* [64]. These expense estimates are reduced by the value of construction of religious buildings, based on Census Bureau data [154].

For the first July revision estimate, expenses are extrapolated by the product of Census Bureau data on the U.S. adult resident population [135] and the most recent BEA estimate of per capita disposable personal income.

Quarterly and monthly estimates are interpolations and extrapolations of the annual estimates, using as indicator wages and salaries derived from monthly BLS data on employees and earnings of employees of religious institutions [202].

Constant-Dollar Estimates

The constant-dollar estimates of PCE are prepared at a detailed level using one of three methods. The method used for most of the PCE categories is deflation, that is, constant-dollar estimates are obtained by dividing current-dollar estimates, at the most detailed category level, by appropriate price indexes with the base period—at present, the year 1982—equal to 100. The other methods, direct base-year valuation and quantity extrapolation, are similar in that they both use quantity indicators. In direct base-year valuation, constant-dollar estimates are obtained by multiplying base-period prices by actual quantity data for the other periods. In quantity extrapolation, constant-dollar estimates are obtained by extrapolating the base-period current-dollar estimates in both directions from the base period (1982) by quantity indicators. For each PCE category shown in NIPA table 2.5, table 15 indicates which of the three methods is used and provides information about the source data for the quantity indicators and price indexes. Additional information on these sources is provided later in this section.

Table 15 also identifies which estimates are calculated monthly, quarterly, or annually and which price indexes or quantity indicators are seasonally adjusted. For virtually all PCE categories, constant-dollar estimates are prepared on a monthly basis; the quarterly and annual estimates are the sum of the monthly estimates. For categories for which monthly source data are not available, the constant-dollar estimates are prepared on a quarterly basis, if possible: Annual estimates are summed from the quarterly estimates, monthly historical estimates are derived by interpolation, and current monthly estimates are derived judgmentally. For PCE categories for which only annual data are available, the constant-dollar estimates are prepared on an annual basis. Quarterly and monthly historical estimates are derived by interpolation, and quarterly and monthly current estimates are derived judgmentally.

1 Source Data Used for Deflation

1.1 Price indexes from other sources

The price indexes used to deflate the detailed PCE categories are almost all CPI's. CPI's, published monthly by BLS in the *CPI Detailed Report* [201], are based on actual transaction prices for the items in a fixed, or constant, "market basket" of consumer goods and serv-

ices purchased by the population of urban consumers. Price indexes from other sources include the BLS Producer Price Index (PPI) for apparel [204]; the Health Care Financing Administration input price indexes for nonprofit hospitals (quarterly and annually) and for nursing homes (annually) [188]; a trade source input price index for higher education (annually) [101]; and a composite index of CPI's for industrialized countries from the International Monetary Fund [56].

1.2 Indexes prepared by BEA

Indexes are prepared by BEA for several PCE categories.

1.2.1 Computers and peripheral equipment

This category is deflated with a quarterly price index for personal computers [146, 148].

1.2.2 Food produced and consumed on farms

This category is deflated with a composite index prepared from monthly U.S. Department of Agriculture (USDA) prices received by farmers [109].

1.2.3 Tolls

This category is deflated with an index prepared annually from information on toll rates and weights based on historical toll revenue traffic information, both from the International Bridge, Tunnel, and Turnpike Association [54, 55].

1.2.4 Airline transportation

This category is deflated with an index prepared from the CPI for airlines and Department of Transportation [216, 217] and trade association data [2] on revenue per passenger mile.

1.2.5 Foreign travel by U.S. residents

This category is deflated with a composite index of annual CPI's for selected countries adjusted for exchange rates and combined with travel expenditure weights.

Finally, some categories are deflated with composite indexes of input prices prepared from price and cost indexes. The latter are primarily indexes of average earnings, by industry: Monthly estimates are

Table 15.—Constant-Dollar PCE: Sources of Estimates

Line in NIPA table 2.5	Category	Price index for deflation, quantity extrapolator of base-year value, or directly valued quantity	1982 weight (percent)
4	New autos	CPI for new cars	2.601
5	Net purchases of used autos:		
	Dealers' margin	Directly valued units sold . . . . .	.371
	Net transactions	Directly valued change in stock (A); monthly, CPI for used cars.	.587
6	Other motor vehicles:		
	New and used trucks	CPI for new trucks . . . . .	.555
	Recreational vehicles	CPI for new cars . . . . .	.208
7	Tires, tubes, accessories and other parts:		
	Tires and tubes	CPI for tires* . . . . .	.525
	Accessories and other parts	CPI for other parts and equipment* . . . . .	.461
9	Furniture, including mattresses and bedsprings	CPI for furniture and bedding	1.052
10	Kitchen and other household appliances	CPI for major household appliances . . . . .	.864
11	China, glassware, tableware, and utensils	CPI for tableware, serving pieces, and nonelectric kitchenware.	.507
12	Radio and television receivers, records, and musical instruments:		
	Televisions	CPI for television . . . . .	.572
	Phonograph records and radio	CPI for sound equipment . . . . .	.530
	Musical instruments	CPI for toys, hobbies and music equipment . . . . .	.073
	Computers and peripheral equipment	BEA price index (Q) . . . . .	.020
13	Other durable house furnishings:		
	Floor coverings	CPI for floor and window coverings, infants' laundry, cleaning, and outdoor equipment.	.345
	Writing equipment	CPI for school books and supplies . . . . .	.067
	Hand tools	CPI for lawn equipment, power tools, and other hardware.*	.148
	Other durable house furnishings, not elsewhere classified:		
	Lighting fixtures and supplies, mirrors, glass and wood products, and household clocks.	CPI for clocks, lamps, and decor items . . . . .	.362
	Pillows, blankets, and quilts	CPI for household linens . . . . .	.128
15	Ophthalmic products and orthopedic appliances	CPI for eye care* . . . . .	.270
16	Wheel goods, durable toys, sports equipment, boats, and pleasure aircraft:		
	Boats and pleasure aircraft	CPI for sport vehicles, including bicycles* . . . . .	.229
	Wheel goods, durable toys, and sports equipment:		
	Golf, tennis and other sports equipment	CPI for other sporting goods . . . . .	.325
	Bicycles and motorcycles.	CPI for sport vehicles, including bicycles* . . . . .	.268
	Cameras	CPI for photographic supplies and equipment . . . . .	.122
17	Jewelry and watches	CPI for watches and jewelry . . . . .	.812
18	Books and maps	CPI for magazines, periodicals, and books* . . . . .	.320
21	Food purchased for off-premise consumption:		
	Beef	CPI for beef and veal	1.235
	Pork	CPI for pork	1.141
	Other red meat	CPI for other meats* . . . . .	.128
	Fluid milk	CPI for fresh milk and cream . . . . .	.836
	Other dairy products	CPI for processed dairy products . . . . .	.709
	Poultry	CPI for poultry . . . . .	.494
	Eggs	CPI for eggs . . . . .	.244
	Fresh fruit	CPI for fresh fruit . . . . .	.524
	Fresh vegetables	CPI for fresh vegetables . . . . .	.844
	Processed fruits and vegetables	CPI for processed fruits and vegetables	1.374
	Grain mill products	CPI for cereal and cereal products . . . . .	.376
	Bakery products	CPI for bakery products* . . . . .	.995
	Fats and oils	CPI for fats and oils* . . . . .	.368

Table 15.—Constant-Dollar PCE: Sources of Estimates—Continued

Line in NIPA table 2.5	Category	Price index for deflation, quantity extrapolator of base-year value, or directly valued quantity	1982 weight (percent)
	Other farm food:		
	Sugar and sweets	CPI for sugar and sweets* .....	.452
	Nonalcoholic beverages	CPI for nonalcoholic beverages .....	.373
	Other prepared foods	CPI for other prepared foods .....	.377
	Fish	CPI for fish and seafood .....	.469
	Imported food:		
	Beef and veal	CPI for beef and veal .....	.262
	Pork	CPI for pork .....	.126
	Other meats	CPI for other meats .....	.016
	Poultry	CPI for poultry .....	.045
	Fresh fruits	CPI for fresh fruits .....	.070
	Fresh vegetables	CPI for fresh vegetables .....	.056
	Processed fruits and vegetables	CPI for processed fruits and vegetables .....	.201
	Other food at home	CPI for other food at home .....	.313
	Alcoholic beverages	CPI for alcoholic beverages at home	1.548
22	Purchased meals and beverages:		
	Purchased meals	CPI for food away from home*	4.636
	Purchased beverages	CPI for alcoholic beverages away from home .....	.868
23	Food furnished employees (including military) and food produced and consumed on farms:		
	Food furnished employees	CPI for food away from home* .....	.320
	Food produced and consumed on farms	BEA composite index of prices received by farmers .....	.047
28	Shoes	CPI for footwear .....	.920
29	Women's and children's clothing and accessories except shoes:		
	Women's luggage	CPI for luggage .....	.080
	Women's and children's clothing	CPI for women's and girls' clothing	3.291
30	Men's and boys' clothing and accessories except shoes:		
	Men's luggage	CPI for luggage .....	.020
	Men's and boys' clothing	CPI for men's and boys' clothing	1.749
	Clothing issued to military personnel	PPI for apparel .....	.007
31	Gasoline and oil	CPI for motor fuel, motor oil, coolant and other products	4.345
32	Fuel oil and coal	CPI for fuel oil and other household fuels .....	.908
34	Tobacco products	CPI for tobacco products	1.202
35	Toilet articles and preparations	CPI for toilet goods and personal care appliances* .....	.919
36	Semidurable house furnishings	CPI for curtains, drapes, slipcovers, and sewing materials.* .....	.556
37	Cleaning and polishing preparations, and miscellaneous household supplies and paper products:		
	Lighting supplies	CPI for miscellaneous household products .....	.107
	Cleaning and polishing preparations	CPI for laundry and cleaning products, including soap.* .....	.591
	Household paper products	CPI for cleansing and toilet tissue, paper towels and napkins.* .....	.402
38	Drug preparations and sundries	CPI for medical care commodities	1.079
39	Nondurable toys and sport supplies:		
	Ammunition	CPI for toys, hobbies, and music equipment .....	.164
	Film	CPI for photographic supplies and equipment .....	.102
	Sports equipment, games, toys, and dolls	CPI for other sporting goods .....	.555
40	Stationery and writing supplies	CPI for stationery, stationery supplies, and gift wrap* .....	.256
41	Net foreign remittances:		
	Expenditures abroad by U.S. residents	Composite index of CPI's for industrial countries* .....	.139
	Less: Personal remittances in kind to foreigners	CPI for commodities .....	.020
42	Other nondurable goods:		
	Magazines, newspapers and sheet music	CPI for magazines, periodicals, and books* .....	.230
	Newspapers	CPI for newspapers .....	.328
	Flowers, seeds, and potted plants	CPI for lawn and garden supplies .....	.219

Table 15.—Constant-Dollar PCE: Sources of Estimates—Continued

Line in NIPA table 2.5	Category	Price index for deflation, quantity extrapolator of base-year value, or directly valued quantity	1982 weight (percent)
45	Owner-occupied nonfarm dwellings—space rent	CPI for owners' equivalent rent*	10.636
46	Tenant-occupied nonfarm dwellings—rent	CPI for rent, residential*	3.797
47	Rental value of farm dwellings	Base-year value extrapolated by net stock of farm dwellings (A).	.631
48	Other housing:		
	Hotels and motels	CPI for lodging while out of town . . . . .	.421
	Educational institutions	CPI for lodging while at school* . . . . .	.137
	Other	CPI for rent, residential* . . . . .	.035
50	Electricity	CPI for electricity	2.295
51	Gas	CPI for utility (piped) gas	1.254
52	Water and other sanitary services	CPI for water and sewerage maintenance* . . . . .	.574
53	Telephone and telegraph	CPI for telephone services*	1.736
54	Domestic service:		
	Pay in cash	CPI for domestic services* . . . . .	.348
	Pay in kind	CPI for food at home . . . . .	.035
55	Other household operation services:		
	Electrical, upholstery, and furniture repair	CPI for appliance and furniture repair* . . . . .	.146
	Postage	CPI for postage* . . . . .	.216
	Household insurance	Base-year value extrapolated by constant-dollar premiums.	.085
	Moving and storage and all other household operation services.	CPI for moving, storage, freight, household laundry and dry cleaning services.*	.303
57	User-operated transportation:		
	Repair, greasing, washing, parking, storage, and rental.	CPI for automobile maintenance and repair	1.728
	Bridge, tunnel, ferry, and road tolls	BEA toll price index based on trade source data (A)	.060
	Insurance premiums less claims paid	Base-year value extrapolated by constant-dollar premiums.	.442
59	Transit systems	CPI intracity mass transit* . . . . .	.148
60	Other purchased local transportation:		
	Taxicab	CPI for taxi fares* . . . . .	.144
	Railway (commutation)	CPI for intracity mass transit* . . . . .	.019
62	Railway (excluding commutation)	CPI for intercity train fare* . . . . .	.022
63	Bus	CPI for intercity bus fare* . . . . .	.061
64	Airline	BEA price index . . . . .	.715
65	Other purchased intercity transportation	CPI for public transportation* . . . . .	.060
67	Physicians	CPI for physicians' services	2.654
68	Dentists	CPI for dental services* . . . . .	.849
69	Other professional services	CPI for services by other medical professionals*	1.001
70	Privately controlled hospitals and sanitariums:		
	Nonprofit hospitals'	Composite index of input prices from Health Care Financing Administration (Q)*; monthly, BEA composite index of input prices.	3.949
	For-profit hospitals'	CPI for hospital room (A); quarterly, composite index of input prices from Health Care Financing Administration; monthly, BEA composite index of input prices.	.516
	Nursing homes	Composite index of input prices from Health Care Financing Administration (A); monthly, BEA composite index of input prices.	.914

Table 15.—Constant-Dollar PCE: Sources of Estimates—Continued

Line in NIPA table 2.5	Category	Price index for deflation, quantity extrapolator of base-year value, or directly valued quantity	1982 weight (percent)
71	Health insurance:		
	Medical care and hospitalization	Base-year value extrapolated by constant-dollar benefits (A).	.431
	Income loss	Base-year value extrapolated by constant-dollar benefits (A).	.130
	Workers' compensation	Base-year value extrapolated by constant-dollar benefits (Q).	.176
74	Cleaning, storage, and repair of clothing and shoes:		
	Shoe cleaning and repair	CPI for other apparel services* .....	.028
	Cleaning, laundering, dyeing, pressing, alteration, storage, and repair of garments.	CPI for laundry and dry cleaning other than coin operated.	.316
75	Barbershops, beauty parlors, baths, and health clubs:		
	Beauty parlors	CPI for beauty parlor services for females* .....	.472
	Barbershops and others	CPI for haircuts and other barbershop services for males.*	.100
76	Other personal care services:		
	Watch and clock repair	CPI for other apparel services* .....	.047
	Clothing repair not elsewhere classified	CPI for laundry and dry cleaning other than coin operated.	.207
78	Brokerage charges and investment counseling:		
	Stock brokerage charges	Base-year value extrapolated by orders placed by individuals, adjusted for trading days.	.217
	Other brokerage charges and investment counseling.	Implicit price deflator for stock brokerage charges ...	.194
79	Bank service charges, trust services, and safe deposit box rental.	CPI for personal financial services* .....	.394
80	Services furnished without payment by financial intermediaries except life insurance carriers and private noninsured pension plans.	Base-year value extrapolated by paid employee hours of relevant financial institutions (A).	2.008
81	Other personal business:		
	Expense of handling life insurance	BEA composite index of input prices (A)	1.236
	Legal services	CPI for legal service fees .....	.915
	Funeral and burial expenses	CPI for funeral expenses* .....	.240
	Other:		
	Trade union expenses	BEA composite index of input prices .....	.212
	Professional association expenses	BEA composite index of input prices .....	.071
	Employment agency fees, money orders, classified advertisements, accountants and tax return preparation services.	CPI for personal financial services* .....	.149
	Other personal business, n.e.c.		
		CPI for legal services .....	.036
		CPI for admissions* .....	.380
83	Admissions to specified spectator amusements		
84	Other recreation:		
	Radio and television repair	CPI for appliance and furniture repair* .....	.135
	Clubs and fraternal organizations except insurance.	BEA composite index of input prices .....	.187
	Commercial participant amusements:		
	Bowling and billiards	CPI for participant sports* .....	.084
	Other	CPI for other entertainment services* .....	.524
	Parimutuel net receipts	Base-year value extrapolated by constant-dollar winnings.	.109
	Other recreation, n.e.c.:		
	Pets and pet care services	CPI for pet supplies and expense* .....	.146
	Cable television	CPI for cable television* .....	.229
	Video cassette rental	Constant dollars equals current dollars	.018
	Film development, photo studios, high school recreation, lotteries, and commercial amusements n.e.c.	CPI for other entertainment services* .....	.876

Table 15.—Constant-Dollar PCE: Sources of Estimates—Continued

Line in NIPA table 2.5	Category	Price index for deflation, quantity extrapolator of base-year value, or directly valued quantity	1982 weight (percent)
86	Higher education	Composite index of input prices from trade source (A); monthly, BEA composite index of input prices.	.588
87	Elementary and secondary schools	BEA composite index of input prices .....	.529
88	Other private education and research	BEA composite index of input prices* .....	.473
89	Religious and welfare activities	BEA composite index of input prices	2.164
90	Net foreign travel:		
	Foreign travel by U.S. residents	BEA composite index of CPI's for selected foreign countries (A).	.796
	Less: Expenditures in the U.S. by foreigners	BEA composite index of U.S. CPI components .....	.666

n.e.c. Not elsewhere classified.

1. Current-dollar estimates of these categories are available annually only.

Note.—Except for series marked with an asterisk, all source data are sea-

sonally adjusted. Unless otherwise noted, all source data are available monthly. Source data marked "(A)" or "(Q)" are available only annually or quarterly, respectively; the corresponding monthly estimates for these series, unless otherwise noted, are derived by interpolation or, for current periods, judgmentally.

from BLS *Employment and Earnings* [202], and annual estimates are from BLS *Employment and Wages* [203]. The weights used to combine these price and cost indexes are derived from the most recent census of service industries, except for the life insurance category, for which the weights are derived from the most recent benchmark I-O accounts.

1.2.6 Hospitals

This category—both nonprofit and for-profit hospitals—is deflated monthly with a composite index prepared from average earnings and the CPI for all items.

1.2.7 Nursing homes

This category is deflated monthly with a composite index prepared from average earnings, an index of fringe benefits per hospital employee from the American Hospital Association [9], and the PPI for industrial commodities less fuel and related products and power.

1.2.8 Expense of handling life insurance

This category is deflated annually with a composite index prepared from average earnings, the PPI for electric power, and 4 CPI's.

1.2.9 Other

The categories *trade union expenses, professional association expenses, clubs and fraternal organizations except insurance, higher education* (monthly), *elementary and secondary schools, other private education and*

research, and religious and welfare activities are deflated with composite indexes prepared from average earnings and the PPI for industrial commodities less fuel and related products and power.

2 Source Data for Quantity Indicators

2.1 Direct base-year valuation

The direct base-year valuation method is used for both the dealers' margin and net transactions components of the estimates of net purchases of used autos.

The constant-dollar margin is estimated as unit sales of used autos multiplied by the base-period average margin per used auto sold. Unit sales of franchised car dealers are from the Motor Vehicle Manufacturers Association [68]; unit sales of used car dealers are estimated using Census Bureau retail sales of used car dealers [128] and an average value based on the average auction price of used cars reported in *Automotive News* [32].

For the annual estimates, net transactions in used autos is the constant-dollar value of the net change in the stock of used autos held by consumers, estimated as a residual after accounting for changes in used autos held by business and government, and accounting for exports, imports, and changes in dealer inventories. The net change is derived using unit sales from trade sources and BEA constant-dollar stocks with depreciated original value in base-year prices. For the quarterly estimates, net transactions is measured in

current dollars and deflated using the CPI for used cars. (Further details on the derivation of the estimates of net transactions in used cars can be found at the end of the current-dollar section.)

2.2 Quantity extrapolation

The quantity extrapolation method is used for the estimates of rental value of farm dwellings, services furnished without payment by financial intermediaries except life insurance carriers and private noninsured pension plans, stock brokerage charges, insurance other than life insurance, and parimutuel net receipts. The source data used for the quantity indicators for these categories are described below.

2.2.1 Rental value of farm housing

The indicator series for this category is the constant-dollar net stock of farm housing, based on USDA data [108]. This series is estimated annually by BEA by adding to the previous year's stock in base-period prices net investment in farm housing—that is, capital expenditures net of depreciation—deflated by the farm dwelling construction cost index.

2.2.2 Services furnished without payment by financial intermediaries except life insurance carriers and private noninsured pension plans

The indicator series for this category is employee hours of relevant financial institutions. This series is derived annually by BEA from Bureau of Labor Statistics (BLS) tabulations of average weekly hours worked and of employment and wages reported by employers covered by State unemployment insurance programs [202, 203].

2.2.3 Stock brokerage charges

The indicator series for brokerage charges is the number of orders placed by individuals, based on data from

the New York Stock Exchange [94], the Securities and Exchange Commission (SEC) [230], and the National Association of Securities Dealers [73]. The use of these source data in estimating orders is presented in the current-dollar section.

2.2.4 Other insurance

The indicator series for the insurance categories other than life insurance is either deflated premiums or deflated benefits. Current-dollar PCE is measured as premiums earned less losses incurred and dividends to policyholders for commercial insurers, and as operating expenses for nonprofit insurers. (The source data for these estimates are described in the current-dollar section.)

For household personal property and auto insurance, the Consumer Price Index (CPI) for tenants' and auto insurance, respectively, are used to deflate premiums.

For health insurance, benefits are deflated in three parts: Medical and hospitalization insurance, income loss insurance, and private workers' compensation. For medical and hospitalization insurance, a weighted average of the CPI for hospital and other medical services and the CPI for physicians' services is used. For income loss insurance, losses are deflated by the CPI for all items for urban workers. For private workers' compensation, a weighted average of the deflators for medical and hospitalization insurance and for income loss insurance is used annually; monthly the CPI for all items is used.

2.2.5 Parimutuel net receipts

The indicator series for parimutuel net receipts is winnings deflated by the CPI for all items. Winnings—that is, the amount wagered less the amount retained by tracks and State governments—is based on data from the National Association of State Racing Commissioners [74] that are used to estimate current-dollar PCE.

Sources

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Appendix–Selected NIPA Tables

This appendix reproduces the four NIPA tables that present PCE by detailed type of product and type of expenditure: (1) Table 2.2.–Personal Consumption Expenditures by Major Type of Product, (2) Table 2.3.–Personal Consumption Expenditures by Major Type of Product in Constant Dollars, (3) Table 2.5.–Personal Consumption Expenditures by Type of Product in Constant Dollars, and (4) Table 2.4.–Personal Consumption Expenditures by Type of Expenditure. The 1988 estimates in these tables are from the July 1989 SURVEY.

Table 2.2.—Personal Consumption Expenditures by Major Type of Product

[Billions of dollars]

	Line	1988
Personal consumption expenditures.....	1	3,235.1
Durable goods.....	2	455.2
Motor vehicles and parts.....	3	211.6
Furniture and household equipment.....	4	162.0
Other.....	5	81.6
Nondurable goods.....	6	1,052.3
Food.....	7	559.7
Clothing and shoes.....	8	186.8
Gasoline and oil.....	9	76.8
Other nondurable goods.....	10	229.0
Fuel oil and coal.....	11	19.5
Other.....	12	209.5
Services.....	13	1,727.6
Housing.....	14	501.3
Household operation.....	15	197.6
Electricity and gas.....	16	93.7
Other.....	17	104.0
Transportation.....	18	117.9
Medical care.....	19	398.3
Other.....	20	512.4

Table 2.3.—Personal Consumption Expenditures by Major Type of Product in Constant Dollars

[Billions of 1982 dollars]

	Line	1988
Personal consumption expenditures.....	1	2,598.4
Durable goods.....	2	413.6
Motor vehicles and parts.....	3	179.2
Furniture and household equipment.....	4	164.8
Other.....	5	69.6
Nondurable goods.....	6	904.5
Food.....	7	460.0
Clothing and shoes.....	8	161.3
Gasoline and oil.....	9	97.1
Other nondurable goods.....	10	186.1
Fuel oil and coal.....	11	25.4
Other.....	12	160.7
Services.....	13	1,280.2
Housing.....	14	366.1
Household operation.....	15	164.1
Electricity and gas.....	16	82.8
Other.....	17	81.3
Transportation.....	18	94.5
Medical care.....	19	278.2
Other.....	20	377.4

Table 2.5.—Personal Consumption Expenditures by Type of Product in

Constant Dollars

[Billions of 1982 dollars]

	Line	1988
Personal consumption expenditures.....	1	2,598.4
Durable goods.....	2	413.6
Motor vehicles and parts.....	3	179.2
New autos (65).....	4	84.4
Net purchases of used autos (66).....	5	32.7
Other motor vehicles (67).....	6	30.3
Tires, tubes, accessories, and other parts (68).....	7	31.9
Furniture and household equipment.....	8	164.8
Furniture, including mattresses and bedsprings (29).....	9	28.9
Kitchen and other household appliances (30).....	10	28.1
China, glassware, tableware, and utensils (31).....	11	14.3
Radio and television receivers, records, and musical instruments (87).....	12	62.4
Other durable house furnishings (32).....	13	31.2
Other.....	14	69.6
Ophthalmic products and orthopedic appliances (46).....	15	8.0
Wheel goods, durable toys, sports equipment, boats, and pleasure aircraft (86).....	16	33.0
Jewelry and watches (18).....	17	21.3
Books and maps (83).....	18	7.4
Nondurable goods.....	19	904.5
Food.....	20	460.0
Food purchased for off-premise consumption (3).....	21	314.2
Purchased meals and beverages (4).....	22	137.4
Food furnished employees (including military) and food produced and consumed on farms (5+6).....	23	8.4
Addenda: Food excluding alcoholic beverages(8).....	24	410.1
Alcoholic beverages purchased for off-premise consumption (9).....	25	32.2
Other alcoholic beverages (10).....	26	17.7
Clothing and shoes.....	27	161.3
Shoes (12).....	28	24.1
Women's and children's clothing and accessories except shoes (14).....	29	92.0
Men's and boys' clothing and accessories except shoes (15+16).....	30	45.2
Gasoline and oil (70).....	31	97.1
Fuel oil and coal (40).....	32	25.4
Other.....	33	160.7
Tobacco products (7).....	34	21.9
Toilet articles and preparations (21).....	35	22.4
Semidurable house furnishings (33).....	36	13.6
Cleaning and polishing preparations, and miscellaneous household supplies and paper products (34).....	37	25.7
Drug preparations and sundries (45).....	38	22.7
Nondurable toys and sport supplies (85).....	39	26.5
Stationery and writing supplies (35).....	40	7.5
Net foreign remittances (105 less 107).....	41	2.0
Other (84+89).....	42	18.1
Services.....	43	1,280.2
Housing.....	44	366.1
Owner-occupied nonfarm dwellings—space rent (24).....	45	245.7
Tenant-occupied nonfarm dwellings—rent (25).....	46	95.6
Rental value of farm dwellings (26).....	47	10.8
Other (27).....	48	14.0
Household operation.....	49	164.1
Electricity (37).....	50	57.0
Gas (38).....	51	25.8
Water and other sanitary services (39).....	52	15.3
Telephone and telegraph (41).....	53	37.9
Domestic service (42).....	54	9.3
Other (43).....	55	18.8
Transportation.....	56	94.5
User-operated transportation (69+71+72).....	57	61.8
Purchased local transportation.....	58	6.6
Transit systems (74).....	59	3.2
Other (75+76).....	60	3.4
Purchased intercity transportation.....	61	26.1
Railway (excluding commutation) (78).....	62	6
Bus (79).....	63	1.2
Airline (80).....	64	22.4
Other (81).....	65	1.9
Medical care.....	66	278.2
Physicians (47).....	67	69.8
Dentists (48).....	68	18.3
Other professional services (49).....	69	39.8
Privately controlled hospitals and sanitariums (50).....	70	132.6
Health insurance (51).....	71	17.8
Other.....	72	377.4
Personal care.....	73	33.3
Cleaning, storage, and repair of clothing and shoes (17).....	74	8.3
Barbershops, beauty parlors, baths, and health clubs (22).....	75	16.4
Other (19).....	76	8.6
Personal business.....	77	154.4
Brokerage charges and investment counseling (56).....	78	20.5
Bank service charges, trust services, and safe deposit box rental (57).....	79	9.8
Services furnished without payment by financial intermediaries except life insurance carriers and private noninsured pension plans (58).....	80	51.1
Other (59+60+61+62).....	81	73.0
Recreation.....	82	81.3
Admissions to specified spectator amusements (90).....	83	8.5
Other (88+94+95+96+97).....	84	72.9
Private education and research.....	85	45.7
Higher education (99).....	86	14.3
Elementary and secondary schools (100).....	87	13.4
Other (101).....	88	18.0
Religious and welfare activities (102).....	89	62.0
Net foreign travel (104 less 106).....	90	.6

NOTE.—The figures in parentheses are the line numbers of the corresponding items in table 2.4.

Table 2.4.—Personal Consumption Expenditures by Type of Expenditure

[Billions of dollars]

	Line	1988		Line	1988
Personal consumption expenditures	1	3,235.1	Personal business	55	234.4
Food and tobacco	2	596.6	Brokerage charges and investment counseling (s.).....	56	17.6
Food purchased for off-premise consumption (n.d.).....	3	372.6	Bank service charges, trust services, and safe deposit box rental (s.).....	57	15.6
Purchased meals and beverages (n.d.).....	4	176.6	Services furnished without payment by financial intermediaries except life insurance carriers and private noninsured pension plans (s.).....	58	91.1
Food furnished employees (including military) (n.d.).....	5	9.7	Expense of handling life insurance ¹⁷ (s.).....	59	45.4
Food produced and consumed on farms (n.d.).....	6	.8	Legal services (s.).....	60	39.4
Tobacco products (n.d.).....	7	36.9	Funeral and burial expenses (s.).....	61	7.6
Addenda: Food excluding alcoholic beverages (n.d.).....	8	497.3	Other ¹⁸ (s.).....	62	17.6
Alcoholic beverages purchased for off-premise consumption (n.d.).....	9	37.9	Transportation	63	406.4
Other alcoholic beverages (n.d.).....	10	24.4	User-operated transportation.....	64	369.7
Clothing, accessories, and jewelry	11	234.2	New autos (d.).....	65	101.2
Shoes (n.d.).....	12	26.8	Net purchases of used autos (d.).....	66	43.0
Clothing and accessories except shoes ²	13	160.0	Other motor vehicles (d.).....	67	36.1
Women's and children's (n.d.).....	14	107.5	Tires, tubes, accessories, and other parts (d.).....	68	31.3
Men's and boys' (n.d.).....	15	52.4	Repair, greasing, washing, parking, storage, and rental (s.).....	69	62.5
Standard clothing issued to military personnel (n.d.).....	16	.1	Bridge, tunnel, ferry, and road tolls (s.).....	70	76.8
Cleaning, storage, and repair of clothing and shoes (s.).....	17	11.0	Insurance premiums less claims paid (s.).....	71	2.0
Jewelry and watches (d.).....	18	25.1	Purchased local transportation.....	72	16.8
Other ³ (s.).....	19	11.4	Transit systems (s.).....	73	8.4
Personal care	20	48.5	Taxicab (s.).....	74	4.1
Toilet articles and preparations (n.d.).....	21	27.9	Railway (commutation) (s.).....	75	3.8
Barbershops, beauty parlors, baths, and health clubs (s.).....	22	20.7	Purchased intercity transportation.....	76	.5
Housing	23	501.3	Railway (excluding commutation) (s.).....	77	28.2
Owner-occupied nonfarm dwellings—space rent ⁴ (s.).....	24	339.3	Bus (s.).....	78	1.6
Tenant-occupied nonfarm dwellings—rent ⁵ (s.).....	25	132.7	Airline (s.).....	79	1.6
Rental value of farm dwellings (s.).....	26	9.5	Other ¹⁹ (s.).....	80	23.3
Other ⁶ (s.).....	27	19.8	Recreation	81	246.8
Household operation	28	386.4	Books and maps (d.).....	83	9.3
Furniture, including mattresses and bedspreads (d.).....	29	33.5	Magazines, newspapers, and sheet music (n.d.).....	84	16.0
Kitchen and other household appliances (d.).....	30	28.4	Nondurable toys and sport supplies (n.d.).....	85	28.1
China, glassware, tableware, and utensils (d.).....	31	15.7	Wheel goods, durable toys, sports equipment, boats, and pleasure aircraft (d.).....	86	56.5
Other durable house furnishings ⁷ (d.).....	32	35.6	Radio and television receivers, records, and musical instruments (d.).....	87	48.8
Semidurable house furnishings ⁸ (n.d.).....	33	16.6	Radio and television repair (s.).....	88	3.9
Cleaning and polishing preparations, and miscellaneous household supplies and paper products (n.d.).....	34	30.8	Flowers, seeds, and potted plants (n.d.).....	89	6.8
Stationery and writing supplies (n.d.).....	35	8.7	Admissions to specified spectator amusements.....	90	11.9
Household utilities	36	135.1	Motion picture theaters (s.).....	91	4.2
Electricity (s.).....	37	66.4	Legitimate theaters and opera, and entertainments of nonprofit institutions (except athletics) (s.).....	92	4.4
Gas (s.).....	38	27.3	Spectator sports ²⁰ (s.).....	93	3.2
Water and other sanitary services (s.).....	39	21.9	Clubs and fraternal organizations except insurance ²¹ (s.).....	94	5.9
Fuel oil and coal (n.d.).....	40	19.5	Commercial participant amusements ²² (s.).....	95	18.9
Telephone and telegraph (s.).....	41	47.1	Parimutuel net receipts (s.).....	96	2.8
Domestic service (s.).....	42	9.8	Other ²³ (s.).....	97	57.5
Other ¹⁰ (s.).....	43	25.1	Private education and research	98	58.0
Medical care	44	443.0	Higher education ²⁴ (s.).....	99	19.3
Drug preparations and sundries ¹¹ (n.d.).....	45	34.5	Elementary and secondary schools ²⁵ (s.).....	100	16.9
Ophthalmic products and orthopedic appliances (d.).....	46	10.2	Other ²⁶ (s.).....	101	21.8
Physicians (s.).....	47	105.0	Religious and welfare activities²⁶ (s.).....	102	76.1
Dentists (s.).....	48	27.0	Foreign travel and other, net	103	3.2
Other professional services ¹² (s.).....	49	54.3	Foreign travel by U.S. residents (s.).....	104	36.1
Privately controlled hospitals and sanitariums ¹³ (s.).....	50	182.3	Expenditures abroad by U.S. residents (n.d.).....	105	3.7
Health insurance.....	51	29.8	Less: Expenditures in the United States by foreigners (s.).....	106	26.2
Medical care and hospitalization ¹⁴ (s.).....	52	24.3	Less: Personal remittances in kind to foreigners (n.d.).....	107	.5
Income loss ¹⁵ (s.).....	53	2.7			
Workers' compensation ¹⁶ (s.).....	54	2.7			

1. Consists of purchases (including tips) of meals and beverages from retail, service, and amusement establishments, hotels, dining and buffet cars, schools, school fraternities, institutions, clubs, and industrial lunchrooms.

2. Includes luggage.

3. Consists of watch, clock, and jewelry repairs, costume and dress suit rental, and miscellaneous personal services related to clothing.

4. Consists of rent for space and for heating and plumbing facilities, water heaters, lighting fixtures, kitchen cabinets, linoleum, storm windows and doors, window screens, and screen doors, but excludes rent for appliances, furniture, fuel, and electricity.

5. Consists of space rent (see footnote 4) and rent for appliances, furnishings, and furniture.

6. Consists of transient hotels, motels, clubs, schools, and other group housing.

7. Consists of refrigerators and freezers, cooking ranges, dishwashers, laundry equipment, stoves, air conditioners, sewing machines, vacuum cleaners, and other appliances.

8. Includes such house furnishings as floor coverings, comforters, quilts, blankets, pillows, picture frames, mirrors, art products, portable lamps, and clocks. Also includes writing equipment and hand, power, and garden tools.

9. Consists largely of textile house furnishings including piece goods allocated to house furnishing use. Also includes lamp shades, brooms, and brushes.

10. Consists of maintenance services for appliances and house furnishings, moving and warehouse expenses, postage and express charges, premiums for fire and theft insurance on personal property less claims paid, and miscellaneous household operation services.

11. Excludes drug preparations and related products dispensed by physicians, hospitals, and other medical services.

12. Consists of osteopathic physicians, chiropractors, private duty nurses, chiropodists, podiatrists, and others providing health and allied services, not elsewhere classified.

13. Consists of (1) current expenditures (including capital consumption allowances with capital consumption adjustment) of nonprofit hospitals, sanitariums, and nursing homes, and (2) payments by patients to proprietary hospitals, sanitariums, and nursing homes.

14. Consists of (1) premiums, less benefits and dividends, for health, hospitalization, and accidental death and dismemberment insurance provided by commercial insurance carriers, and (2) administrative expenses (including capital consumption allowances with capital consumption adjustment) of Blue Cross and Blue Shield plans and of other independent prepaid and self-insured health plans.

15. Consists of premiums, less benefits and dividends, for income loss insurance.

16. Consists of premiums, less benefits and dividends, for privately administered workers' compensation.

17. Consists of (1) operating expenses of life insurance carriers and private noninsured pension plans, and (2) premiums, less benefits and dividends, of fraternal benefit societies. Excludes expenses allocated by commercial carriers to accident and health insurance.

18. Consists of current expenditures (including capital consumption allowances with capital consumption adjustment) of trade unions and professional associations, employment agency fees, money order fees, spending for classified advertisements, and other personal business services.

19. Consists of baggage charges, coastal and inland waterway fares, travel agents' fees, and airport bus fares.

20. Consists of admissions to professional and amateur athletic events and to racetracks including horse, dog, and auto.

21. Consists of dues and fees excluding insurance premiums.

22. Consists of billiard parlors; bowling alleys; dancing, riding, shooting, skating, and swimming places; amusement devices and parks; golf courses; sightseeing buses and guides; private flying operations; and other commercial participant amusements.

23. Consists of net receipts of lotteries and expenditures for purchases of pets and pet care services, cable TV, film processing, photographic studios, sporting and recreation camps, and recreational services, not elsewhere classified.

24. Equals current expenditures (including capital consumption allowances with capital consumption adjustment) less receipts—such as those from meals, rooms, and entertainments—accounted for separately in consumer expenditures, and less expenditures for research and development financed under contracts or grants.

25. Consists of (1) fees paid to commercial, business, trade, and correspondence schools and for educational services, not elsewhere classified, and (2) current expenditures (including capital consumption allowances with capital consumption adjustment) by research organizations and foundations for education and research.

26. Equals current expenditures (including capital consumption allowances with capital consumption adjustment) of religious, social welfare, foreign relief, and political organizations, museums, libraries, and foundations. The expenditures are net of receipts—such as those from meals, rooms, and entertainments—accounted for separately in consumer expenditures, and excludes relief payments within the United States and expenditures by foundations for education and research, passenger fares and thus are not comparable with earlier estimates.

Note.—Consumer durable goods are designated (d.), nondurable goods (n.d.), and services (s.).

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