

## U.S. Benchmark Input-Output Accounts, 2002

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ON September 21, 2007, the Bureau of Economic Analysis (BEA) released its benchmark input-output (I-O) accounts for 2002.<sup>1</sup> Based on the highest quality source data available, these accounts provide an accurate and comprehensive picture of the inner workings of the economy, showing relationships among more than 400 industries and commodities.

For many economists, analysts, and policymakers, the benchmark I-O accounts are an essential research tool. (See the box “Uses of the Benchmark I-O Accounts.”) For BEA, the benchmark I-O accounts provide a foundation for other economic accounts. For example, the national income and product accounts (NIPAs) benchmark personal consumption expenditures and private equipment and software expenditures estimates to the benchmark I-O accounts.

Because benchmark I-O accounts are based largely on every 5-year data from the Census Bureau, the benchmark I-O accounts lag the reference year by about 5 years; this year, they were released on an accelerated schedule, 3 months earlier than the previous benchmark I-O release. The accounts incorporated several methodological and statistical improvements. These changes updated the accounts to more accurately reflect the structure of the economy and to improve estimates in areas where source data were previously sparse. In addition, the 2002 benchmark I-O estimates benefited from the first-time use of a balancing model to help determine the estimates of intermediate inputs and gross operating surplus.

1. Supplemental tables will be released in late October 2007.

### Data Availability

The estimates from the 2002 benchmark input-output (I-O) accounts at the summary level (135 commodities and 133 industries) and at the detailed level (428 commodities and 426 industries) are available interactively on the BEA Web site. Go to <[www.bea.gov](http://www.bea.gov)>, and under “Industry,” select “Interactive Tables: Input-Output.” Online tools will enable you to create and store unique levels of aggregation of data for specific commodities and industries. To download publication tables, click on “2002” under “Benchmark I-O Data Tables.”

Highlights from the 2002 benchmark I-O accounts include the following:

- Private goods-producing industries accounted for about 18 percent of the economy, compared with about 21 percent in 1997.<sup>2</sup> Private services-producing industries accounted for about 69 percent of GDP in 2002, compared with about 66 percent in 1997.<sup>3</sup> Government’s share of GDP was 13 percent in 2002, unchanged from 1997.<sup>4</sup>
- Health care-related services industries maintained their share of GDP at 6 percent in 2002. Hospitals value added increased about 44 percent; nursing and residential care facilities value added increased about 48 percent. At the same time, pharmaceutical and medicine manufacturing value added grew about 78 percent. The average increase across all industries was 28 percent.
- Electronic information-based industries accounted for less than 1 percent of total GDP and about 11 percent of the information sector’s value added. The 2002 accounts are the first to provide detailed information on electronic shopping, electronic auctions, Web search portals, Internet service providers, and Internet publishing and broadcasting as well as data on the interactions between the Internet industries and all other industries.
- Private goods-producing industries accounted for 28 percent of gross output, compared with 33 percent in 1997. Private services-producing industries accounted for 61 percent of the total, compared with 59 percent in 1997. Government gross output accounted for the remaining 11 percent in 2002, up from 8 percent in 1997.
- Intermediate purchases of materials and services were about \$9 trillion, with 39 percent purchased by private goods-producing industries, 51 percent purchased by private services-producing industries,

2. Private goods-producing industries consists of agriculture, forestry, fishing, and hunting; mining; construction; and manufacturing.

3. Private services-producing industries consists of utilities; wholesale trade; retail trade; transportation and warehousing; information; finance and insurance; real estate and rental and leasing; professional, scientific and technical services; management of companies and enterprises; arts, entertainment, recreation, accommodation, and food services; and other services, except government.

4. Government includes government industries and other special I-O industries; for more information, see the table “Appendix A. Industries in the 2002 Benchmark Input-Output Accounts.”

### Uses of the Benchmark I-O Accounts

The benchmark I-O accounts, produced every 5 years by the Bureau of Economic Analysis (BEA), are used by economists and policy makers in a variety of ways. Broadly speaking, they facilitate the study of economic activity by providing a highly detailed look at interindustry activity. Within BEA, benchmark I-O data are used as the starting point for other accounts, including the national income and product accounts (NIPAs).

**General usage.** The I-O tables, both benchmark and annual, allow researchers to analyze the economic effects of specific events. For example, they can be used in emergency planning and in estimating the economic effects of natural disasters and strikes. Supplemented with additional information, the I-O accounts can be used for broader analyses, such as estimating the effects of an increase in exports on employment or the impact of a petroleum price increase on production in specific industries and on commuting patterns and consumer spending. Recently, Nobel Laureate Lawrence Klein used I-O data to examine the role of information technology on productivity in the financial services industry.<sup>1</sup>

In business, economists use data from the I-O accounts and other BEA accounts to develop forecasting models, which estimate future earnings among other things.

**BEA usage.** BEA uses the benchmark I-O accounts as the foundation for several other accounts (chart A). The benchmark I-O accounts are in fact the most important statistical source for the comprehensive revision of the NIPAs. They are

used to establish the benchmark year level for consumer spending, private equipment and software investment and to provide information on the composition of final demand. This in turn provides the basis for the estimates of GDP for the nonbenchmark years.

Also, the benchmark I-O accounts provide the framework and foundation for the capital flow table and the quantity index for the GDP-by-industry accounts, which are compiled by the Industry Accounts Directorate.<sup>2</sup> The benchmark I-O accounts also provide the foundation for the annual I-O accounts.

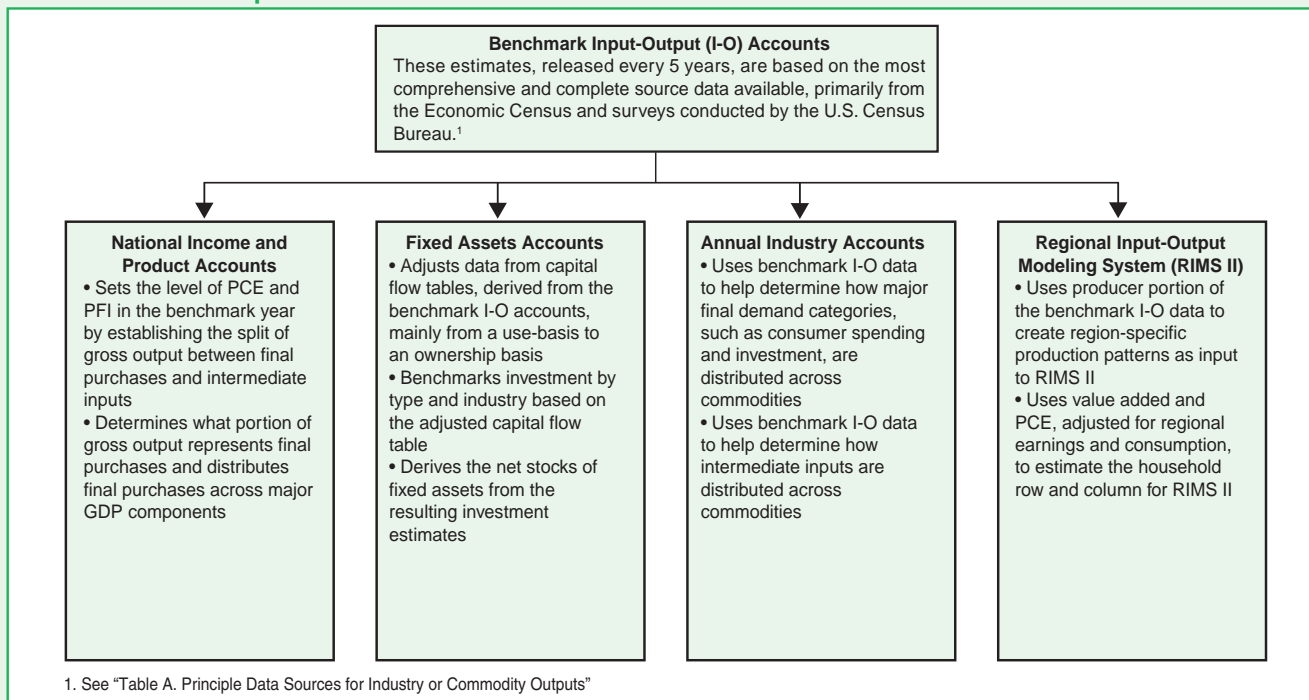
BEA's regional program uses data from the I-O accounts to generate its Regional Input-Output Modeling System (RIMS II), which can be used to analyze the impact of various projects or changes in economic programs on local economies. For example, state and local government planners can use the model to assess the impact of a military base closing or a new development project.

**Other statistical agencies' usage.** The benchmark I-O accounts also are used by other statistical agencies as a framework for preparing further economic statistics. The I-O accounts provide the detail that is essential in determining quantity weights for price indexes, such as the producer price index that is compiled by the Bureau of Labor Statistics (BLS). BLS also uses the benchmark I-O accounts in their projections of industry employment.

2. The capital flow table expands the gross private fixed investment component of the I-O use table in order to show the types of new equipment and structures purchased for use by each industry. The capital flow table is produced once every 5 years, generally in the year after the release of the benchmark I-O accounts.

1. See Lawrence R. Klein, Cynthia Saltzman, and Vijaya G. Duggal, "Information Technology and Productivity: The Case of the Financial Sector," *SURVEY OF CURRENT BUSINESS* 83 (August 2003): 32–37.

**Chart A. Relationship Between the Benchmark I-O Accounts and Other BEA Accounts**



and the remaining 10 percent purchased by government.

- On average, intermediate purchases of materials, energy, and services accounted for 44 cents of each dollar of gross output. Value added accounted for the remaining 56 cents (compensation accounted for 32 cents, taxes on production and imports less subsidies for 4 cents, and gross operating surplus for 20 cents). This distribution was virtually unchanged from 1987.

In addition to every 5-year benchmark I-O accounts, BEA also produces annual I-O accounts.<sup>5</sup> Both of these complementary accounts provide information on the structure of the U.S. economy and an accounting of the production of goods and services by each industry. Both portray the goods and services purchased by each industry, the incomes earned in each industry, and the distribution of sales for each good and service to industries and final users.

However, the benchmark I-O and annual I-O accounts differ in several respects. The benchmark I-O accounts' rich source data—mainly the every 5-year Economic Census—allows them to paint a more detailed picture of the economy at a point in time. The 2002 benchmark I-O accounts detail the flows of 428 commodities to 426 industries and to 13 categories of final uses. In contrast, the annual I-O accounts, which are based primarily on annual survey data from the Census Bureau and the Bureau of Labor Statistics, provide an aggregate time series of information about the flow of goods and services of industries. The annual I-O accounts present information on 65 industries and commodities. Additionally, the annual I-O accounts rely on source data and statistical conventions that are more consistent with other BEA accounts, notably the NIPAs and the GDP-by-industry accounts.

The remainder of this article presents the key improvements in the 2002 benchmark I-O accounts. The first part summarizes the major changes in classification and definition. The second part describes statistical changes. The third part summarizes the methodology used to compile the accounts. A technical note describing the 2002 benchmark I-O tables is followed by several appendix tables that provide information on the classification of industries, value added, final uses, and bridge tables that link the 2002 benchmark I-O accounts to the NIPAs.

5. Benchmark I-O accounts are prepared at 5-year intervals and are based on detailed data from the Economic Census conducted by the U.S. Census Bureau. The 10 previous benchmark I-O accounts covered 1947, 1958, 1963, 1967, 1972, 1977, 1982, 1987, 1992, and 1997. The 1997 accounts were presented in the December 2002 SURVEY OF CURRENT BUSINESS.

## Changes in Classification and Definition

The 2002 benchmark I-O accounts incorporated changes made by the 2003 comprehensive revision of the NIPAs. Some changes were the result of classification and definition changes designed to make the NIPAs more accurately reflect the structure of the U.S. economy. The changes also corrected various gaps in data and made the accounts more consistent with other economic accounts and international guidelines.

Specific changes include the following:

- The definition of government was changed to recognize government as a producing industry.
- The definitions of commercial banking and insurance were changed to include more services for which explicit fees are not charged.
- The presentation of Indian tribal governments was changed so that they now appear as autonomous governments.
- “Other value added” was replaced by “gross operating surplus” as a measure of proprietors' income, corporate profits, net interest, and business transfer payments.
- “Indirect business taxes” was replaced by “taxes on production and imports less subsidies” as a measure of tax and nontax liabilities that are chargeable to business expenses.

The 2002 benchmark I-O accounts also reflected changes in the North American Industry Classification System (NAICS), which are the I-O accounts' foundation for classifying industries.

## Government as a producer

The 2002 benchmark I-O accounts treat general government as an intermediate industry that produces services available for final consumption. In previous benchmark I-O accounts, government was presented as a final user of capital and current account goods.

The new treatment created two new industries—a general Federal Government services industry and a general state and local government services industry—that appear in the intermediate use portion of the I-O accounts and represent government use of inputs of goods, services, labor, and capital to produce output (services). Intermediate government I-O industry output is equal to gross output of general government, which is the sum of compensation, consumption of fixed capital, and intermediate goods and services purchased less own-account construction, own-account software, and sales to other sectors.<sup>6</sup>

6. Own-account construction refers to new construction activities that are performed by businesses, governments, or persons rather than purchased from construction businesses. Own-account software refers to software production activities performed by businesses or governments, not purchased from software-producing businesses.

Capital account government investment appears in the final demand portion of the I-O table and is a measure of durable goods purchased, including structures and equipment and software. Services that are directly purchased by households, such as college education, are treated as secondary products of the government industry and flow into personal consumption expenditures. If sold to business, these services are treated as intermediate inputs of business. The remaining services are treated as consumption expenditures in government final use and valued at the expense of providing the services.

With this new treatment, the total value of government consumption expenditures and gross investment does not change, because the value of the newly recognized services produced by government equals the cost of inputs. Estimates of government output, purchases, and investment in the benchmark I-O tables equal the estimates made by BEA's Government Division and published in NIPA table 3.10.5, which presents government consumption expenditures and general government gross output.

### **Commercial banking**

The 2002 benchmark I-O accounts changed the treatment of commercial banking output. Previously, the gross output of banks and other depository institutions was calculated as interest received from borrowers less interest paid to depositors. The new treatment recognizes that bank services may be fee-based services or they may be implicit charges resulting in a bank paying a lower interest rate rather than charging a fee for each service. Because banks and other financial intermediaries serve to reduce transactions costs for both depositors and borrowers, the value of the implicit services produced by banks should be allocated to both groups. Incorporating this change reduces GDP by re-allocating a portion of the implicit services from final expenditures to intermediate consumption and attributing the larger share of borrowed funds to business.

### **Insurance**

The 2002 accounts incorporate a new definition of property and casualty insurance services. Previously, insurance services were measured as premiums received less actual incurred losses and less dividends payable by insurance companies to policyholders. The new treatment recognizes the implicit services that are funded by investment income on policyholders' reserves. Under this treatment, industry output is revised so that expected investment income earned on reserves is treated as a supplement to premiums received. In addition, normal losses (expected losses) are now used instead of actual losses to calculate the value of insur-

ance services output. This change reflects the fact that insurance companies base premiums on expected losses instead of actual losses, because actual losses are not known when premiums are set. This change also reduces the effect of catastrophic events on industry output.

### **Indian governments**

The 2002 benchmark I-O accounts recognize tribal governments as autonomous governments and their activities as similar to state and local government enterprises. Previously, the activities of tribal governments—mainly gaming and hotels, fuel stations, and retail sales—were included within private industry output in the I-O accounts. As a result of this new treatment, a new industry was created, Indian gaming, in the I-O accounts. This industry captures the activities of tribal governments and now reports them as a part of state and local government enterprises. Because these activities were previously treated as part of private industry, the combined output for casinos, hotels, retail trade, and motor gasoline was reduced by the value of output of the industry Indian gaming.

### **Gross operating surplus**

The 2002 benchmark I-O accounts recognize "gross operating surplus" as a profits-like measure that includes such items as proprietors' income, corporate profits, net interest, and business transfer payments. In practice, in the benchmark I-O accounts, gross operating surplus is a residual, calculated as gross output less intermediate inputs, employee compensation, and taxes on production and imports less subsidies. Gross operating surplus replaces "other value added" as the profits measure in the I-O accounts.

### **Taxes on production and imports less subsidies**

The 2002 accounts modified the "indirect business tax" component of value added in order to remove tax payments that are not related to corporate profits-type income and to reclassify these payments primarily as transfer payments to government. The portion that remains includes Federal excise taxes and customs duties, state and local sales taxes, property taxes (including residential real estate taxes), motor vehicle licenses, severance taxes, other taxes, and special assessments. This new tax component was renamed "taxes on production and imports less subsidies" (TOPI). TOPI does not include the following: State and local fines and other nontaxes (now called business transfer payments to government), Federal outer continental shelf royalties, and state and local rents and royalties (now called income payments on assets). This

change provides more detail on the makeup of payments by corporations by separating special payments, such as tobacco settlements and payments not dependent on production, from taxes levied according to actual corporate production and imports.

### NAICS changes

The 2002 benchmark I-O accounts reflect the 2002 NAICS, which included major changes from the 1997 NAICS to the classification of industries within NAICS sector 51, information. The sector was restructured, and new industries were created to account for new services and emerging technologies. Internet publishing and broadcasting was moved from 1997 NAICS 511 and 514 into its own industry, 2002 NAICS 5161. This new industry includes electronic publishing by newspapers, periodicals, books, databases, greeting cards, and atlases and maps. “Web search portals” was moved from “other information services” (NAICS 51419), and a new industry, “Internet service providers, Web search portals, and data processing” (NAICS 5180), was created. “On-line information services” was renamed “Internet service providers” to better reflect the activity of the industry.

### Statistical Changes

In addition to classification and definition changes, the 2002 benchmark I-O accounts incorporated statistical changes in three areas: Inventories, royalties, and personal consumption expenditures. These statistical changes to I-O accounts reflect new and improved estimation methodologies and incorporate newly available or revised source data.

### Inventory valuation adjustment

Inventories can be viewed as consumable physical assets that are produced in one period but stored for sale or use in a later period. In the I-O accounts and the NIPAs, change in private inventories includes an inventory valuation adjustment (IVA), which removes the effects of price changes while products are in inventory. Because of the IVA, change in private inventories is valued in current prices, that is, on a replacement-cost basis. In the NIPAs, estimates of IVA by holding industry are based on data from the previous benchmark I-O accounts, changes in product prices, and information on types of inventory accounting methods used (such as LIFO, FIFO, and average cost). The benchmark I-O accounts have traditionally shown the IVA as an aggregate balancing entry in the accounts. The previous benchmark I-O treatment included an IVA commodity and an IVA industry. In the IVA commodity row, the aggregate value for the IVA appeared in the final uses column for inventory

change. In the IVA industry column, it appeared as other value added (which included corporate and non-corporate IVA as two of its subcomponents).

The 2002 benchmark adopted a new treatment that explicitly accounts for the IVA by holding industry, commodity, and inventory type, which includes materials and supplies, work-in-process, finished goods, and merchandise trade inventories. The I-O accounts included IVA in output only where it was appropriate.

### Royalties

BEA improved its measurement of royalties output with new source data and methodology changes. Income from royalties (except copyrighted works) is included in the gross output for the “lessors of nonfinancial intangible assets” industry. Because Economic Census source data for royalty and licensing income and payments are not comprehensive, BEA uses information from the Internal Revenue Service’s Statistics of Income (SOI) corporate income tax return data in measuring income from royalties.<sup>7</sup> However, these data provide income from royalties and copyrights combined.

BEA’s international services data on royalties and licensing fees were used to develop a distribution of payments for the use of U.S. intellectual property by type.<sup>8</sup> This distribution was applied to the SOI corporate royalty data in order to estimate and remove copyright receipts from royalty receipts. Additional adjustments were made to account for royalty income from individuals, partnerships, and fiduciaries.

### Personal consumption expenditures

The 2002 benchmark I-O accounts improved the estimates of personal consumption expenditures (PCE) for telecommunications, air transportation, and “food away from home.” The changes reflect the results of extensive research into new source data and estimation methodologies so that estimates would better reflect changes to household purchasing patterns.

**Telecommunications.** A new methodology was adopted that estimates and redistributes reimbursed expenses of telecommunications services for those who use their personal telephone and/or Internet service for business use when working from home. In previous I-O accounts, consumer spending on telecommunications was based on historical expenditure levels that included within household expenditures, the business use of personal (household) telecommunications services; the business use was not treated as an intermediate expenditure.

7. For more information, go to <[www.irs.gov](http://www.irs.gov)>.

8. See “Table 4. Royalties and License Fees, 1986–2005” at <[www.bea.gov/international/intlserv.htm](http://www.bea.gov/international/intlserv.htm)>.



For the 2002 benchmark I-O accounts, information from the Current Population Survey's Work at Home Supplement and the Federal Communications Commission (FCC) on household expenditures on local, long distance, and cellular telephone services was used to estimate personal telephone service expenditures by workers at home. This estimate was then combined with information from the Consumer Expenditure Survey from the Bureau of Labor Statistics (BLS) to estimate the portion of telephone service expenditures attributable to work activities and reimbursed to the household.<sup>9</sup>

Estimates for reimbursed personal Internet service expenses were derived similarly. Both of these reimbursed expenses for business use were removed from personal consumption expenditures and redistributed as inputs or expenses of intermediate industries.

**Air transportation.** The 2002 benchmark I-O accounts updated the methodology and source data used to prepare PCE estimates for domestic passenger air transportation.

Previous benchmark I-O accounts estimates of PCE for domestic passenger air transportation included only domestic recreational or leisure air travel of U.S. residents. Nonresident travel and personal nonrecreational travel were not included.<sup>10</sup> The 2002 benchmark I-O accounts incorporated nonresident travel data from the U.S. travel and tourism satellite accounts and personal and family business trip activity (nonrecreational) data from the Bureau of Transportation Statistics' 2001 National Household Travel Survey. This resulted in qualitative and quantitative adjustments to include nonresident and nonrecreational domestic air travel within PCE.<sup>11</sup>

As a result, the share of domestic passenger air transportation output that is attributed to households (PCE) increased significantly, which in turn increased GDP. Additionally, the estimates of intermediate consumption by business and government of air travel were reduced, and their value added was increased. The nonresident travel correction was included in the

9. The Current Population Survey is conducted by the Census Bureau for BLS. It provided estimates of the number of wage and salary workers and self-employed workers who worked at home and used a telephone or the Internet. The FCC's *Reference Book of Rates, Price Indices, and Household Expenditures for Telephone Service* provided the average annual household expenditures on local, long distance, and cellular telephone services. The 2002 Consumer Expenditure Survey provided percentages of consumers deducting telephone and Internet services as business expenses and the average annual Internet household expenditures.

10. Personal nonrecreational travel includes trips made for medical purposes, shopping, college visits, and funerals and other family-related emergencies.

11. See "Table 3. Demand for Commodities by Type of Visitor" in Peter D. Kuhbach, Mark A. Planting, and Erich H. Strassner, "U.S. Travel and Tourism Satellite Accounts for 1998–2003," SURVEY 84 (September 2004): 58.

I-O accounts as a rest-of-the-world adjustment.

**Food away from home.** In previous benchmark I-O accounts, the PCE estimates for food and beverages in purchased meals were based on historical household expenditures. The new methodology uses information from the BLS Telephone Point of Purchase Survey combined with the Census Bureau's Economic Census "class-of-customer" data to estimate household expenditures on food and nonalcoholic beverages in purchased meals. The Economic Census class-of-customer data were used to estimate the portion of overall food service industry sales that stem from households and individuals. Households and individuals purchase food and beverages in different ways, sometimes as part of a full service meal or a fast food meal, that reflect different pricing. The Telephone Point of Purchase Survey data were then used to measure the portion of food service industry sales that represent household expenditures at full service and limited service restaurants. The use of these two data sources updated PCE for food and beverages in purchased meals to reflect the differences in pricing and expenditure patterns for food away from home.

### Compilation of the 2002 Benchmark I-O Accounts

The calculation of the benchmark I-O accounts is a complex process that involves the collection and integration of data from a variety of sources.<sup>12</sup> BEA prepared the 2002 benchmark I-O accounts in seven steps:

(1) A consistent classification framework that could be used for presenting the tables on a 2002 NAICS basis and for linking backwards with the aid of concordances was developed.

(2) Output for each industry and commodity, which formed the basis for the I-O make table, was estimated.

(3) Domestic supply of each commodity was estimated.

(4) Final uses of commodities were estimated, either directly or by using the commodity-flow method.

(5) Intermediate and value-added inputs required by each industry to produce its output were estimated.

(6) Wholesale and retail trade margins, transportation costs, and excise and sales taxes were estimated in order to convert all transactions by final and intermediate users from the prices received by producers to the prices paid by purchasers.

(7) The gross operating surplus from the 2002 benchmark I-O accounts was reconciled with the 2002 GDP-by-industry accounts, while simultaneously

12. For more information, see Karen J. Horowitz and Mark A. Planting, *Concepts and Methods of the Input-Output Accounts* on BEA's Web site at <[www.bea.gov/papers/pdf/IOmanual\\_092906.pdf](http://www.bea.gov/papers/pdf/IOmanual_092906.pdf)>.

balancing the benchmark I-O use table.

### Step 1: Classification framework

The classification of industries in the 2002 benchmark I-O accounts was based on the 2002 NAICS. Over the past few years, many statistical agencies, including the Census Bureau, have completed the conversion from Standard Industrial Classification to NAICS, allowing for consistency and comparability between most Federal statistical data. The Harmonized System, the classification system for foreign trade, was used as the basis for foreign trade estimates in the I-O accounts; it was translated into a NAICS basis in order to create consistency across all estimates within the accounts.

### Step 2: Industry and commodity outputs

BEA released a preliminary I-O make table showing industry and commodity output estimates in September 2005.<sup>13</sup> These preliminary estimates were based on early 2002 Economic Census data and Department of Agriculture data on receipts and shipments. Data for all industries were not available at the time; the gross output estimates included some estimates based on extrapolation from annual survey data or estimated using other similar techniques. The industry estimates included in the September 2005 release were revised, based on final Economic Census data.

The output of most commodities and industries was based on receipts and shipments data from the 2002 Economic Census and for agriculture, data from the Department of Agriculture. Output was estimated using various approaches. For example, mining and manufacturing output was measured by shipments. Nonprofit and auxiliary industry output was measured using expenses. Commodities data formed the basis for agriculture output estimates. Receipts less cost of goods sold were used to estimate margin output of wholesale and retail trade. Most other industry output was estimated using receipts. Principal data sources used to estimate commodity and industry output are shown in table A.

While the Economic Census covered the majority of establishments, it did not cover businesses without employees, such as real estate agents and small, independent “mom and pop” businesses. For these entities, estimates were based on administrative records of the IRS, primarily from sole proprietorship businesses filing IRS Form 1040, and compiled as nonemployer data by the Census Bureau. The Census Bureau’s nonemployer data were added to BEA’s output estimates to

ensure complete coverage of all establishments.

The following industries were among those not covered by the Economic Census: Large certificated passenger air transportation and rail transportation, private elementary and secondary schools, and private colleges and universities. For these industries, BEA used data from other sources—such as the Department of Transportation and the Department of Education. These sources are identified in table A. BEA also made imputations for estimates for which data were not available, notably for owner-occupied housing, own-account construction, and own-account software.

Industry output includes all primary and secondary activities. For example, the output for an industry that primarily produced milk and a small amount of butter would be classified within the milk industry. However, at the commodity level, the shipments were separated so the milk commodity included only the production of milk and the butter production was part of the butter commodity.

### Step 3: Domestic supply

The domestic supply of each commodity is the total value of goods and services available for consumption as intermediate inputs by industries or as final uses. Domestic supply represents the value of commodities produced by domestic firms, plus imports and government sales, less exports and changes in inventory. Changes in private inventories by commodity were based on Economic Census data and on information on corporate inventories by industry from the IRS Statistics of Income. Exports and imports were based on foreign trade statistics from the Census Bureau and on data from BEA’s international transactions accounts. Domestic supply was measured in producers’ prices; therefore, transportation costs and wholesale trade margins were removed from exports before the final calculation.

### Step 4: Final uses

Many final demand estimates were created using the commodity-flow method. In many cases, a predominant user of a commodity can be identified and a portion of that commodity can be assigned to flow to a particular final use for purchase by consumers or by business for investment. Class-of-customer data from the Economic Census or information developed from alternative sources—such as trade associations, private businesses, and other government agencies—was used to identify who is purchasing a commodity. For example, using class-of-customer data from the Economic Census, purchases of tax return preparation services for PCE were estimated as 94.4 percent of domestic supply.

13. See Karla L. Stanley-Allen, Nicholas R. Empey, Douglas S. Meade, Stanislaw J. Rzezniak, Mary L. Streitwieser, and Monica S. Stropke, “Preview of the Benchmark Input-Output Accounts for 2002,” *SURVEY 85* (September 2005): 66–77.

The coverage of class-of-customer data may vary from previous benchmark I-O accounts and sometimes adjusted to reflect changes in purchasing patterns. If 2002 information was not available, commodity-flow estimates were carried forward.

**Table A. Principal Data Sources for Industry or Commodity Outputs, 2002 Benchmark I-O Accounts**

Industry or commodity	Source
Agriculture, forestry, fishing and hunting.....	U. S. Department of Agriculture, Forest Service, Economic Research Service and National Agriculture Statistical Service National Oceanic and Atmospheric Administration, National Marine Fisheries Service, <i>Fisheries of the United States</i> Census Bureau, Statistics of United States Businesses
Mining .....	Census Bureau, 2002 Economic Census, NAICS Sector 21, Mining
Utilities .....	Census Bureau, 2002 Economic Census, NAICS Sector 22, Utilities U.S. Department of Energy, Energy Information Administration
Construction.....	Census Bureau, Value of Construction Put In Place Statistics
Manufacturing .....	Census Bureau, 2002 Economic Census, NAICS Sector 31–33, Manufacturing Census Bureau, 2003 Current Industrial Reports
Wholesale trade.....	Census Bureau, 2002 Economic Census, NAICS Sector 42, Wholesale Trade Census Bureau, 2002 Annual Wholesale Trade Survey
Retail trade .....	Census Bureau, 2002 Economic Census, NAICS Sector 44–45, Retail Trade Census Bureau, 2002 Annual Retail Trade Survey
Transportation and warehousing.....	Census Bureau, 2002 Economic Census, NAICS Sector 48–49, Transportation and Warehousing U.S. Department of Transportation: <i>Air Carrier Financial Statistics Quarterly</i> U.S. Department of Transportation, Bureau of Transportation Statistics U.S. Department of Transportation, Surface Transportation Board Alaska Railroad 2003 Annual Report Association of American Railroads, <i>2004 Railroad Facts</i> Amtrak <i>2004 Annual Report</i>
Information.....	Census Bureau, 2002 Economic Census, NAICS Sector 51, Information
Finance, insurance, real estate, rental and leasing .....	Census Bureau, 2002 Economic Census, NAICS Sector 52, Finance and Insurance Census Bureau, 2002 Economic Census, NAICS Sector 53, Real Estate and Rental and Leasing Federal Deposit Insurance Corporation, <i>2003 Statistics on Banking</i> New York Stock Exchange, <i>2002 Annual Report</i> Federal Reserve Board, <i>Flow of Funds Accounts</i> Internal Revenue Service, 2002 Statistics of Income A. M. Best and Company, <i>Bests 2003 Aggregate and Averages, Property/Casualty Insurance</i> Mortgage Insurance Companies of America, <i>2003–2004 Fact Book</i> American Council of Life Insurers, <i>2003 Life Insurance Fact Book</i> Bureau of Economic Analysis, National Income and Product Accounts
Professional and business services.....	Census Bureau, 2002 Economic Census, NAICS Sector 54, Professional, Scientific, and Technical Services Census Bureau, 2002 Economic Census, NAICS Sector 55, Management of Companies and Enterprises Census Bureau, 2002 Economic Census, NAICS Sector 56, Administrative and Support and Waste Management and Remediation Services
Educational services, health care, and social assistance.....	U.S. Department of Education, National Center for Education Statistics, <i>2002 Digest of Education Statistics</i> Census Bureau, 2002 Economic Census, NAICS Sector 61, Educational Services Census Bureau, 2002 Economic Census, NAICS Sector 62, Health Care and Social Assistance
Arts, entertainment, recreation, accommodation, and food services.....	Census Bureau, 2002 Economic Census, NAICS Sector 71, Arts, Entertainment, and Recreation Census Bureau, 2002 Economic Census, NAICS Sector 72, Accommodation and Food Services
Other services, except government .....	Census Bureau, 2002 Economic Census, NAICS Sector 81, Other Services Bureau of Economic Analysis, National Income and Product Accounts
Government .....	Census Bureau, 2002 Census of Governments Census Bureau, 2002 Government Finances Census Bureau, 2002 Public Employment Federal Budget Data and Federal Government Agency Reports Center for Medicare and Medicaid Services Bureau of Economic Analysis, National Income and Product Accounts
Noncomparable imports.....	Bureau of Economic Analysis, International Transactions Accounts
Scrap, used and secondhand goods .....	Census Bureau, 2002 Economic Census, NAICS Sector 31–33, Manufacturing Census Bureau, 2002 Economic Census, NAICS Sector 42, Wholesale Trade Census Bureau, 2002 Economic Census, NAICS Sector 44–45, Retail Trade



If percentage distributions to final users were not precisely known, a modified commodity-flow method was used. In this method, government expenditures for, and intermediate purchases by businesses of, a commodity were subtracted from the commodity domestic supply in order to obtain a residual that reflects purchases by persons for consumption or by business for investment. For example, purchases of cereal for PCE were estimated using this method, with the entire residual value allocated to PCE.

The estimates of final uses of the Federal Government and of state and local governments were based on the estimates of total consumption and investment expenditures by type of purchase from the NIPAs. These estimates were then allocated to I-O commodities based on professional judgment and on information from the 2002 Census of Governments, Federal budget data, and government agency reports.

The estimates of residential and nonresidential structures in gross private fixed investment were generally based on information from Census Bureau data on the value of construction put in place. Estimates of oil and gas well drilling, new access structures for solid mineral development, and manufactured mobile structures were based on 2002 Economic Census data.

### **Step 5: Industry intermediate inputs and value added**

As shown in table B, most of the detailed data available to estimate commodity inputs were from the 2002 Economic Census and the Business Expenses Survey, which included expanded information about industry expenses. In particular, BEA's input estimates were greatly improved because of the inclusion of a catch-all expense category on the Census Bureau reporting forms used by the manufacturing sector for "all other expenses." This expense category allowed for the reporting of all expenses, rather than the limited number of specific expenses available in the past. These data were available in previous benchmark I-O accounts for service industries, but for manufacturing industries, only select expenses data were available.

When only aggregate data for expenses were available, BEA combined that information (for example, purchases of fuel by manufacturing industries) with information on purchases of individual commodities (for example, purchases of petroleum products, natural gas, and coal in purchased fuels) to estimate the purchases of specific commodities by an industry (for example, purchases of natural gas by a manufacturing industry). If BEA did not have direct information for intermediate inputs, estimates were extrapolated from 1997 benchmark I-O accounts relative to the change in industry output from 1997 to 2002.

In the I-O accounts, value added consists of three components—compensation of employees, taxes on production and imports less subsidies, and gross operating surplus. The first two components were estimated from a variety of data sources (table B). Total compensation estimates were based on values reported in the 2002 Economic Census that were scaled to NIPA total compensation. Taxes on production and imports less subsidies data from the NIPAs were distributed to all appropriate industries either using a general distribution or by allocating industry specific taxes to the most correct industry. For general sales and excise taxes, the values were incorporated as part of each industry's output on the basis of information from census annual surveys for sales taxes and from the GDP-by-industry accounts for excise taxes. For other indirect business taxes, such as property taxes, estimates were allocated based on a variety of source data, including state government tax collections and highway statistics. Depreciation, a part of gross operating surplus, was estimated for auxiliaries and government industries.

### **Step 6: Transportation costs, trade margins, and excise and sales taxes**

To estimate the cost of transporting commodities from producers to users, BEA first estimated all transportation services bought and sold in the economy by mode—that is, by rail, truck, water, air, and pipeline. Total transportation receipts for each mode were then separated into receipts from travel by persons, such as household consumers' purchases of airline services for vacation travel, and from receipts from the transport of goods, such as mining operators shipping coal by rail. The receipts for moving goods were allocated to commodities by mode: For rail, the allocation was based on information from the American Association of Railroads; for air, from the Department of Transportation; and for all other modes, from the Census Bureau's 2002 Commodity-Flow Survey. For transportation margins on pipeline transmissions, BEA used data directly from the 2002 Economic Census.

The estimates of wholesale and retail trade margins were based on sales data from the 2002 Economic Census supplemented by information from the 2002 Annual Trade Survey and the 2002 Annual Retail Trade Survey. Margin output was then allocated to commodities using information on sales for major commodity lines by type of business (for example, sales of kitchen appliances by household appliance stores) from the Economic Census. The estimates of sales and excise taxes were based on information from Census Bureau annual trade surveys and from the NIPAs.

**Step 7: Reconciling gross operating surplus and final balancing**

The final step was to balance the benchmark I-O use table. The output of each commodity (row) in the use table must equal the sum of the transactions for that commodity, and the output of each industry (column) in the table must equal the sum of input transactions, including value added, for that industry. In practice, the estimates often result in various discrepancies that require adjustments.

This balancing was achieved via a new process designed to reconcile the gross operating surplus esti-

mates in the 2002 benchmark I-O accounts with the gross operating surplus estimates in the 2002 GDP-by-industry accounts.<sup>14</sup> The reconciliation produced a balanced benchmark I-O use table and improved the intermediate inputs and the gross operating surplus estimates.

The new reconciliation and balancing model is con-

14. The annual I-O accounts and the GDP-by-industry accounts were integrated in 2004; see Brian C. Moyer, Mark A. Planting, Paul V. Kern, and Abigail M. Kish, "Improved Annual Industry Accounts for 1998–2003: Integrated Annual Input-Output Accounts and Cross-Domestic-Product-by-Industry Accounts," SURVEY 84 (June 2004): 21–57.

**Table B. Principal Data Sources and Methods for Estimating Intermediate Inputs and Value-Added, 2002 Benchmark I-O Accounts**

Input component	Source data and methods used
<b>Intermediate inputs</b> .....	<p><b>Agriculture, forestry, fishing and hunting</b> Inputs to the agriculture, forestry, fishing and hunting industries were estimated from U.S. Department of Agriculture's 2002 Census of Agriculture or by extrapolating 1997 benchmark I-O estimates. These estimates were adjusted during the process of balancing commodity purchases across industries with commodity output totals.</p> <p><b>Mining</b> Inputs to the mining industries were estimated primarily from the 2002 Economic Census' mining sector reports. Detailed cost data on accounting, auditing, and bookkeeping services; advertising and promotional expenses; communication services; legal services; purchased electricity; purchased fuels consumed; rental payments for buildings and other structures; rental payments for machinery and equipment; supplies used and minerals received; and all other operating expenses were used to estimate intermediate inputs. Inputs were also extrapolated using the 1997 benchmark I-O estimates. Estimates were adjusted during the process of balancing commodity purchases across industries with commodity output totals.</p> <p><b>Construction</b> Inputs to the construction industries were estimated primarily from 2002 Economic Census construction data.</p> <p><b>Manufacturing</b> Inputs to the manufacturing industries were estimated primarily from the 2002 Economic Census' manufacturing sector reports. Detailed cost data on accounting, auditing, and bookkeeping services; advertising and promotional services; communication services; legal services; management consulting and administrative services; materials, parts, containers, packaging, etc., used; purchased computer services; purchased electricity; purchased fuels; refuse removal services; rental payments for buildings and other structures; rental payments for machinery and equipment; repair and maintenance services of buildings and/or machinery; and all other operating expenses were used to estimate intermediate inputs. Inputs were also extrapolated using the 1997 benchmark I-O estimates. Estimates were adjusted during the process of balancing commodity purchases across industries with commodity output totals.</p> <p><b>Services, trade, transportation and warehousing, and utilities</b> For selected census-covered industries, information from the 2002 Business Expenses Survey (BES) on operating expenses was used, including accounting services; advertising services; communication services; contract labor costs; data processing and other computer related services; insurance costs; lease and rental payments; legal services; management consulting and other professional services; packaging and container costs; printing services; repair and maintenance services; transportation, shipping and warehousing services; cost of utilities; and other operating expenses. Estimates were adjusted during the process of balancing commodity purchases across industries with commodity output totals. For noncensus-covered industries, inputs were estimated from trade association data or by extrapolating 1997 benchmark I-O estimates by the change in industry output from 1997 to 2002. Estimates were adjusted during the process of balancing commodity purchases across industries with commodity output totals.</p>
<b>Value-added:</b>	<p><b>Compensation of employees</b>..... For census-covered industries, payroll data from the 2002 Economic Censuses were used; data were adjusted for misreporting and I-O industry definitions. Benefits data for manufacturing and mining were from the 2002 Economic Census. Benefits data for industries covered by the BES were based on the relationship between the BES benefits and payroll data applied to the 2002 Economic Census payroll data. For the remaining industries, benefits were estimated using indirect techniques. For noncensus-covered industries, tabulations of wages and salaries covered by state unemployment insurance and estimates of benefits from the national income and product accounts were used; data were adjusted for misreporting and I-O industry definitions. All estimates were adjusted to balance to total compensation in the national income and product accounts.</p> <p><b>Taxes on production and imports less subsidies</b>..... The estimates by industry were prepared in two parts: For excise and general sales taxes, the values were estimated as part of each industry's output; for other taxes, assessments and license fees, the estimates were distributed on the basis of a variety of source data, including state government tax collections statistics and the BES. For all other tax liabilities, estimates were distributed to industries using indirect techniques. All estimates were adjusted to balance to total taxes on production and imports, less subsidies in the national income and product accounts.</p> <p><b>Gross operating surplus</b>..... For most industries, the residual method (total industry output less total intermediate inputs, compensation of employees, and taxes on production and imports, less subsidies) was used.</p>

sidered a milestone in the development of the BEA industry accounts; BEA has made integration of these accounts a priority. A full discussion of the new process will be published in an upcoming issue of the SURVEY OF CURRENT BUSINESS. In addition to enhanced transparency and flexibility, the new reconciliation and balancing framework has two notable advantages over past models. First, the model is built on a firm statistical foundation in which adjustments reflect the relative reliability of the initial estimates. Second, the least squares framework ensures that adjustments made to initial estimates are as small as possible and still satisfy the accounting constraints of the model.

### Technical Note The 2002 Benchmark I-O Accounts Tables

The 2002 benchmark I-O accounts include standard make and use tables and several supplementary tables. The supplementary tables consist of make and use tables based on the standard tables, four requirements tables, and bridge tables.

#### Standard tables

The standard make and use tables are based on the 2002 NAICS. For the purpose of data collection, an establishment or a business unit is assigned to an industry according to its output and production process. However, most establishments produce more than one product, so the establishment is categorized by its primary source of revenue or its primary product. The other products that the establishment produces are identified as secondary products. For example, a hotel may also provide restaurant services, but these services are not part of the hotel industry's primary product of lodging, so they are treated as a secondary product of the hotel industry. The standard make and use tables are constructed before the redefinition of selected secondary products; all of the products—primary and secondary—that are produced by an industry are assigned to that industry. As a result, the data in these tables are consistent with GDP-by-industry accounts, the gross-domestic-product-by-state accounts, and with other industry data reported by other statistical agencies on a NAICS basis.

**Table 1, standard make table.** The standard make table is a matrix that shows the value in producers' prices of each commodity produced by each industry (see the schematic in the upper panel of chart 1 and estimates in table C). In the matrix, commodities are presented in the columns, and industries are presented in the rows. The entries in a row represent the dollar value of commodities produced by an industry. The entries in a column represent the value of the production by each industry of a commodity. The diagonal

cell in each row (a shaded cell in chart 1) shows the value of production of the commodity for which the industry has been designated the "primary" producer. Any entries in the other cells in the row show the value of production of commodities for which other industries are the primary producers (and for which the given industry is a "secondary" producer). The row total in the make table is total industry output, and the column total is total commodity output. As indicated by the shading in chart 1, the row totals of the make table equal the column totals of the use table, and the column totals of the make table equal the row totals of the use table.

**Table 2, standard use table.** The standard use table is a matrix that shows the commodities consumed, or used, by each industry and final consumer (see the schematic in the lower panel of chart 1 and estimates in table D). The entries in a row represent the dollar value of the use by each industry of a commodity and of the sales of the commodity to final uses. The industry uses add up to total intermediate use (the far right column of the industries' portion in chart 1). The final uses sum to GDP (the far right column of the final uses' portion in chart 1). The entries in a column represent the value of the commodities—that is, of raw materials, semi finished products, and services—used and the value added that is generated in production by an industry. The row total (total commodity output) is the production of the commodity (regardless of which industry contributed to that production), and the column total (total industry output) is the production of the industry (regardless of what commodity was produced).

#### Supplementary tables

The supplementary make and use tables are based on the standard make and use tables. In the supplementary make and use tables, some of the secondary products are reassigned to the industries in which these products are primary products. The estimates in the supplementary make and use tables are used to calculate four requirements tables—commodity-by-industry direct requirements, commodity-by-commodity total requirements, industry-by-commodity total requirements, and industry-by-industry total requirements—that quantify the direct and indirect effects of changes in final demand on the economy. The data in the supplementary make and use tables and in the total requirements tables that are derived from them are valuable for performing economic structural analysis, impact analysis, and other types of economic modeling because they show the interdependence among the producers and consumers in the economy. Using these tables, analysts can estimate the direct and indirect

Chart 1. The Input-Output Accounts

MAKE TABLE: INDUSTRIES PRODUCING COMMODITIES

	COMMODITIES <sup>1</sup>										TOTAL COMMODITY OUTPUT						
	Agriculture, forestry, fishing and hunting	Mining	Utilities	Construction	Manufacturing	Wholesale trade	Retail trade	Transportation and warehousing	Information	Finance, insurance, real estate, rental, and leasing		Professional services	Educational services, health care, and social assistance	Arts, entertainment, recreation, accommodation, and food services	Other services, except government	Government	Scrap, used and secondhand goods
Agriculture, forestry, fishing and hunting	■																
Mining		■															
Utilities			■														
Construction				■													
Manufacturing					■												
Wholesale trade						■											
Retail trade							■										
Transportation and warehousing								■									
Information									■								
Finance, insurance, real estate, rental, and leasing										■							
Professional and business services											■						
Educational services, health care, and social assistance												■					
Arts, entertainment, recreation, accommodation, and food services													■				
Other services, except government														■			
Government															■		
TOTAL COMMODITY OUTPUT																	

USE TABLE: COMMODITIES USED BY INDUSTRIES AND FINAL USES

	INDUSTRIES <sup>1</sup>															FINAL USES (GDP)					TOTAL INDUSTRY OUTPUT		
	Agriculture, forestry, fishing and hunting	Mining	Utilities	Construction	Manufacturing	Wholesale trade	Retail trade	Transportation and warehousing	Information	Finance, insurance, real estate, rental, and leasing	Professional services	Educational services, health care, and social assistance	Arts, entertainment, recreation, accommodation, and food services	Other services, except government	Government	Imports of goods and services	Exports of goods and services	Change in inventories	Private investment	Government consumption and investment		TOTAL COMMODITY OUTPUT	
Agriculture, forestry, fishing and hunting	■																						
Mining		■																					
Utilities			■																				
Construction				■																			
Manufacturing					■																		
Wholesale trade						■																	
Retail trade							■																
Transportation and warehousing								■															
Information									■														
Finance, insurance, real estate, rental, and leasing										■													
Professional and business services											■												
Educational services, health care, and social assistance												■											
Arts, entertainment, recreation, accommodation, and food services													■										
Other services, except government														■									
Government																							
Imports of goods and services																■							
Exports of goods and services																	■						
Change in inventories																		■					
Private investment																			■				
Government consumption and investment																				■			
TOTAL COMMODITY OUTPUT																							

■ TOTAL COMMODITY OUTPUT  
 ■ TOTAL INDUSTRY OUTPUT  
 ■ PRIMARY PRODUCT OF THE INDUSTRY

1. The 2002 benchmark input-output (I-O) accounts use two classification systems, one for industries and another for commodities, but both generally use the same I-O numbers and titles based on NAICS.

2. "Other inputs" includes noncomparable imports, and rest-of-the-world adjustments.

3. "Gross operating surplus" consists of the following national income and product accounts components of gross domestic income: Consumption of fixed capital, net interest, proprietors' income, corporate profits, rental income of persons, business transfer payments, and subsidies less current surplus of government enterprises; in the I-O accounts, it is calculated as a residual after subtracting intermediate inputs, compensation of employees, and taxes on production and imports, less subsidies from industry output.

effects of changes in final uses on industries and commodities. For example, these tables can be used to determine the economic impact of a disaster or to compute the effect on output of a shift in demand from domestic to imported goods.

**Tables 3 and 4, supplementary make and use tables (after redefinitions).** In traditional I-O analysis, industries are required to have homogeneous production processes: Each industry produces only one commodity, and each commodity is produced by only one industry. Thus, secondary products present a special problem because they represent heterogeneity in an industry's output. In order to transform the make and use tables into the required format, assumptions about the technology of producing secondary products are needed. The two most commonly used technology assumptions are the industry-technology assumption and the commodity-technology assumption.

BEA developed a two-step process to reassign the secondary products from the industry in which they were produced to the industries in which these products are primary products.<sup>15</sup> The first step is the "redefinition process." In this step, it is assumed (1) that the input structure of a secondary product differs from the

input structure of the primary product of the industry in which the secondary product was produced and (2) that the input structure of a secondary product is similar to that of the primary product of the industry to which it is reassigned.<sup>16</sup> As a result of the redefinition process, the total value of secondary products is decreased, and the total value of primary products is increased, by the same amount. Redefinitions affect numerous industries within the I-O accounts, most notably wholesale trade, retail trade, and accommodations and food services.

The second step refers to "reclassifications and other secondary products."<sup>17</sup> In this step, the remaining secondary products are reassigned so that each industry produces only its primary product. This step also assumes that the input structure of each secondary product is the same as, or similar to, that of the primary product that the industry produces.<sup>18</sup> For example, newspapers are treated as the primary product of the newspaper industry, while advertising is treated as the primary product of the advertising industry. Newspaper advertising is treated as a secondary product of the newspaper industry, since the same input structure is

15. See Jiemin Guo, Ann M. Lawson, and Mark A. Planting, "From Make-Use to Symmetric I-O Tables: An Assessment of Alternative Technology Assumptions" (paper presented at the 14th International Conference on Input-Output Techniques, Montreal, Canada, October 10–15, 2002, sponsored by the International Input-Output Association) for the detailed procedures and technology assumptions used for secondary products in the preparation of benchmark I-O tables.

16. This step is based on the commodity-technology assumption, which assumes that each commodity has an input structure that is independent of the industry that produced it.

17. For more information, see *Concepts and Methods of the Input-Output Accounts* on BEA's Web site.

18. This step is based on the industry-technology assumption, which assumes that the input structure of all the commodities produced by an industry is the same.

**Table C. The Make of Commodities by Industries before Redefinitions, 2002**

(Millions of dollars at producers' prices)

Industry/Commodity	Commodities															Total industry output	
	Agriculture, forestry, fishing and hunting	Mining	Utilities	Construction	Manufacturing	Wholesale trade	Retail trade	Transportation and warehousing	Information	Finance, insurance, real estate, rental, and leasing	Professional and business services	Educational services, health care, and social assistance	Arts, entertainment, recreation, accommodation, and food services	Other services, except government	Government		Scrap, used and second-hand goods
Agriculture, forestry, fishing and hunting.....	269,262				42								1,243				270,548
Mining.....	168,826			60	15,367	106					161						184,520
Utilities.....	33	314,459		1,961			21	290			641				961		318,367
Construction.....				967,588													967,588
Manufacturing.....		807	63	1,840	3,770,270	38,722					36,507			90		2,204	3,850,503
Wholesale trade.....	390			185	4,379	829,992			407	7,887	13,447	21		27,815			884,521
Retail trade.....				901	9,802		879,480	2,227		10,775	3,262	489	19,738	85,803			1,012,476
Transportation and warehousing.....	5		181	4,448		271	469	587,905		299	2,427	68	4	462			596,538
Information.....				1,168			1,974	1,229	772,278	2,022	175,692	925	85	14			955,387
Finance, insurance, real estate, rental, and leasing.....				34,637		140	2,254	21		3,490,882	9,823		56	558			3,538,373
Professional and business services.....		46		271		1	5,137		4,477	1,029	1,982,973	550		3,523		422	1,998,428
Educational services, health care, and social assistance.....				1,715			7,986			2,109	4,314	1,266,102	10,549	16			1,292,791
Arts, entertainment, recreation, accommodation, and food services.....				1,735			5,901		35	8,949	3,800	2,002	683,916	505		66	706,909
Other services, except government.....				668		322	2,843			335	2,024	9	3,091	447,485			456,778
Government.....	2,156	356	71,890	15,185	2,781	2,976	2,976	16,158	2,622	24,482	28,341	179,453	41,787	2,218	1,753,381	2,523	2,146,307
<b>Total commodity output.....</b>	<b>271,812</b>	<b>170,068</b>	<b>386,593</b>	<b>1,032,363</b>	<b>3,802,641</b>	<b>871,529</b>	<b>908,295</b>	<b>607,007</b>	<b>779,412</b>	<b>3,548,769</b>	<b>2,263,411</b>	<b>1,449,620</b>	<b>760,469</b>	<b>568,489</b>	<b>1,754,342</b>	<b>5,215</b>	<b>19,180,034</b>

NOTE: Detail may not add to total due to rounding.

used in production, and is reclassified to the advertising commodity. This step is performed by the mathematical equations that are used to derive the three total requirements tables.<sup>19</sup> The reclassification process also affects a wide range of industries, including state and local government enterprises, manufacturing, “news-

19. For information about deriving the total requirements tables and traditional I-O tables, see *Handbook of Input-Output Table, Compilation and Analysis* (New York: United Nations, 1999).

paper, book, and directory publishers,” “radio and television broadcasting,” and finance.

**Table 5, commodity-by-industry direct requirements table.** This table is derived from the use table by relating commodity input for an industry to the industry’s output. The values in the table, referred to as the “direct requirements coefficients,” show the amount of a commodity required by the industry to produce a dollar of the industry’s output.

**Table D. The Use of Commodities by Industries Before Redefinitions, 2002**

(Millions of dollars at producers’ prices)

Commodity/Industry	Industries											
	Agriculture, forestry, fishing and hunting	Mining	Utilities	Construction	Manufacturing	Wholesale trade	Retail trade	Transportation and warehousing	Information	Finance, insurance, real estate, rental, and leasing	Professional and business services	Educational services, health care, and social assistance
Agriculture, forestry, fishing and hunting.....	72,028	361	.....	2,665	145,447	254	1,738	19	.....	1,433	738	275
Mining.....	703	8,611	61,790	8,541	140,715	84	81	1,189	264	1,357	441	299
Utilities.....	6,328	5,466	377	4,340	70,011	5,319	14,295	4,152	4,969	20,669	9,269	17,912
Construction.....	1,168	6,621	7,234	672	12,191	1,093	3,040	4,508	5,320	55,738	4,985	2,673
Manufacturing.....	40,494	17,120	8,463	232,213	1,337,307	41,001	62,197	65,536	54,393	56,852	69,117	111,888
Wholesale trade.....	10,469	2,584	1,349	27,203	191,839	28,144	15,040	8,456	7,033	12,945	8,775	18,860
Retail trade.....	227	434	61	46,778	9,155	848	2,488	2,409	188	8,801	944	2,268
Transportation and warehousing.....	6,873	3,696	22,505	16,435	88,482	28,448	28,967	69,044	12,229	13,518	23,677	10,532
Information.....	383	593	1,107	8,524	31,982	8,561	11,468	6,439	131,341	29,372	53,650	18,821
Finance, insurance, real estate, rental, and leasing.....	29,994	23,413	8,696	34,707	91,028	44,753	95,289	48,684	51,805	668,345	149,840	142,576
Professional and business services.....	4,114	22,018	14,470	84,141	383,802	102,447	91,382	58,776	114,083	210,443	287,573	125,587
Educational services, health care, and social assistance.....	1,026	1	129	39	84	427	2,037	65	403	73	491	20,937
Arts, entertainment, recreation, accommodation, and food services.....	315	238	3,910	3,178	17,024	4,471	5,637	5,211	19,513	24,307	41,963	13,717
Other services, except government.....	1,266	373	727	15,050	20,017	6,725	7,514	5,826	7,995	27,516	21,908	12,985
Government.....	70	13	269	53	2,335	7,303	6,889	13,010	3,724	6,516	6,228	7,233
Scrap, used and secondhand goods.....	-14	24	54	88	11,838	2	604	1,045	77	-784	510	87
Other inputs <sup>1</sup> .....	97	971	489	267	17,032	7,388	486	16,130	11,214	21,343	8,489	32
<b>Total intermediate inputs.....</b>	<b>175,541</b>	<b>92,537</b>	<b>131,630</b>	<b>484,890</b>	<b>2,570,286</b>	<b>287,266</b>	<b>349,151</b>	<b>310,499</b>	<b>424,550</b>	<b>1,158,443</b>	<b>688,597</b>	<b>506,681</b>
Compensation of employees.....	31,838	28,686	56,976	368,239	764,996	323,241	376,391	202,720	246,334	546,756	948,554	655,656
Taxes on production and imports, less subsidies.....	-3,239	13,532	36,177	5,387	32,554	142,855	133,421	12,527	40,420	225,834	24,532	11,530
Gross operating surplus.....	66,407	49,766	93,585	109,073	482,666	131,159	153,513	70,793	244,084	1,607,339	336,746	118,924
<b>Total value added.....</b>	<b>95,006</b>	<b>91,983</b>	<b>186,737</b>	<b>482,698</b>	<b>1,280,217</b>	<b>597,255</b>	<b>663,325</b>	<b>286,039</b>	<b>530,837</b>	<b>2,379,929</b>	<b>1,309,832</b>	<b>786,110</b>
<b>Total industry output.....</b>	<b>270,548</b>	<b>184,520</b>	<b>318,367</b>	<b>967,588</b>	<b>3,850,503</b>	<b>884,521</b>	<b>1,012,476</b>	<b>596,538</b>	<b>955,387</b>	<b>3,538,373</b>	<b>1,998,428</b>	<b>1,292,791</b>

Commodity/Industry	Industries				Total intermediate use	Final uses (GDP)						Total final uses (GDP)	Total commodity output
	Arts, entertainment, recreation, accommodation, and food services	Other services, except government	Government	Personal consumption expenditures		Private fixed investment	Change in private inventories	Exports of goods and services	Imports of goods and services	Government consumption expenditures and gross investment			
Agriculture, forestry, fishing and hunting.....	4,180	95	1,689	<b>230,923</b>	48,655	.....	-3,756	20,976	-24,985	.....	<b>40,890</b>	<b>271,812</b>	
Mining.....	342	178	7,910	<b>232,504</b>	118	30,444	-2,782	3,768	-93,985	.....	<b>-62,437</b>	<b>170,068</b>	
Utilities.....	16,646	5,332	30,877	<b>215,963</b>	171,307	.....	.....	524	-1,201	.....	<b>170,630</b>	<b>386,593</b>	
Construction.....	2,768	2,646	42,488	<b>153,144</b>	.....	662,526	.....	66	.....	216,628	<b>879,220</b>	<b>1,032,363</b>	
Manufacturing.....	76,968	36,368	200,102	<b>2,410,018</b>	1,248,059	565,745	13,781	495,415	-1,014,741	84,364	<b>1,392,623</b>	<b>3,802,641</b>	
Wholesale trade.....	13,228	5,899	29,370	<b>381,193</b>	303,995	86,312	2,288	68,164	19,917	9,659	<b>490,335</b>	<b>871,529</b>	
Retail trade.....	1,964	4,854	281	<b>81,700</b>	789,492	37,103	.....	.....	.....	.....	<b>826,596</b>	<b>908,295</b>	
Transportation and warehousing.....	8,007	7,092	37,724	<b>377,229</b>	161,939	19,460	208	58,334	-12,102	1,939	<b>229,778</b>	<b>607,007</b>	
Information.....	8,702	9,697	58,598	<b>379,236</b>	311,503	59,242	-206	26,305	-3,598	6,929	<b>400,176</b>	<b>779,412</b>	
Finance, insurance, real estate, rental, and leasing.....	55,647	72,769	61,562	<b>1,579,109</b>	1,845,787	70,858	.....	80,158	-27,142	.....	<b>1,969,660</b>	<b>3,548,769</b>	
Professional and business services.....	80,885	42,351	251,866	<b>1,873,936</b>	160,652	159,572	.....	56,852	-8,970	21,370	<b>389,476</b>	<b>2,263,411</b>	
Educational services, health care, and social assistance.....	405	1,687	17,795	<b>45,597</b>	1,403,815	.....	.....	703	-495	.....	<b>1,404,023</b>	<b>1,449,620</b>	
Arts, entertainment, recreation, accommodation, and food services.....	19,458	6,356	23,426	<b>188,723</b>	571,253	.....	.....	603	-110	.....	<b>571,746</b>	<b>760,469</b>	
Other services, except government.....	8,041	5,986	26,492	<b>168,422</b>	401,798	.....	.....	141	-1,872	.....	<b>400,067</b>	<b>568,489</b>	
Government.....	7,601	2,445	9,833	<b>73,520</b>	47,774	.....	.....	238	.....	1,632,810	<b>1,680,822</b>	<b>1,754,342</b>	
Scrap, used and secondhand goods.....	328	1,911	-3	<b>15,766</b>	68,346	-85,528	4,142	7,692	-8,041	2,838	<b>-10,551</b>	<b>5,215</b>	
Other inputs <sup>1</sup> .....	388	55	16,774	<b>101,155</b>	-35,665	2,758	.....	89,812	-158,060	.....	<b>-101,155</b>	.....	
<b>Total intermediate inputs.....</b>	<b>305,559</b>	<b>205,720</b>	<b>816,785</b>	<b>8,508,135</b>	.....	.....	.....	.....	.....	.....	.....	.....	
Compensation of employees.....	255,379	156,243	1,134,622	<b>6,096,629</b>	.....	.....	.....	.....	.....	.....	.....	.....	
Taxes on production and imports, less subsidies.....	50,273	10,949	-12,393	<b>724,358</b>	.....	.....	.....	.....	.....	.....	.....	.....	
Gross operating surplus.....	95,699	83,666	207,294	<b>3,850,912</b>	.....	.....	.....	.....	.....	.....	.....	.....	
<b>Total value added.....</b>	<b>401,351</b>	<b>251,058</b>	<b>1,329,522</b>	.....	.....	.....	.....	.....	.....	.....	<b>10,671,899</b>	.....	
<b>Total industry output.....</b>	<b>706,909</b>	<b>456,778</b>	<b>2,146,307</b>	.....	<b>7,498,829</b>	<b>1,608,492</b>	<b>13,675</b>	<b>909,752</b>	<b>-1,335,385</b>	<b>1,976,536</b>	.....	<b>19,180,034</b>	

1. Includes noncomparable imports and rest-of-the-world adjustments.

NOTE: Detail may not add to total due to rounding.



**Table 6, commodity-by-commodity total requirements table.** This table is derived from both the make and use tables. The values in the table, referred to as “commodity-by-commodity total requirements coefficients,” show the production required both directly and indirectly of the commodity at the beginning of each row per dollar of delivery to final use of the commodity at the top of the column.

**Table 7, industry-by-commodity total requirements table.** This table is derived from both the make and use tables. The values in the table, referred to as “industry-by-commodity total requirements coefficients,” show the production required directly and indirectly from the industry at the beginning of the row per dollar of delivery to final use of the commodity at the top of the column.

**Table 8, the industry-by-industry total requirements table.** This table is also derived from both the make and use tables. The values in the table, referred to as “industry-by-industry total requirements coefficients,” show the production required directly and indirectly from the industry at the beginning of the row per dollar of delivery to final use by the industry at the top of the column.

**Bridge tables.** Three additional supplementary tables serve as bridges between the I-O estimates and NIPA estimates. The first bridge table (appendix C) covers the I-O commodity composition of NIPA personal consumption expenditures. The second table (appendix D) covers the I-O commodity composition of NIPA private equipment and software expenditures. The third table (appendix E) reconciles the I-O estimates of exports and imports with those in the NIPAs.

The commodity composition tables are necessary because the valuations and definitions used in the I-O accounts differ from those used in the NIPAs. In the I-O accounts, the final use categories are expressed in producers’ prices; in the NIPAs, final demand categories are expressed in purchasers’ prices, except for merchandise imports where the value at the foreign port is used. Also, the definitions of the export and import components of I-O final use categories differ from

those of the NIPA final demand categories mainly because the I-O data are adjusted to account for goods that are returned to the country that originally exported it. Before the I-O total requirements tables can be used to analyze changes in commodity or industry output requirements that result from changes in the level or composition of NIPA final demand, the NIPA final demand categories must be converted to the I-O final use categories; that is, the analysis should be consistent with I-O final use commodities that are valued at producers’ prices for the I-O year and include separate entries for transportation costs and trade margins.

Some adjustments are necessary in order to reconcile the I-O estimates of exports and imports of goods and services with those in the NIPAs. In the NIPAs, unlike in the I-O accounts, imports include the U.S. merchandise that is returned to the United States from other countries, and exports include the foreign merchandise that is reexported from the United States to other countries. The same adjustments are made for both exports and imports, so total GDP is not affected.

### **New personal consumption expenditures classification system**

The 2002 benchmark input-output accounts have incorporated a new classification structure for personal consumption final uses that classifies commodities according to function and type of product. The purpose of the new classification is to incorporate changes that reflect shifts in consumer buying patterns related to changing incomes, changing demographics, technological innovations, changing tastes and preferences, new government programs, and legislative changes.

This change was made in conjunction with the NIPAs and takes into consideration guidelines of the System of National Accounts (SNA). Under the new PCE classification system, there are numerous changes to commodities and commodity categories, and the aggregation structure is changed for each classification type. However, there is no change in the total level of PCE. For more information, see appendix C.

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Appendix A. Industries in the 2002 Benchmark Input-Output Accounts—Continues

I-O industry code and title	Related 2002 NAICS codes	I-O industry code and title	Related 2002 NAICS codes
<b>AGRICULTURE, FORESTRY, FISHING AND HUNTING</b>			
<b>1110 Crop production</b>		311520 Ice cream and frozen dessert manufacturing.....	311520
1111A0 Oilseed farming .....	11111-2	31161A Animal (except poultry) slaughtering, rendering, and processing.....	311611-3
1111B0 Grain farming.....	11113-6, 11119	311615 Poultry processing.....	311615
111200 Vegetable and melon farming .....	11112	311700 Seafood product preparation and packaging .....	3117
1113A0 Fruit farming.....	11131-2, 111331-4, 111336*, 111339	311810 Bread and bakery product manufacturing .....	31181
111335 Tree nut farming .....	111335, 111336*	311820 Cookie, cracker, and pasta manufacturing .....	31182
111400 Greenhouse, nursery, and floriculture production .....	1114	311830 Tortilla manufacturing .....	31183
111910 Tobacco farming.....	11191	311910 Snack food manufacturing.....	31191
111920 Cotton farming .....	11192	311920 Coffee and tea manufacturing.....	31192
1119A0 Sugarcane and sugar beet farming .....	11193, 111991	311930 Flavoring syrup and concentrate manufacturing .....	31193
1119B0 All other crop farming .....	11194, 111992, 111998	311940 Seasoning and dressing manufacturing.....	31194
		311990 All other food manufacturing .....	31199
<b>1120 Animal production</b>		<b>3121 Beverage manufacturing</b>	
1121A0 Cattle ranching and farming .....	11211, 11213	312110 Soft drink and ice manufacturing.....	31211
112120 Dairy cattle and milk production .....	11212	312120 Breweries.....	31212
112A00 Animal production, except cattle and poultry and eggs .....	1122, 1124-5, 1129	312130 Wineries.....	31213
112300 Poultry and egg production .....	1123	312140 Distilleries.....	31214
<b>1130 Forestry and logging</b>		<b>3122 Tobacco manufacturing</b>	
113A00 Forest nurseries, forest products, and timber tracts .....	1131-2	3122A0 Tobacco product manufacturing.....	3122
113300 Logging .....	1133	<b>3130 Textile mills</b>	
<b>1140 Fishing, hunting and trapping</b>		313100 Fiber, yarn, and thread mills.....	3131
114100 Fishing .....	1141	313210 Broadwoven fabric mills .....	31321
114200 Hunting and trapping .....	1142	313220 Narrow fabric mills and schiffli machine embroidery .....	31322
<b>1150 Support activities for agriculture and forestry</b>		313230 Nonwoven fabric mills .....	31323
115000 Support activities for agriculture and forestry.....	115	313240 Knit fabric mills .....	31324
		313310 Textile and fabric finishing mills .....	31331
		313320 Fabric coating mills.....	31332
<b>MINING</b>			
<b>2110 Oil and gas extraction</b>		<b>3140 Textile product mills</b>	
211000 Oil and gas extraction .....	211	314110 Carpet and rug mills.....	31411
<b>2121 Coal mining</b>		314120 Curtain and linen mills.....	31412
212100 Coal mining .....	2121	314910 Textile bag and canvas mills .....	31491
<b>2122 Metal ores mining</b>		314990 All other textile product mills .....	31499
212210 Iron ore mining .....	21221	<b>3150 Apparel manufacturing</b>	
2122A0 Gold, silver, and other metal ore mining .....	21222, 21229	315100 Apparel knitting mills .....	31511, 31519
212230 Copper, nickel, lead, and zinc mining .....	21223	315210 Cut and sew apparel contractors .....	31521
<b>2123 Nonmetallic mineral mining and quarrying</b>		315220 Men's and boys' cut and sew apparel manufacturing.....	31522
212310 Stone mining and quarrying.....	21231	315230 Women's and girls' cut and sew apparel manufacturing .....	31523
212320 Sand, gravel, clay, and ceramic and refractory minerals mining and quarrying .....	21232	315290 Other cut and sew apparel manufacturing .....	31529
212390 Other nonmetallic mineral mining and quarrying .....	21239	315900 Apparel accessories and other apparel manufacturing.....	3159
<b>2130 Support activities for mining</b>		<b>3160 Leather and allied product manufacturing</b>	
213111 Drilling oil and gas wells.....	213111	316100 Leather and hide tanning and finishing.....	3161
213112 Support activities for oil and gas operations .....	213112	316200 Footwear manufacturing.....	3162
21311A Support activities for other mining .....	213113-5	316900 Other leather and allied product manufacturing .....	3169
<b>UTILITIES</b>			
<b>2211 Electric power generation, transmission, and distribution</b>		<b>3210 Wood product manufacturing</b>	
221100 Electric power generation, transmission, and distribution .....	2211	321100 Sawmills and wood preservation.....	3211
<b>2212 Natural gas distribution</b>		32121A Veneer and plywood manufacturing.....	321211-2
221200 Natural gas distribution .....	2212	32121B Engineered wood member and truss manufacturing .....	321213-4
<b>2213 Water, sewage and other systems</b>		321219 Reconstituted wood product manufacturing .....	321219
221300 Water, sewage and other systems .....	2213	321910 Wood windows and doors and millwork .....	32191
		321920 Wood container and pallet manufacturing .....	32192
		321991 Manufactured home (mobile home) manufacturing.....	321991
		321992 Prefabricated wood building manufacturing .....	321992
		321999 All other miscellaneous wood product manufacturing .....	321999
<b>CONSTRUCTION</b>			
<b>2301 New nonresidential construction</b>		<b>3221 Pulp, paper, and paperboard mills</b>	
230101 Nonresidential commercial and health care structures .....	23*	322110 Pulp mills.....	32211
230102 Nonresidential manufacturing structures .....	23*	322120 Paper mills.....	32212
230103 Other nonresidential structures.....	23*	322130 Paperboard mills .....	32213
<b>2302 New residential construction</b>		<b>3222 Converted paper product manufacturing</b>	
230201 Residential permanent site single- and multi-family structures .....	23*	322210 Paperboard container manufacturing .....	32221
230202 Other residential structures.....	23*	32222A Coated and laminated paper, packaging paper and plastics film manufacturing.....	322221-2
<b>2303 Maintenance and repair construction</b>		32222B All other paper bag and coated and treated paper manufacturing .....	322223-6
230301 Nonresidential maintenance and repair .....	23*	322230 Stationery product manufacturing .....	32223
230302 Residential maintenance and repair .....	23*	322291 Sanitary paper product manufacturing.....	322291
		322299 All other converted paper product manufacturing .....	322299
<b>MANUFACTURING</b>			
<b>3110 Food manufacturing</b>		<b>3230 Printing and related support activities</b>	
311111 Dog and cat food manufacturing .....	311111	323110 Printing.....	32311
311119 Other animal food manufacturing.....	311119	323120 Support activities for printing.....	32312
311210 Flour milling and malt manufacturing .....	31121	<b>3240 Petroleum and coal products manufacturing</b>	
311221 Wet corn milling .....	311221	324110 Petroleum refineries .....	32411
31122A Soybean and other oilseed processing.....	311222-3	324121 Asphalt paving mixture and block manufacturing.....	324121
311225 Fats and oils refining and blending.....	311225	324122 Asphalt shingle and coating materials manufacturing.....	324122
311230 Breakfast cereal manufacturing .....	311230	324191 Petroleum lubricating oil and grease manufacturing .....	324191
31131A Sugar cane mills and refining .....	311311-2	324199 All other petroleum and coal products manufacturing .....	324199
311313 Beet sugar manufacturing.....	311313	<b>3251 Basic chemical manufacturing</b>	
311320 Chocolate and confectionery manufacturing from cacao beans .....	31132	325110 Petrochemical manufacturing.....	32511
311330 Confectionery manufacturing from purchased chocolate....	31133	325120 Industrial gas manufacturing .....	32512
311340 Nonchocolate confectionery manufacturing .....	31134	325130 Synthetic dye and pigment manufacturing .....	32513
311410 Frozen food manufacturing.....	31141	325181 Alkalies and chlorine manufacturing .....	325181
311420 Fruit and vegetable canning, pickling, and drying .....	31142	325182 Carbon black manufacturing .....	325182
31151A Fluid milk and butter manufacturing.....	311511-2	325188 All other basic inorganic chemical manufacturing .....	325188
311513 Cheese manufacturing .....	311513	325190 Other basic organic chemical manufacturing .....	32519
311514 Dry, condensed, and evaporated dairy product manufacturing .....	311514	<b>3252 Resin, rubber, and artificial fibers manufacturing</b>	
		325211 Plastics material and resin manufacturing .....	325211
		325212 Synthetic rubber manufacturing .....	325212
		325220 Artificial and synthetic fibers and filaments manufacturing .....	32522

## Appendix A. Industries in the 2002 Benchmark Input-Output Accounts—Continues

I-O industry code and title	Related 2002 NAICS codes	I-O industry code and title	Related 2002 NAICS codes
<b>3253 Agricultural chemical manufacturing</b>		<b>332B Other fabricated metal product manufacturing</b>	
325310 Fertilizer manufacturing.....	325311-4	332500 Hardware manufacturing.....	3325
325320 Pesticide and other agricultural chemical manufacturing....	325320	332600 Spring and wire product manufacturing.....	3326
<b>3254 Pharmaceutical and medicine manufacturing</b>		332710 Machine shops.....	33271
325411 Medicinal and botanical manufacturing.....	325411	332720 Turned product and screw, nut, and bolt manufacturing.....	33272
325412 Pharmaceutical preparation manufacturing.....	325412	332800 Coating, engraving, heat treating and allied activities.....	3328
325413 In-vitro diagnostic substance manufacturing.....	325413	33291A Valve and fittings other than plumbing.....	332911-2, 332919
325414 Biological product (except diagnostic) manufacturing.....	325414	332913 Plumbing fixture fitting and trim manufacturing.....	332913
<b>3255 Paint, coating, and adhesive manufacturing</b>		332991 Ball and roller bearing manufacturing.....	332991
325510 Paint and coating manufacturing.....	32551	332996 Fabricated pipe and pipe fitting manufacturing.....	332996
325520 Adhesive manufacturing.....	32552	33299C Other fabricated metal manufacturing.....	332997-9
<b>3256 Soap, cleaning compound, and toiletry manufacturing</b>		<b>3331 Agriculture, construction, and mining machinery manufacturing</b>	
325610 Soap and cleaning compound manufacturing.....	32561	333111 Farm machinery and equipment manufacturing.....	333111
325620 Toilet preparation manufacturing.....	32562	333112 Lawn and garden equipment manufacturing.....	333112
<b>3259 Other chemical product and preparation manufacturing</b>		333120 Construction machinery manufacturing.....	33312
325910 Printing ink manufacturing.....	32591	333130 Mining and oil and gas field machinery manufacturing.....	33313
3259A0 All other chemical product and preparation manufacturing	32592, 32599	<b>3332 Industrial machinery manufacturing</b>	
<b>3260 Plastics and rubber products manufacturing</b>		33329A Other industrial machinery manufacturing.....	33321, 333291-4, 333298
326110 Plastics packaging materials and un laminated film and sheet manufacturing.....	32611	333220 Plastics and rubber industry machinery manufacturing.....	33322
326121 Unlaminated plastics profile shape manufacturing.....	326121	333295 Semiconductor machinery manufacturing.....	333295
326122 Plastics pipe and pipe fitting manufacturing.....	326122	<b>3333 Commercial and service industry machinery manufacturing</b>	
326130 Laminated plastics plate, sheet (except packaging), and shape manufacturing.....	32613	33331A Vending, commercial, industrial, and office machinery manufacturing.....	333311-3
326140 Polystyrene foam product manufacturing.....	32614	333314 Optical instrument and lens manufacturing.....	333314
326150 Urethane and other foam product (except polystyrene) manufacturing.....	32615	333315 Photographic and photocopying equipment manufacturing.....	333315
326160 Plastics bottle manufacturing.....	32616	333319 Other commercial and service industry machinery manufacturing.....	333319
32619A Other plastics product manufacturing.....	32619	<b>3334 HVAC and commercial refrigeration equipment manufacturing</b>	
326210 Tire manufacturing.....	32621	33341A Air purification and ventilation equipment manufacturing.....	333411-2
326220 Rubber and plastics hoses and belting manufacturing.....	32622	333414 Heating equipment (except warm air furnaces) manufacturing.....	333414
326290 Other rubber product manufacturing.....	32629	333415 Air conditioning, refrigeration, and warm air heating equipment manufacturing.....	333415
<b>3270 Nonmetallic mineral product manufacturing</b>		<b>3335 Metalworking machinery manufacturing</b>	
32711A Pottery, ceramics, and plumbing fixture manufacturing.....	32711	333511 Industrial mold manufacturing.....	333511
32712A Brick, tile, and other structural clay product manufacturing	327121-3	33351A Metal cutting and forming machine tool manufacturing.....	333512-3
32712B Clay and nonclay refractory manufacturing.....	327124-5	333514 Special tool, die, jig, and fixture manufacturing.....	333514
327211 Flat glass manufacturing.....	327211	333515 Cutting tool and machine tool accessory manufacturing.....	333515
327212 Other pressed and blown glass and glassware manufacturing.....	327212	33351B Rolling mill and other metalworking machinery manufacturing	333516, 333518
327213 Glass container manufacturing.....	327213	<b>3336 Engine, turbine, and power transmission equipment manufacturing</b>	
327215 Glass product manufacturing made of purchased glass....	327215	333611 Turbine and turbine generator set units manufacturing.....	333611
327310 Cement manufacturing.....	32731	333612 Speed changer, industrial high-speed drive, and gear manufacturing.....	333612
327320 Ready-mix concrete manufacturing.....	32732	333613 Mechanical power transmission equipment manufacturing....	333613
327330 Concrete pipe, brick, and block manufacturing.....	32733	333618 Other engine equipment manufacturing.....	333618
327390 Other concrete product manufacturing.....	32739	<b>3339 Other general purpose machinery manufacturing</b>	
3274A0 Lime and gypsum product manufacturing.....	3274	333911 Pump and pumping equipment manufacturing.....	333911, 333913
327910 Abrasive product manufacturing.....	32791	333912 Air and gas compressor manufacturing.....	333912
327991 Cut stone and stone product manufacturing.....	327991	333920 Material handling equipment manufacturing.....	333921-4
327992 Ground or treated mineral and earth manufacturing.....	327992	333991 Power-driven handtool manufacturing.....	333991
327993 Mineral wool manufacturing.....	327993	33399A Other general purpose machinery manufacturing.....	333992, 333997, 333999
327999 Miscellaneous nonmetallic mineral products.....	327999	333993 Packaging machinery manufacturing.....	333993
<b>331A Iron and steel mills and manufacturing from purchased steel</b>		333994 Industrial process furnace and oven manufacturing.....	333994
331110 Iron and steel mills and ferroalloy manufacturing.....	3311	33399B Fluid power process machinery.....	333995-6
331200 Steel product manufacturing from purchased steel.....	33121, 33122	<b>3341 Computer and peripheral equipment manufacturing</b>	
<b>331B Nonferrous metal production and processing</b>		334111 Electronic computer manufacturing.....	334111
33131A Alumina refining and primary aluminum production.....	331311-2	334112 Computer storage device manufacturing.....	334112
331314 Secondary smelting and alloying of aluminum.....	331314	33411A Computer terminals and other computer peripheral equipment manufacturing.....	334113, 334119
33131B Aluminum product manufacturing from purchased aluminum.....	331315, 331316, 331319	<b>334A Audio, video, and communications equipment manufacturing</b>	
331411 Primary smelting and refining of copper.....	331411	334210 Telephone apparatus manufacturing.....	33421
331419 Primary smelting and refining of nonferrous metal (except copper and aluminum).....	331419	334220 Broadcast and wireless communications equipment.....	33422
331420 Copper rolling, drawing, extruding and alloying.....	33142	334290 Other communications equipment manufacturing.....	33429
331490 Nonferrous metal (except copper and aluminum) rolling, drawing, extruding and alloying.....	33149	334300 Audio and video equipment manufacturing.....	3343
<b>3315 Foundries</b>		<b>3344 Semiconductor and other electronic component manufacturing</b>	
331510 Ferrous metal foundries.....	33151	334411 Electron tube manufacturing.....	334411
331520 Nonferrous metal foundries.....	33152	334412 Bare printed circuit board manufacturing.....	334412
<b>3321 Forging and stamping</b>		334413 Semiconductor and related device manufacturing.....	334413
33211A All other forging, stamping, and sintering.....	332111-2, 332117	33441A Electronic capacitor, resistor, coil, transformer, and other inductor manufacturing.....	334414-6
332114 Custom roll forming.....	332114	334417 Electronic connector manufacturing.....	334417
33211B Crown and closure manufacturing and metal stamping.....	332115-6	334418 Printed circuit assembly (electronic assembly) manufacturing	334418
<b>3322 Cutlery and handtool manufacturing</b>		334419 Other electronic component manufacturing.....	334419
33221A Cutlery, utensil, pot, and pan manufacturing.....	332211, 332214	<b>3345 Electronic instrument manufacturing</b>	
33221B Handtool manufacturing.....	332212-3	334510 Electromedical and electrotherapeutic apparatus manufacturing.....	334510
<b>3323 Architectural and structural metals manufacturing</b>		334511 Search, detection, and navigation instruments manufacturing	334511
332310 Plate work and fabricated structural product manufacturing	33231	334512 Automatic environmental control manufacturing.....	334512
332320 Ornamental and architectural metal products manufacturing.....	33232	334513 Industrial process variable instruments manufacturing.....	334513
<b>3324 Boiler, tank, and shipping container manufacturing</b>		334514 Totalizing fluid meters and counting devices manufacturing....	334514
332410 Power boiler and heat exchanger manufacturing.....	33241	334515 Electricity and signal testing instruments manufacturing.....	334515
332420 Metal tank (heavy gauge) manufacturing.....	33242	334516 Analytical laboratory instrument manufacturing.....	334516
332430 Metal can, box, and other metal container (light gauge) manufacturing.....	33243	334517 Irradiation apparatus manufacturing.....	334517
<b>332A Ordnance and accessories manufacturing</b>		33451A Watch, clock, and other measuring and controlling device manufacturing.....	334518-9
33299A Ammunition manufacturing.....	332992-3		
33299B Arms, ordnance, and accessories manufacturing.....	332994-5		

Appendix A. Industries in the 2002 Benchmark Input-Output Accounts—Continues

I-O industry code and title	Related 2002 NAICS codes	I-O industry code and title	Related 2002 NAICS codes
<b>3346 Manufacturing and reproducing magnetic and optical media</b>		<b>WHOLESALE TRADE</b>	
33461A Software, audio, and video media reproducing.....	334611-2	<b>4200 Wholesale trade</b>	
334613 Magnetic and optical recording media manufacturing.....	334613	420000 Wholesale trade .....	42
<b>3351 Electric lighting equipment manufacturing</b>		<b>RETAIL TRADE</b>	
335110 Electric lamp bulb and part manufacturing.....	33511	<b>4A00 Retail trade</b>	
335120 Lighting fixture manufacturing.....	33512	4A0000 Retail trade.....	44, 45
<b>3352 Household appliance manufacturing</b>		<b>TRANSPORTATION AND WAREHOUSING, EXCLUDING POSTAL SERVICE</b>	
335210 Small electrical appliance manufacturing.....	33521	<b>4810 Air transportation</b>	
335221 Household cooking appliance manufacturing .....	335221	481000 Air transportation.....	481
335222 Household refrigerator and home freezer manufacturing .....	335222	<b>4820 Rail transportation</b>	
335224 Household laundry equipment manufacturing .....	335224	482000 Rail transportation.....	482
335228 Other major household appliance manufacturing .....	335228	<b>4830 Water transportation</b>	
<b>3353 Electrical equipment manufacturing</b>		483000 Water transportation.....	483
335311 Power, distribution, and specialty transformer manufacturing .....	335311	<b>4840 Truck transportation</b>	
335312 Motor and generator manufacturing.....	335312	484000 Truck transportation.....	484
335313 Switchgear and switchboard apparatus manufacturing.....	335313	<b>4850 Transit and ground passenger transportation</b>	
335314 Relay and industrial control manufacturing .....	335314	485000 Transit and ground passenger transportation.....	485
<b>3359 Other electrical equipment and component manufacturing</b>		<b>4860 Pipeline transportation</b>	
335911 Storage battery manufacturing.....	335911	486000 Pipeline transportation .....	486
335912 Primary battery manufacturing.....	335912	<b>48A0 Scenic and sightseeing transportation and support activities</b>	
335920 Communication and energy wire and cable manufacturing .....	33592	48A000 Scenic and sightseeing transportation and support activities for transportation .....	487, 488
335930 Wiring device manufacturing.....	33593	<b>4920 Couriers and messengers</b>	
335991 Carbon and graphite product manufacturing.....	335991	492000 Couriers and messengers.....	492
335999 All other miscellaneous electrical equipment and component manufacturing .....	335999	<b>4930 Warehousing and storage</b>	
<b>3361 Motor vehicle manufacturing</b>		493000 Warehousing and storage .....	493
336111 Automobile manufacturing .....	336111	<b>INFORMATION</b>	
336112 Light truck and utility vehicle manufacturing .....	336112	<b>5111 Newspaper, periodical, book, and directory publishers</b>	
336120 Heavy duty truck manufacturing.....	336120	511110 Newspaper publishers.....	51111
<b>336A Motor vehicle body, trailer, and parts manufacturing</b>		511120 Periodical publishers .....	51112
336211 Motor vehicle body manufacturing.....	336211	511130 Book publishers.....	51113
336212 Truck trailer manufacturing .....	336212	5111A0 Directory, mailing list, and other publishers.....	5111A, 51119
336213 Motor home manufacturing .....	336213	<b>5112 Software publishers</b>	
336214 Travel trailer and camper manufacturing .....	336214	511200 Software publishers.....	51121
336300 Motor vehicle parts manufacturing.....	3363	<b>5120 Motion picture and sound recording industries</b>	
<b>336A Aerospace product and parts manufacturing</b>		512100 Motion picture and video industries.....	5121
336411 Aircraft manufacturing.....	336411	512200 Sound recording industries.....	5122
336412 Aircraft engine and engine parts manufacturing .....	336412	<b>5151 Radio and television broadcasting</b>	
336413 Other aircraft parts and auxiliary equipment manufacturing .....	336413	515100 Radio and television broadcasting.....	5151
336414 Guided missile and space vehicle manufacturing .....	336414	<b>5152 Cable networks and program distribution</b>	
33641A Propulsion units and parts for space vehicles and guided missiles .....	336415, 336419	515200 Cable and other subscription programming.....	5152
<b>336B Other transportation equipment manufacturing</b>		<b>5161 Internet publishing and broadcasting</b>	
336500 Railroad rolling stock manufacturing.....	3365	516110 Internet publishing and broadcasting .....	516
336611 Ship building and repairing .....	336611	<b>5170 Telecommunications</b>	
336612 Boat building .....	336612	517000 Telecommunications.....	517
336991 Motorcycle, bicycle, and parts manufacturing.....	336991	<b>5180 Internet service providers, web search portals, and data processing</b>	
336992 Military armored vehicle, tank, and tank component manufacturing .....	336992	518100 Internet service providers and web search portals.....	5181
336999 All other transportation equipment manufacturing .....	336999	518200 Data processing, hosting, and related services.....	5182
<b>3370 Furniture and related product manufacturing</b>		<b>5190 Other information services</b>	
337110 Wood kitchen cabinet and countertop manufacturing.....	33711	519100 Other information services .....	519
337121 Upholstered household furniture manufacturing.....	337121	<b>FINANCE AND INSURANCE</b>	
337122 Nonupholstered wood household furniture manufacturing .....	337122	<b>52A0 Monetary authorities, credit intermediation and related activities</b>	
33712A Metal and other household furniture manufacturing .....	33712A-5	52A000 Monetary authorities and depository credit intermediation .....	521, 5221
337127 Institutional furniture manufacturing.....	337127	52A00 Nondepository credit intermediation and related activities .....	5222-3
33721A Wood TV, radio, and sewing machine cabinet manufacturing .....	337129	<b>5230 Securities, commodity contracts, investments, and related activities</b>	
337212 Office furniture manufacturing, including custom architectural woodwork and millwork .....	337211, 337212, 337214	523000 Securities, commodity contracts, investments, and related activities .....	523
337215 Showcase, partition, shelving, and locker manufacturing .....	337215	<b>5240 Insurance carriers and related activities</b>	
337910 Mattress manufacturing.....	33791	524100 Insurance carriers.....	5241
337920 Blind and shade manufacturing.....	33792	524200 Insurance agencies, brokerages, and related activities.....	5242
<b>3391 Medical equipment and supplies manufacturing</b>		<b>5250 Funds, trusts, and other financial vehicles</b>	
339111 Laboratory apparatus and furniture manufacturing.....	339111	525000 Funds, trusts, and other financial vehicles .....	525
339112 Surgical and medical instrument manufacturing .....	339112	<b>REAL ESTATE AND RENTAL AND LEASING</b>	
339113 Surgical appliance and supplies manufacturing .....	339113	<b>5310 Real estate</b>	
339114 Dental equipment and supplies manufacturing.....	339114	531000 Real estate .....	531
339115 Ophthalmic goods manufacturing .....	339115	<b>5008 Owner-occupied dwellings</b>	
339116 Dental laboratories .....	339116	S00800 Owner-occupied dwellings .....	n.a.
<b>3399 Other miscellaneous manufacturing</b>		<b>5321 Automotive equipment rental and leasing</b>	
339910 Jewelry and silverware manufacturing .....	33991	532100 Automotive equipment rental and leasing .....	5321
339920 Sporting and athletic goods manufacturing.....	33992		
339930 Doll, toy, and game manufacturing.....	33993		
339940 Office supplies (except paper) manufacturing.....	33994		
339950 Sign manufacturing .....	33995		
339991 Gasket, packing, and sealing device manufacturing.....	339991		
339992 Musical instrument manufacturing .....	339992		
33999A All other miscellaneous manufacturing .....	339993, 339995, 339999		
339994 Broom, brush, and mop manufacturing.....	339994		

Appendix A. Industries in the 2002 Benchmark Input-Output Accounts—Table Ends

I-O industry code and title	Related 2002 NAICS codes	I-O industry code and title	Related 2002 NAICS codes
<b>532A Consumer goods and general rental centers</b>		<b>6230 Nursing and residential care facilities</b>	
532A00 General and consumer goods rental except video tapes and discs.....	53221-2, 53229, 5323	623000 Nursing and residential care facilities.....	623
532230 Video tape and disc rental.....	53223	<b>6240 Social assistance</b>	
<b>5324 Commercial and industrial machinery and equipment rental and leasing</b>		624A00 Individual and family services.....	6241
532400 Commercial and industrial machinery and equipment rental and leasing.....	5324	624200 Community food, housing, and other relief services, including rehabilitation services.....	6242-3
<b>5330 Lessors of nonfinancial intangible assets</b>		624400 Child day care services.....	6244
533000 Lessors of nonfinancial intangible assets.....	533	<b>ARTS, ENTERTAINMENT, AND RECREATION</b>	
<b>PROFESSIONAL AND TECHNICAL SERVICES</b>		<b>71A0 Performing arts, spectator sports, museums, zoos, and parks</b>	
<b>5411 Legal services</b>		711100 Performing arts companies.....	7111
541100 Legal services.....	5411	711200 Spectator sports.....	7112
<b>5412 Accounting, tax preparation, bookkeeping, and payroll services</b>		711A00 Promoters of performing arts and sports and agents for public figures.....	7113-4
541200 Accounting, tax preparation, bookkeeping, and payroll services.....	5412	711500 Independent artists, writers, and performers.....	7115
<b>5413 Architectural, engineering, and related services</b>		712000 Museums, historical sites, zoos, and parks.....	712
541300 Architectural, engineering, and related services.....	5413	<b>7130 Amusements, gambling, and recreation</b>	
<b>5414 Specialized design services</b>		713A00 Amusement parks, arcades, and gambling industries.....	7131-2
541400 Specialized design services.....	5414	713B00 Other amusement and recreation industries.....	71391-3, 71399
<b>5415 Computer systems design and related services</b>		713940 Fitness and recreational sports centers.....	71394
541511 Custom computer programming services.....	541511	713950 Bowling centers.....	71395
541512 Computer systems design services.....	541512	<b>ACCOMMODATION AND FOOD SERVICES</b>	
54151A Other computer related services, including facilities management.....	541513, 541519	<b>7210 Accommodation</b>	
<b>5416 Management, scientific, and technical consulting services</b>		7211A0 Hotels and motels, including casino hotels.....	72111-2
541610 Management, scientific, and technical consulting services.....	54161	721A00 Other accommodations.....	72119, 7212-3
5416A0 Environmental and other technical consulting services.....	54162, 54169	<b>7220 Food services and drinking places</b>	
<b>5417 Scientific research and development services</b>		722000 Food services and drinking places.....	722
541700 Scientific research and development services.....	5417	<b>OTHER SERVICES EXCEPT PUBLIC ADMINISTRATION</b>	
<b>5418 Advertising and related services</b>		<b>8111 Automotive repair and maintenance</b>	
541800 Advertising and related services.....	5418	8111A0 Automotive repair and maintenance, except car washes.....	81111-2, 811191, 811198
<b>5419 Other professional, scientific, and technical services</b>		811192 Car washes.....	811192
5419A0 All other miscellaneous professional, scientific, and technical services.....	54191, 54193, 54199	<b>811A Electronic, commercial, and household goods repair</b>	
541920 Photographic services.....	54192	811200 Electronic and precision equipment repair and maintenance.....	8112
541940 Veterinary services.....	54194	811300 Commercial and industrial machinery and equipment repair and maintenance.....	8113
<b>MANAGEMENT OF COMPANIES AND ENTERPRISES</b>		811400 Personal and household goods repair and maintenance.....	8114
<b>5500 Management of companies and enterprises</b>		<b>8120 Personal and laundry services</b>	
550000 Management of companies and enterprises.....	55	812100 Personal care services.....	8121
<b>ADMINISTRATIVE AND WASTE SERVICES</b>		812200 Death care services.....	8122
<b>561A All other administrative and support services</b>		812300 Dry-cleaning and laundry services.....	8123
561100 Office administrative services.....	5611	812900 Other personal services.....	8129
561200 Facilities support services.....	5612	<b>813A Religious, grantmaking, giving, and social advocacy organizations</b>	
561400 Business support services.....	5614	813100 Religious organizations.....	8131
561600 Investigation and security services.....	5616	813A00 Grantmaking, giving, and social advocacy organizations.....	8132, 8133
561700 Services to buildings and dwellings.....	5617	<b>813B Civic, social, professional and similar organizations</b>	
561900 Other support services.....	5619	813B00 Civic, social, professional, and similar organizations.....	8134, 8139
<b>5613 Employment services</b>		<b>8140 Private households</b>	
561300 Employment services.....	5613	814000 Private households.....	814
<b>5615 Travel arrangement and reservation services</b>		<b>GOVERNMENT INDUSTRIES</b>	
561500 Travel arrangement and reservation services.....	5615	<b>S001 Federal Government enterprises</b>	
<b>5620 Waste management and remediation services</b>		491000 Postal service.....	491
562000 Waste management and remediation services.....	562	S00101 Federal electric utilities.....	n.a.
<b>EDUCATIONAL SERVICES</b>		S00102 Other Federal Government enterprises.....	n.a.
<b>6100 Educational services</b>		<b>S002 State and local government enterprises</b>	
611100 Elementary and secondary schools.....	6111	S00201 State and local government passenger transit.....	n.a.
611A00 Junior colleges, colleges, universities, and professional schools.....	6112-3	S00202 State and local government electric utilities.....	n.a.
611B00 Other educational services.....	6114-7	S00203 Other state and local government enterprises.....	n.a.
<b>HEALTH CARE AND SOCIAL ASSISTANCE</b>		<b>S005 General Federal defense government services</b>	
<b>6210 Ambulatory health care services</b>		S00500 General Federal defense government services.....	n.a.
621A00 Offices of physicians, dentists, and other health practitioners.....	6211-3	<b>S006 General Federal nondefense government services</b>	
621B00 Medical and diagnostic labs and outpatient and other ambulatory care services.....	6214-5, 6219	S00600 General Federal nondefense government services.....	n.a.
621600 Home health care services.....	6216	<b>S007 General state and local government services</b>	
<b>6220 Hospitals</b>		S00700 General state and local government services.....	n.a.
622000 Hospitals.....	622	<b>SPECIAL INDUSTRIES</b>	
		<b>S003 Noncomparable imports</b>	
		S00300 Noncomparable imports.....	n.a.
		<b>S004 Scrap, used and secondhand goods</b>	
		S00401 Scrap.....	n.a.
		S00402 Used and secondhand goods.....	n.a.
		<b>S009 Rest of the world adjustment</b>	
		S00900 Rest of the world adjustment.....	n.a.

n.a. Not applicable.  
NOTE: The titles in boldface represent the industries used for the summary version of the 2002 input-output (I-O) tables.

\* An asterisk following a North American Industry Classification System (NAICS) code indicates that the NAICS industry is included in more than one I-O industry.



### Appendix B. Classification of Value Added and Final Uses in the 2002 Benchmark Input-Output Accounts

I-O number and title		I-O number and title	
<b>VALUE ADDED</b>		<b>F050</b>	<b>Imports of goods and services</b>
<b>V001</b>	<b>Compensation of employees</b>		F05000 Imports of goods and services
	V00100 Compensation of employees	<b>F06C</b>	<b>Federal Government consumption expenditures, national defense</b>
<b>V002</b>	<b>Taxes on production and imports, less subsidies</b>		F06C00 Federal Government consumption expenditures, national defense
	V00200 Taxes on production and imports, less subsidies	<b>F06I</b>	<b>Federal Government gross investment, national defense</b>
<b>V003</b>	<b>Gross operating surplus</b>		F06I00 Federal Government gross investment, national defense
	V00300 Gross operating surplus	<b>F07C</b>	<b>Federal Government consumption expenditures, nondefense</b>
			F07C00 Federal Government consumption expenditures, nondefense
<b>FINAL USES</b>		<b>F07I</b>	<b>Federal Government gross investment, nondefense</b>
<b>F010</b>	<b>Personal consumption expenditures</b>		F07I00 Federal Government gross investment, nondefense
	F01000 Personal consumption expenditures	<b>F08C</b>	<b>State and local government consumption expenditures, education</b>
<b>F020</b>	<b>Private fixed investment</b>		F08C00 State and local government consumption expenditures, education
	F02000 Private fixed investment	<b>F08I</b>	<b>State and local government gross investment, education</b>
<b>F030</b>	<b>Change in private inventories</b>		F08I00 State and local government gross investment, education
	F03000 Change in private inventories	<b>F09C</b>	<b>State and local consumption expenditures, other</b>
<b>F040</b>	<b>Exports of goods and services</b>		F09C00 State and local consumption expenditures, other
	F04000 Exports of goods and services	<b>F09I</b>	<b>State and local government gross investment, other</b>
			F09I00 State and local government gross investment, other

NOTE. The titles in boldface represent the value added and final use components used for the summary version of the 2002 tables

**Appendix C. Input-Output Commodity Composition of NIPA Personal Consumption Expenditure Categories,  
in Producers' and Purchasers' Prices, 2002 Benchmark Input-Output Accounts—Continues**

[Millions of dollars]

NIPA description and I-O descriptions	Producers' prices	Transportation costs	Wholesale and retail trade margins	Purchasers' prices	NIPA description and I-O descriptions	Producers' prices	Transportation costs	Wholesale and retail trade margins	Purchasers' prices
<b>New domestic autos</b>					332B Other fabricated metal products.....	110	3	170	283
Total.....	44,217	1,397	18,670	64,285	3399 Other miscellaneous manufactured products.....	889	188	1,393	2,470
3361 Motor vehicles.....	44,198	1,397	18,658	64,253	4A00 Retail trade.....	11			11
336A Motor vehicle bodies, trailers, and parts.....	19	*	13	32	S004 Scrap, used and secondhand goods.....	308	155	386	849
<b>New foreign autos</b>					<b>Non-electric cookware and tableware</b>				
Total.....	23,404	692	9,227	33,322	Total.....	7,538	449	12,420	20,407
3361 Motor vehicles.....	23,404	692	9,227	33,322	3210 Wood products.....	423	22	700	1,145
<b>New light trucks</b>					3260 Plastics and rubber products.....	4,337	81	6,996	11,414
Total.....	117,635	2,253	21,792	141,681	3315 Foundry products.....	12	4	26	42
3361 Motor vehicles.....	117,635	2,253	21,792	141,681	331A Primary ferrous metal products.....	369	22	551	942
<b>Net purchases of used autos</b>					3321 Forgings and stampings.....	312	6	424	742
Total.....	33,238	271	24,526	58,035	3322 Cutlery and handtools.....	1,502	38	2,466	4,005
S004 Scrap, used and secondhand goods.....	33,238	271	24,526	58,035	3324 Boilers, tanks, and shipping containers.....	46	1	62	109
<b>Net purchases of used light trucks</b>					332B Other fabricated metal products.....	577	15	1,115	1,708
Total.....	37,494	121	16,552	54,167	S004 Scrap, used and secondhand goods.....	-40	259	81	299
S004 Scrap, used and secondhand goods.....	37,494	121	16,552	54,167	<b>Tools, hardware, and supplies</b>				
<b>Tires</b>					Total.....	10,302	192	4,978	15,472
Total.....	6,716	123	10,505	17,344	3140 Nonapparel textile products.....	19	1	19	39
3260 Plastics and rubber products.....	6,715	123	10,505	17,343	3255 Paints, coatings, and adhesives.....	416	14	370	799
S004 Scrap, used and secondhand goods.....	1			1	3256 Soaps, cleaning compounds, and toiletries.....	260	8	317	584
<b>Accessories and parts</b>					3259 Other chemical products.....	70	2	68	140
Total.....	9,794	290	13,000	23,085	3260 Plastics and rubber products.....	38	1	17	56
3256 Soaps, cleaning compounds, and toiletries.....	309	10	194	512	3270 Nonmetallic mineral products.....	248	23	280	551
3260 Plastics and rubber products.....	397	8	400	805	331A Primary ferrous metal products.....	12	1	4	17
3270 Nonmetallic mineral products.....	44	1	41	86	3322 Cutlery and handtools.....	1,448	25	1,336	2,809
331A Primary ferrous metal products.....	18	1	18	37	332B Other fabricated metal products.....	215	5	162	382
332B Other fabricated metal products.....	154	4	147	305	3332 Industrial machinery.....	205	5	180	390
3333 Commercial and service industry machinery.....	*		1	1	3335 Metalworking machinery.....	40	1	30	70
334A Audio, video, and communications equipment.....	4		4	8	3339 Other general purpose machinery.....	1,635	21	1,722	3,378
3351 Electric lighting equipment.....	151	2	211	363	3353 Electrical equipment.....	124	1	98	223
3359 Other electrical equipment and components.....	858	69	367	1,294	3370 Furniture and related products.....	225	33	186	444
336A Motor vehicle bodies, trailers, and parts.....	10,265	174	9,598	20,036	3399 Other miscellaneous manufactured products.....	197	44	184	425
3399 Other miscellaneous manufactured products.....	143	15	167	324	532A Consumer goods and general rentals.....	5,117			5,117
S004 Scrap, used and secondhand goods.....	-2,549	8	1,853	-688	S004 Scrap, used and secondhand goods.....	34	7	6	47
<b>Furniture</b>					<b>Outdoor equipment and supplies</b>				
Total.....	39,888	4,808	35,450	80,146	Total.....	1,218	31	1,371	2,620
3370 Furniture and related products.....	37,162	4,043	33,126	74,332	3210 Wood products.....	9	1	9	19
3391 Medical equipment and supplies.....	140	15	142	297	3260 Plastics and rubber products.....	86	2	66	154
532A Consumer goods and general rentals.....	1,725		1,725	1,725	3322 Cutlery and handtools.....	182	3	195	380
S004 Scrap, used and secondhand goods.....	861	750	2,182	3,792	332B Other fabricated metal products.....	111	3	123	237
<b>Clocks, lamps, lighting fixtures, and other household decorative items</b>					3331 Agriculture, construction, and mining machinery.....	700	19	899	1,617
Total.....	10,646	851	10,952	22,450	3345 Electronic instruments.....	89	1	75	166
3160 Leather and allied products.....	86	3	115	204	S004 Scrap, used and secondhand goods.....	41	3	3	47
3210 Wood products.....	1,535	75	1,576	3,187	<b>Televisions</b>				
3230 Printed products.....	92	1	79	172	Total.....	11,699	181	6,561	18,441
3270 Nonmetallic mineral products.....	1,546	42	1,597	3,185	334A Audio, video, and communications equipment.....	11,741	141	6,536	18,418
331A Primary ferrous metal products.....	170	10	133	313	S004 Scrap, used and secondhand goods.....	-42	41	25	23
3323 Architectural and structural metal products.....	57	*	37	95	<b>Other video equipment</b>				
3324 Boilers, tanks, and shipping containers.....	1		1	2	Total.....	12,501	150	7,505	20,157
332B Other fabricated metal products.....	322	9	280	611	334A Audio, video, and communications equipment.....	12,054	144	7,218	19,416
3345 Electronic instruments.....	525	7	627	1,159	3359 Other electrical equipment and components.....	447	6	287	740
3351 Electric lighting equipment.....	2,236	82	2,215	4,533	<b>Audio equipment</b>				
3359 Other miscellaneous manufactured products.....	3,157	362	3,649	7,168	Total.....	11,745	205	7,113	19,063
4A00 Retail trade.....	10		10	10	3344 Semiconductors and electronic components.....	326	4	250	581
S004 Scrap, used and secondhand goods.....	908	259	644	1,811	334A Audio, video, and communications equipment.....	10,091	117	5,963	16,170
<b>Carpets and other floor coverings</b>					3359 Other electrical equipment and components.....	1,337	17	858	2,212
Total.....	8,054	599	8,429	17,082	S004 Scrap, used and secondhand goods.....	-10	68	42	100
3140 Nonapparel textile products.....	7,595	453	7,813	15,861	<b>Prerecorded and blank audio discs, tapes, digital files, and downloads</b>				
3260 Plastics and rubber products.....	220	5	284	509	Total.....	10,198	123	9,799	20,120
S004 Scrap, used and secondhand goods.....	239	141	332	712	3346 Magnetic media products.....	3		2	5
<b>Window coverings</b>					5120 Motion pictures and sound recordings.....	10,195	123	9,797	20,115
Total.....	4,499	476	4,253	9,228	<b>Video cassettes and discs, blank and prerecorded</b>				
3140 Nonapparel textile products.....	2,155	90	1,919	4,165	Total.....	14,284		3,382	17,666
3370 Furniture and related products.....	2,350	349	2,303	5,002	3346 Magnetic media products.....	545		137	682
S004 Scrap, used and secondhand goods.....	-6	36	31	61	5120 Motion pictures and sound recordings.....	12,926		3,245	16,171
<b>Major household appliances</b>					S004 Scrap, used and secondhand goods.....	813			813
Total.....	19,485	591	12,569	32,646	<b>Photographic equipment</b>				
3260 Plastics and rubber products.....	63	1	30	94	Total.....	1,583	45	2,005	3,633
331B Primary nonferrous metal products.....	28	*	15	43	3160 Leather and allied products.....	22	1	18	40
3332 Industrial machinery.....	310	2	210	522	3333 Commercial and service industry machinery.....	1,559	40	1,985	3,584
3334 HVAC and commercial refrigeration equipment.....	2,271	58	2,086	4,415	S004 Scrap, used and secondhand goods.....	2	4	3	8
3351 Electric lighting equipment.....	17	*	10	26	<b>Personal computers and peripheral equipment</b>				
3352 Household appliances.....	16,812	473	10,178	27,462	Total.....	18,549	217	12,444	31,210
3359 Other electrical equipment and components.....	8	*	5	13	3341 Computer and peripheral equipment.....	18,196	154	12,210	30,560
S004 Scrap, used and secondhand goods.....	-23	57	35	69	3344 Semiconductors and electronic components.....	402	5	210	618
<b>Small electric household appliances</b>					S004 Scrap, used and secondhand goods.....	-50	58	25	33
Total.....	2,006	63	1,256	3,326	<b>Computer software and accessories</b>				
3339 Other general purpose machinery.....	31	*	36	68	Total.....	8,217	20	3,061	11,298
3352 Household appliances.....	2,018	32	1,194	3,243	5112 Software publishers.....	8,217	20	3,061	11,298
S004 Scrap, used and secondhand goods.....	-43	32	27	15	<b>Calculators, typewriters, and other information processing equipment</b>				
<b>Dishes and flatware</b>					Total.....	368	7	1,134	1,510
Total.....	8,537	512	10,785	19,834	3333 Commercial and service industry machinery.....	368	7	1,134	1,510
3260 Plastics and rubber products.....	2,454	46	3,119	5,619					
3270 Nonmetallic mineral products.....	4,376	110	5,121	9,606					
3322 Cutlery and handtools.....	388	10	596	995					

**Appendix C. Input-Output Commodity Composition of NIPA Personal Consumption Expenditure Categories, in Producers' and Purchasers' Prices, 2002 Benchmark Input-Output Accounts—Continues**

[Millions of dollars]

NIPA description and I-O descriptions	Producers' prices	Transportation costs	Wholesale and retail trade margins	Purchasers' prices	NIPA description and I-O descriptions	Producers' prices	Transportation costs	Wholesale and retail trade margins	Purchasers' prices
<b>Sporting equipment, supplies, guns, and ammunition</b>					<b>Bakery products</b>				
Total	20,235	1,522	22,346	44,103	Total	38,838	653	23,035	62,525
3140 Nonapparel textile products	882	35	977	1,894	3110 Food products	38,838	653	23,035	62,525
3160 Leather and allied products	108	4	118	230	<b>Beef and veal</b>				
3259 Other chemical products	674	25	558	1,256	Total	16,849	589	9,022	26,460
331A Primary ferrous metal products	11	1	9	21	3110 Food products	16,849	589	9,022	26,460
3322 Cutlery and handtools	297	8	341	646	<b>Pork</b>				
332A Ordnance and accessories	2,384	64	2,447	4,896	Total	12,294	306	5,869	18,469
336B Other transportation equipment	3,368	37	2,150	5,554	3110 Food products	12,294	306	5,869	18,469
3391 Medical equipment and supplies	344	42	249	635	<b>Other meats</b>				
3399 Other miscellaneous manufactured products	12,173	1,258	15,451	28,882	Total	11,829	265	4,170	16,265
811A Electronic, commercial, and household goods repair	45			45	1140 Fish and other nonfarm animals	145	1		146
S004 Scrap, used and secondhand goods	-50	49	46	45	3110 Food products	11,684	265	4,170	16,119
<b>Motorcycles</b>					<b>Poultry</b>				
Total	4,523	1,065	4,269	9,857	Total	22,271	249	10,051	32,571
3260 Plastics and rubber products	198	4	333	535	3110 Food products	22,271	249	10,051	32,571
336B Other transportation equipment	4,521	48	3,451	8,020	<b>Fish and seafood</b>				
S004 Scrap, used and secondhand goods	-196	1,012	485	1,301	Total	5,646	156	3,309	9,111
<b>Bicycles and accessories</b>					1120 Animal products	76	2	29	107
Total	1,587	17	1,214	2,818	1140 Fish and other nonfarm animals	2,316	81	1,258	3,655
336B Other transportation equipment	1,587	17	1,214	2,818	3110 Food products	3,254	73	2,022	5,349
<b>Pleasure boats</b>					<b>Fresh milk</b>				
Total	7,687	111	3,178	10,977	Total	9,835	163	4,492	14,491
3260 Plastics and rubber products	26	*	20	46	3110 Food products	9,835	163	4,492	14,491
332B Other fabricated metal products	10	*	6	17	<b>Processed dairy products</b>				
3336 Turbine and power transmission equipment	254	1	148	403	Total	16,941	328	9,270	26,539
336A Motor vehicle bodies, trailers, and parts	270	3	164	437	3110 Food products	16,941	328	9,270	26,539
336B Other transportation equipment	7,151	108	2,840	10,098	<b>Eggs</b>				
S004 Scrap, used and secondhand goods	-24			-24	Total	3,563	175	1,691	5,429
<b>Pleasure aircraft</b>					1120 Animal products	2,525	152	1,069	3,746
Total	599	10	359	968	3110 Food products	1,038	22	622	1,682
3359 Other electrical equipment and components	13	1	7	21	<b>Fats and oils</b>				
3364 Aerospace products and parts	488	3	152	643	Total	6,382	153	3,178	9,713
S004 Scrap, used and secondhand goods	98	6	200	304	3110 Food products	6,382	153	3,178	9,713
<b>Other recreational vehicles</b>					<b>Fruit (fresh)</b>				
Total	9,134	102	3,060	12,295	Total	9,379	1,181	8,207	18,767
336A Motor vehicle bodies, trailers, and parts	9,063	99	2,961	12,123	1110 Crop products	9,379	1,181	8,207	18,767
336B Other transportation equipment	250	3	98	351	<b>Vegetables (fresh)</b>				
S004 Scrap, used and secondhand goods	-178			-178	Total	14,378	3,063	13,347	30,788
<b>Musical instruments</b>					1110 Crop products	14,378	3,063	13,347	30,788
Total	2,024	284	2,763	5,071	<b>Processed fruits and vegetables</b>				
3160 Leather and allied products	116	5	118	239	Total	9,938	440	5,747	16,126
3399 Other miscellaneous manufactured products	1,935	221	2,590	4,746	1110 Crop products	344	137	452	932
S004 Scrap, used and secondhand goods	-27	58	55	86	3110 Food products	9,594	304	5,295	15,193
<b>Jewelry</b>					<b>Sugar and sweets</b>				
Total	21,521	1,399	20,838	43,759	Total	20,154	453	10,833	31,440
3399 Other miscellaneous manufactured products	22,145	1,069	20,269	43,483	3110 Food products	20,154	453	10,833	31,440
S004 Scrap, used and secondhand goods	-624	330	570	276	<b>Food, n.e.c.</b>				
<b>Watches</b>					Total	51,935	1,185	29,793	82,913
Total	2,464	41	3,082	5,588	1110 Crop products	825	76	410	1,311
3345 Electronic instruments	2,464	41	3,082	5,588	2123 Nonmetallic mineral mining and quarrying	6	10	6	21
<b>Therapeutic medical equipment</b>					3110 Food products	50,876	1,091	29,273	81,239
Total	6,137	493	6,978	13,609	3251 Basic chemicals	107	3	44	154
3345 Electronic instruments	1,323	18	1,685	3,026	3259 Other chemical products	119	5	60	185
3351 Electric lighting equipment	2		3	5	4A00 Retail trade	2			2
3352 Household appliances	5		6	11	<b>Coffee, tea, and other beverage materials</b>				
3359 Other electrical equipment and components	280	3	336	620	Total	3,261	114	3,761	7,135
3391 Medical equipment and supplies	4,527	470	4,947	9,945	3110 Food products	3,783	95	3,228	7,106
S004 Scrap, used and secondhand goods	*	1	*	2	3121 Beverage products	902	19	532	1,454
<b>Corrective eyeglasses and contact lenses</b>					S004 Scrap, used and secondhand goods	-1,425			-1,425
Total	12,031	78	8,274	20,383	<b>Mineral waters, soft drinks, and fruit and vegetable juices</b>				
3391 Medical equipment and supplies	5,732	78	8,273	14,082	Total	30,916	573	22,173	53,662
6210 Ambulatory health care services	6,299	*	6,299	1	3110 Food products	3,646	137	2,043	5,826
S004 Scrap, used and secondhand goods	*		1		3121 Beverage products	27,270	436	20,130	47,836
<b>Books</b>					<b>Spirits</b>				
Total	20,711	1,060	14,077	35,848	Total	7,348	343	9,094	16,785
3230 Printed products	10		6	16	3110 Food products	504	11	224	739
5111 Newspapers, books, and directories	20,731	820	13,904	35,455	3121 Beverage products	6,843	333	8,870	16,046
S004 Scrap, used and secondhand goods	-30	239	167	376	<b>Wine</b>				
<b>Luggage and similar personal items</b>					Total	10,210	272	8,325	18,806
Total	5,614	290	6,691	12,596	3121 Beverage products	10,210	272	8,325	18,806
3160 Leather and allied products	4,458	175	5,307	9,940	<b>Beer</b>				
3210 Wood products	174	7	134	315	Total	22,202	817	21,198	44,217
3399 Other miscellaneous manufactured products	982	109	1,250	2,341	3121 Beverage products	22,202	817	21,198	44,217
<b>Telephone and facsimile equipment</b>					<b>Food produced and consumed on farms</b>				
Total	2,367	24	3,833	6,225	Total	516			516
334A Audio, video, and communications equipment	2,367	24	3,833	6,225	1110 Crop products	417			417
<b>Cereals</b>					1120 Animal products	99			99
Total	16,703	465	10,101	27,270					
1110 Crop products	223	40	55	318					
3110 Food products	16,480	425	10,046	26,951					

**Appendix C. Input-Output Commodity Composition of NIPA Personal Consumption Expenditure Categories,  
in Producers' and Purchasers' Prices, 2002 Benchmark Input-Output Accounts—Continues**  
[Millions of dollars]

NIPA description and I-O descriptions	Producers' prices	Transportation costs	Wholesale and retail trade margins	Purchasers' prices	NIPA description and I-O descriptions	Producers' prices	Transportation costs	Wholesale and retail trade margins	Purchasers' prices
<b>Men's and boys' clothing</b>					<b>Flowers, seeds, and potted plants</b>				
Total	39,463	1,242	42,059	82,765	Total	13,955	1,004	12,272	27,231
3130 Yarn, fabrics, and other textile mill products	3	*	3	7	1110 Crop products	11,914	756	10,441	23,111
3140 Nonapparel textile products	41	2	42	85	3399 Other miscellaneous manufactured products	2,043	235	1,813	4,091
3150 Apparel	39,568	999	41,832	82,398	S004 Scrap, used and secondhand goods	-2	14	17	29
3391 Medical equipment and supplies	1	*	1	2	<b>Film and photographic supplies</b>				
3399 Other miscellaneous manufactured products	9	1	11	21	Total	1,228	37	1,459	2,724
S004 Scrap, used and secondhand goods	-159	241	170	252	3259 Other chemical products	1,189	37	1,422	2,647
<b>Women's and girls' clothing</b>					3351 Electric lighting equipment	31	*	32	63
Total	56,555	2,238	75,309	134,103	3353 Electrical equipment	7	*	6	14
3130 Yarn, fabrics, and other textile mill products	10	*	13	23	<b>Household cleaning products</b>				
3140 Nonapparel textile products	248	10	344	602	Total	16,972	731	13,102	30,805
3150 Apparel	56,708	1,559	74,361	132,627	2123 Nonmetallic mineral mining and quarrying	35	47	27	108
3391 Medical equipment and supplies	2	*	3	6	3251 Basic chemicals	20	2	10	31
3399 Other miscellaneous manufactured products	14	1	24	39	3253 Agricultural chemicals	3,153	103	2,325	5,581
S004 Scrap, used and secondhand goods	-427	667	565	805	3256 Soaps, cleaning compounds, and toiletries	12,946	440	10,005	23,391
<b>Children's and infants' clothing</b>					3259 Other chemical products	120	4	53	178
Total	5,217	504	6,471	12,193	332B Other fabricated metal products	45	1	32	78
3140 Nonapparel textile products	75	3	103	182	3391 Medical equipment and supplies	128	13	48	190
3150 Apparel	2,626	104	3,554	6,284	3399 Other miscellaneous manufactured products	525	121	601	1,247
3222 Converted paper products	2,574	100	2,612	5,287	<b>Household paper products</b>				
S004 Scrap, used and secondhand goods	-58	296	202	440	Total	16,650	744	9,790	27,184
<b>Clothing materials</b>					3130 Yarn, fabrics, and other textile mill products	5	*	2	7
Total	1,666	111	2,372	4,149	3140 Nonapparel textile products	131	6	76	213
3130 Yarn, fabrics, and other textile mill products	1,345	71	1,861	3,278	3210 Wood products	468	25	292	785
3140 Nonapparel textile products	108	4	167	280	3221 Pulp, paper, and paperboard	10,314	470	6,936	17,719
3399 Other miscellaneous manufactured products	82	9	114	205	3222 Converted paper products	2,532	183	1,190	3,904
5111 Newspapers, books, and directories	122	5	155	282	3230 Printed products	102	3	40	144
S004 Scrap, used and secondhand goods	9	21	74	104	3260 Plastics and rubber products	2,626	45	932	3,603
<b>Standard clothing issued to military personnel</b>					332B Other fabricated metal products	472	13	323	809
Total	269	9	80	358	<b>Household linens</b>				
3140 Nonapparel textile products	8	*	2	10	Total	12,784	389	11,941	25,115
3150 Apparel	214	8	67	289	3130 Yarn, fabrics, and other textile mill products	26	1	21	48
3160 Leather and allied products	47	1	11	59	3140 Nonapparel textile products	10,444	238	9,638	20,321
3399 Other miscellaneous manufactured products	*	*	*	*	3150 Apparel	308	13	505	827
<b>Shoes and other footwear</b>					3230 Printed products	1,108	34	864	2,006
Total	17,101	529	24,296	41,926	3399 Other miscellaneous manufactured products	898	103	913	1,914
3160 Leather and allied products	17,146	433	24,233	41,813	<b>Sewing items</b>				
S004 Scrap, used and secondhand goods	-45	96	63	113	Total	564	35	642	1,240
<b>Gasoline and other motor fuel</b>					3130 Yarn, fabrics, and other textile mill products	564	32	639	1,235
Total	57,941	4,029	97,772	159,741	S004 Scrap, used and secondhand goods	*	2	3	5
3240 Petroleum and coal products	57,941	4,029	97,772	159,741	<b>Miscellaneous household products</b>				
<b>Lubricants and fluids</b>					Total	3,195	129	3,462	6,786
Total	2,017	134	1,344	3,494	3230 Printed products	5	*	4	9
3240 Petroleum and coal products	2,015	134	1,342	3,492	3259 Other chemical products	87	3	71	161
3256 Soaps, cleaning compounds, and toiletries	2	*	1	3	331A Primary ferrous metal products	17	1	16	33
<b>Fuel oil</b>					3351 Electric lighting equipment	942	12	1,209	2,163
Total	7,952	262	4,335	12,548	3353 Electrical equipment	52	1	51	104
3240 Petroleum and coal products	7,952	262	4,335	12,548	3359 Other electrical equipment and components	1,247	15	1,193	2,455
<b>Other fuels</b>					3399 Other miscellaneous manufactured products	845	97	918	1,860
Total	845	204	626	1,675	<b>Hair, dental, shaving, and miscellaneous personal care products, excluding electrical products</b>				
2121 Coal mining	14	8	13	35	Total	23,605	1,184	16,433	41,222
3210 Wood products	143	8	88	239	3140 Nonapparel textile products	124	5	89	218
3240 Petroleum and coal products	222	163	225	610	3150 Apparel	14	1	18	33
3251 Basic chemicals	466	25	300	791	3221 Pulp, paper, and paperboard	32	1	523	556
<b>Pharmaceutical products</b>					3222 Converted paper products	1,971	77	2,001	4,048
Total	106,914	1,973	89,186	198,073	3256 Soaps, cleaning compounds, and toiletries	15,640	502	10,400	26,542
3240 Petroleum and coal products	62	3	76	141	3260 Plastics and rubber products	366	7	435	808
3251 Basic chemicals	128	7	180	315	3322 Cutlery and handtools	856	23	799	1,678
3254 Pharmaceuticals and medicines	106,724	1,962	88,930	197,616	3333 Commercial and service industry machinery	*	*	*	*
<b>Other medical products</b>					3339 Other general purpose machinery	101	3	105	209
Total	955	91	1,160	2,206	3359 Other electrical equipment and components	436	31	212	679
3260 Plastics and rubber products	134	3	139	276	3391 Medical equipment and supplies	3	*	2	6
3391 Medical equipment and supplies	821	89	1,021	1,931	3399 Other miscellaneous manufactured products	4,061	534	1,849	6,445
<b>Games, toys, and hobbies</b>					<b>Cosmetics, perfumes, bath, nail preparations, and implements</b>				
Total	17,947	2,273	21,962	42,183	Total	16,247	522	11,304	28,072
3222 Converted paper products	219	10	130	358	3256 Soaps, cleaning compounds, and toiletries	16,117	518	11,181	27,816
3230 Printed products	136	1	105	243	3322 Cutlery and handtools	130	3	123	256
3260 Plastics and rubber products	65	1	63	129	<b>Electric appliances for personal care</b>				
3399 Other miscellaneous manufactured products	17,192	1,852	20,697	39,741	Total	2,126	34	1,202	3,363
811A Electronic, commercial, and household goods repair	20	*	*	20	3322 Cutlery and handtools	3	*	2	6
S004 Scrap, used and secondhand goods	315	409	967	1,690	3352 Household appliances	2,123	34	1,200	3,357
<b>Pets and related products</b>					<b>Tobacco</b>				
Total	16,577	504	12,003	29,084	Total	43,320	516	26,142	69,978
1110 Crop products	267	33	171	472	3122 Tobacco products	43,320	516	26,142	69,978
1120 Animal products	2,562	58	926	3,545	<b>Newspapers and periodicals</b>				
2123 Nonmetallic mineral mining and quarrying	63	71	57	191	Total	28,468	889	5,102	34,459
3110 Food products	10,859	255	8,759	19,873	3230 Printed products	129	1	25	156
3140 Nonapparel textile products	72	2	48	122	5111 Newspapers, books, and directories	28,250	866	4,998	34,114
3160 Leather and allied products	346	13	297	656	5120 Motion pictures and sound recordings	96	15	77	188
3254 Pharmaceuticals and medicines	1,018	19	821	1,857	S004 Scrap, used and secondhand goods	-7	7	1	1
3259 Other chemical products	18	1	10	10					
3260 Plastics and rubber products	1,100	20	718	1,838					
3399 Other miscellaneous manufactured products	273	31	196	500					

**Appendix C. Input-Output Commodity Composition of NIPA Personal Consumption Expenditure Categories, in Producers' and Purchasers' Prices, 2002 Benchmark Input-Output Accounts—Continues**

[Millions of dollars]

NIPA description and I-O descriptions	Producers' prices	Transportation costs	Wholesale and retail trade margins	Purchasers' prices	NIPA description and I-O descriptions	Producers' prices	Transportation costs	Wholesale and retail trade margins	Purchasers' prices
<b>Stationery and miscellaneous printed materials</b>					<b>Nonprofit hospital services—HH</b>				
Total	9,027	502	10,839	20,369	Total	312,921			312,921
3222 Converted paper products	798	28	1,726	2,552	6220 Hospital care	312,921			312,921
3230 Printed products	564	22	984	1,570	<b>Proprietary hospital services</b>				
3255 Paints, coatings, and adhesives	689	26	1,212	1,926	Total	55,921			55,921
3260 Plastics and rubber products	2		5	7	6220 Hospital care	55,921			55,921
3399 Other miscellaneous manufactured products	1,984	207	3,836	6,027	<b>Government hospital services</b>				
5111 Newspapers, books, and directories	4,993	217	3,075	8,285	Total	99,962			99,962
S004 Scrap, used and secondhand goods	-2	2	2	2	6220 Hospital care	99,962			99,962
<b>Government expenditures abroad</b>					<b>Non-profit nursing home services—HH</b>				
Total	5,333			5,333	Total	35,437			35,437
S003 Noncomparable imports	5,333			5,333	6230 Nursing and residential care	35,437			35,437
<b>Other private services</b>					<b>Proprietary and government nursing home services</b>				
Total	219			219	Total	62,992			62,992
S003 Noncomparable imports	219			219	6230 Nursing and residential care	62,992			62,992
<b>Less: Personal remittances in kind to nonresidents</b>					<b>Motor vehicle maintenance and repair</b>				
Total	-1,518			-1,518	Total	137,058			137,058
S009 Rest of the world adjustment	-1,518			-1,518	48A0 Scenic and sightseeing transportation and support activities	981			981
<b>Rental of tenant-occupied mobile homes</b>					6100 Educational services	47			47
Total	7,126			7,126	8111 Automotive repair and maintenance	136,031			136,031
5310 Real estate	7,126			7,126	<b>Motor vehicle rental</b>				
<b>Rental of tenant-occupied stationary homes</b>					Total	8,356			8,356
Total	233,051			233,051	5321 Automotive equipment rental and leasing	8,356			8,356
5310 Real estate	233,051			233,051	<b>Auto leasing</b>				
<b>Rental of tenant landlord durables</b>					Total	19,453			19,453
Total	6,173			6,173	5321 Automotive equipment rental and leasing	19,453			19,453
5310 Real estate	6,173			6,173	<b>Truck leasing</b>				
<b>Imputed rental of owner-occupied mobile homes</b>					Total	14,289			14,289
Total	34,574			34,574	5321 Automotive equipment rental and leasing	14,289			14,289
S008 Owner-occupied dwellings	34,574			34,574	<b>Parking fees and tolls</b>				
<b>Imputed rental of owner-occupied stationary homes</b>					Total	12,304			12,304
Total	915,432			915,432	8120 Personal and laundry services	6,554			6,554
S008 Owner-occupied dwellings	915,432			915,432	S002 State and local government enterprises	5,750			5,750
<b>Rental value of farm dwellings</b>					<b>Railway transportation</b>				
Total	14,494			14,494	Total	726			726
5310 Real estate	5,054			5,054	4820 Rail transportation	726			726
S008 Owner-occupied dwellings	9,440			9,440	<b>Intercity buses</b>				
<b>Group housing</b>					Total	1,412			1,412
Total	927			927	4850 Transit and ground passenger transportation	1,412			1,412
7210 Accommodation	927			927	<b>Taxicab</b>				
<b>Water supply and sewage maintenance</b>					Total	3,454			3,454
Total	43,530			43,530	4850 Transit and ground passenger transportation	3,454			3,454
2213 Water, sewage and other systems	25,669			25,669	<b>Intracity mass transit</b>				
S002 State and local government enterprises	17,861			17,861	Total	11,293			11,293
<b>Garbage and trash collection</b>					4850 Transit and ground passenger transportation	11,293			11,293
Total	11,010			11,010	<b>Other road transportation services</b>				
5620 Waste management and remediation services	11,010			11,010	Total	7,356			7,356
<b>Electricity</b>					4850 Transit and ground passenger transportation	4,799			4,799
Total	107,106			107,106	48A0 Scenic and sightseeing transportation and support activities	1,128			1,128
2211 Electric power generation, transmission, and distribution	107,106			107,106	5615 Travel arrangement and reservation services	1,429			1,429
<b>Natural gas</b>					<b>Air transportation</b>				
Total	38,533			38,533	Total	39,515			39,515
2212 Natural gas distribution	38,490			38,490	4810 Air transportation	39,515			39,515
2213 Water, sewage and other systems	43			43	<b>Water transportation</b>				
<b>Physician services—HH</b>					Total	2,236			2,236
Total	269,099			269,099	4830 Water transportation	910			910
6210 Ambulatory health care services	269,099			269,099	48A0 Scenic and sightseeing transportation and support activities	1,326			1,326
<b>Dental services</b>					<b>Membership clubs and participant sport centers—HH</b>				
Total	75,936			75,936	Total	28,724			28,724
6210 Ambulatory health care services	75,936			75,936	5324 Machinery and equipment rental and leasing	26			26
<b>Home health care—HH</b>					6100 Educational services	41			41
Total	47,296			47,296	7130 Amusements, gambling, and recreation	28,657			28,657
6210 Ambulatory health care services	47,296			47,296	<b>Motion picture theaters</b>				
<b>Medical laboratories</b>					Total	9,576			9,576
Total	20,959			20,959	4810 Air transportation	16			16
6210 Ambulatory health care services	20,959			20,959	5120 Motion pictures and sound recordings	9,374			9,374
<b>Specialty outpatient care facilities and health and allied services—HH</b>					6100 Educational services	186			186
Total	63,879			63,879	<b>Live entertainment, excluding sports—HH</b>				
6210 Ambulatory health care services	63,879			63,879	Total	12,075			12,075
<b>All other professional medical services—HH</b>					5615 Travel arrangement and reservation services	992			992
Total	38,068			38,068	71A0 Performing arts, spectator sports, and museums	11,084			11,084
532A Consumer goods and general rentals	2,918			2,918					
6210 Ambulatory health care services	35,151			35,151					

**Appendix C. Input-Output Commodity Composition of NIPA Personal Consumption Expenditure Categories,  
in Producers' and Purchasers' Prices, 2002 Benchmark Input-Output Accounts—Continues**

[Millions of dollars]

NIPA description and I-O descriptions	Producers' prices	Transportation costs	Wholesale and retail trade margins	Purchasers' prices	NIPA description and I-O descriptions	Producers' prices	Transportation costs	Wholesale and retail trade margins	Purchasers' prices
<b>Spectator sports</b>					<b>Meals at drinking places</b>				
Total	13,472			13,472	Total	2,307			2,307
5615 Travel arrangement and reservation services	595			595	7220 Food services and drinking places	2,307			2,307
6100 Educational services	4,225			4,225					
71A0 Performing arts, spectator sports, and museums	8,652			8,652	<b>Alcohol in purchased meals</b>				
<b>Museums and libraries—HH</b>					Total	49,677			49,677
Total	4,729			4,729	4810 Air transportation	123			123
5190 Other information services	3,073			3,073	4820 Rail transportation	8			8
71A0 Performing arts, spectator sports, and museums	1,656			1,656	71A0 Performing arts, spectator sports, and museums	408			408
<b>Amusement parks, campgrounds, and related recreational services—HH</b>					7220 Food services and drinking places	49,139			49,139
Total	30,287	14	644	30,945	<b>Food furnished to employees (including military)</b>				
1140 Fish and other nonfarm animals	2,276	14	644	2,934	Total	8,089	237	1,186	9,512
5324 Machinery and equipment rental and leasing	51			51	1110 Crop products	305	55	108	467
532A Consumer goods and general rentals	1,177			1,177	1120 Animal products	158	9	4	172
6100 Educational services	4,429			4,429	1140 Fish and other nonfarm animals	29	1	3	34
7130 Amusements, gambling, and recreation	16,464			16,464	3110 Food products	7,441	170	1,030	8,641
71A0 Performing arts, spectator sports, and museums	1,321			1,321	3121 Beverage products	155	2	41	198
7210 Accommodation	4,542			4,542	<b>Hotels and motels</b>				
811A Electronic, commercial, and household goods repair	27			27	Total	42,592			42,592
<b>Cable and satellite television and radio services</b>					7210 Accommodation	42,592			42,592
Total	45,812			45,812	<b>Housing at schools</b>				
5170 Telecommunications	45,812			45,812	Total	11,196			11,196
<b>Video media rental</b>					7210 Accommodation	11,196			11,196
Total	7,996			7,996	<b>Financial services indirectly measured, commercial banks</b>				
532A Consumer goods and general rentals	7,996			7,996	Total	69,419			69,419
<b>Photo processing</b>					52A0 Monetary authorities, credit intermediation, and related activities	69,419			69,419
Total	6,137			6,137	<b>Financial services indirectly measured, other financial institutions</b>				
8120 Personal and laundry services	6,137			6,137	Total	96,734			96,734
<b>Photo studios</b>					5250 Funds, trusts, and other financial vehicles	52,582			52,582
Total	6,630			6,630	52A0 Monetary authorities, credit intermediation and related activities	44,152			44,152
5419 Other professional and technical services	6,630			6,630	<b>Financial service charges and fees</b>				
<b>Repair of audio-visual, photographic, and information processing equipment</b>					Total	67,491			67,491
Total	7,224			7,224	5170 Telecommunications	1,764			1,764
532A Consumer goods and general rentals	4,125			4,125	52A0 Monetary authorities, credit intermediation and related activities	65,533			65,533
811A Electronic, commercial, and household goods repair	3,098			3,098	S001 Federal Government enterprises	194			194
<b>Gambling</b>					<b>Direct commissions, exchange-listed equities</b>				
Total	74,171			74,171	Total	15,692			15,692
7130 Amusements, gambling, and recreation	54,509			54,509	5230 Securities, commodity contracts, investments, and related activities	15,692			15,692
71A0 Performing arts, spectator sports, and museums	3,413			3,413	<b>Direct commissions, other equity securities</b>				
S002 State and local government enterprises	16,249			16,249	Total	13,861			13,861
<b>Veterinary and other services for pets</b>					5230 Securities, commodity contracts, investments, and related activities	13,861			13,861
Total	16,512			16,512	<b>Indirect commissions, over-the-counter equity securities</b>				
1150 Support activities for agriculture and forestry	416			416	Total	1,064			1,064
5419 Other professional and technical services	12,267			12,267	5230 Securities, commodity contracts, investments, and related activities	1,064			1,064
8120 Personal and laundry services	3,829			3,829	<b>Indirect commissions, other equity securities</b>				
<b>Package tours</b>					Total	3,270			3,270
Total	5,961			5,961	5230 Securities, commodity contracts, investments, and related activities	3,270			3,270
5615 Travel arrangement and reservation services	5,961			5,961	<b>Mutual fund sales charges</b>				
<b>Maintenance and repair of recreational vehicles and sports equipment</b>					Total	8,364			8,364
Total	4,893	*	13	4,906	5230 Securities, commodity contracts, investments, and related activities	8,364			8,364
3345 Electronic instruments	27	*	13	40	<b>Portfolio management and investment advice services</b>				
811A Electronic, commercial, and household goods repair	4,866			4,866	Total	51,217			51,217
<b>Elementary and secondary school lunches</b>					5230 Securities, commodity contracts, investments, and related activities	51,217			51,217
Total	6,216			6,216	<b>Trust, fiduciary, and custody activities</b>				
7220 Food services and drinking places	6,216			6,216	Total	7,353			7,353
<b>Higher education school lunch</b>					5230 Securities, commodity contracts, investments, and related activities	7,353			7,353
Total	10,948			10,948	<b>Pension services</b>				
7220 Food services and drinking places	10,948			10,948	Total	27,662			27,662
<b>Meals at limited service eating places</b>					5250 Funds, trusts, and other financial vehicles	27,662			27,662
Total	155,625			155,625	<b>Life insurance services</b>				
7220 Food services and drinking places	155,625			155,625	Total	58,796			58,796
<b>Meals at restaurants</b>					5240 Insurance carriers and related services	58,796			58,796
Total	113,248			113,248	<b>Net household insurance</b>				
7220 Food services and drinking places	113,248			113,248	Total	4,215			4,215
<b>Meals at hotels</b>					5240 Insurance carriers and related services	4,215			4,215
Total	13,269			13,269	<b>Net medical care and hospitalization insurance</b>				
7220 Food services and drinking places	13,269			13,269	Total	80,176			80,176
<b>Meals at other retailers</b>					5240 Insurance carriers and related services	80,176			80,176
Total	24,206			24,206					
4820 Rail transportation	58			58					
5120 Motion pictures and sound recordings	3,148			3,148					
71A0 Performing arts, spectator sports, and museums	845			845					
7220 Food services and drinking places	20,154			20,154					



**Appendix C. Input-Output Commodity Composition of NIPA Personal Consumption Expenditure Categories, in Producers' and Purchasers' Prices, 2002 Benchmark Input-Output Accounts—Continues**

[Millions of dollars]

NIPA description and I-O descriptions	Producers' prices	Transportation costs	Wholesale and retail trade margins	Purchasers' prices	NIPA description and I-O descriptions	Producers' prices	Transportation costs	Wholesale and retail trade margins	Purchasers' prices
<b>Net income loss insurance</b>					<b>Hairdressing salons and personal grooming establishments</b>				
Total	1,999			1,999	Total	33,515			33,515
5240 Insurance carriers and related services	1,999			1,999	6100 Educational services	159			159
<b>Net workers' compensation insurance</b>					7210 Accommodation	1,594			1,594
Total	14,453			14,453	8120 Personal and laundry services	31,762			31,762
5240 Insurance carriers and related services	14,453			14,453	<b>Miscellaneous personal care services</b>				
<b>Net motor vehicle and other transportation insurance</b>					Total	39,119			39,119
Total	45,960			45,960	811A Electronic, commercial, and household goods repair	2,226			2,226
5240 Insurance carriers and related services	45,960			45,960	8120 Personal and laundry services	36,892			36,892
<b>Land line telephone services, local charges</b>					<b>Laundry and drycleaning services</b>				
Total	61,102			61,102	Total	13,332			13,332
5170 Telecommunications	59,695			59,695	7210 Accommodation	285			285
532A Consumer goods and general rentals	284			284	8120 Personal and laundry services	13,047			13,047
561A All other administrative and support services	666			666	<b>Clothing repair, rental and alterations</b>				
7210 Accommodation	458			458	Total	2,691			2,691
<b>Land line telephone services, long-distance charges</b>					532A Consumer goods and general rentals	939			939
Total	29,815			29,815	811A Electronic, commercial, and household goods repair	1,752			1,752
5170 Telecommunications	29,815			29,815	<b>Repair and hire of footwear</b>				
<b>Cellular telephone services</b>					Total	435			435
Total	48,902			48,902	811A Electronic, commercial, and household goods repair	435			435
5170 Telecommunications	48,902			48,902	<b>Child care—HH</b>				
<b>First class postal services (by U.S. postal facilities)</b>					Total	22,688			22,688
Total	7,721	3	8	7,733	6240 Social assistance	22,688			22,688
S001 Federal Government enterprises	7,720			7,720	<b>Social assistance—HH</b>				
S004 Scrap, used and secondhand goods	1	3	8	13	Total	62,190			62,190
<b>Other delivery services (by non-U.S. postal facilities)</b>					6230 Nursing and residential care	26,911			26,911
Total	1,731			1,731	6240 Social assistance	35,279			35,279
4920 Courier and messenger services	1,345			1,345	<b>Social advocacy and civic and social organizations—HH</b>				
561A All other administrative and support services	386			386	Total	7,774			7,774
<b>Internet access</b>					813A Religious, grantmaking, and social advocacy	1,654			1,654
Total	21,929			21,929	813B Civic, social, professional and similar organizations	6,119			6,119
5180 Data processing services	21,929			21,929	<b>Religious organization services—HH</b>				
<b>Proprietary and public higher education</b>					Total	4,931			4,931
Total	47,062			47,062	813A Religious, grantmaking, and social advocacy	4,931			4,931
6100 Educational services	47,062			47,062	<b>Foundations and grantmaking and giving services—HH</b>				
<b>Nonprofit private higher educational services—HH</b>					Total	466			466
Total	39,924			39,924	813A Religious, grantmaking, and social advocacy	466			466
6100 Educational services	39,924			39,924	<b>Domestic services</b>				
<b>Elementary and secondary schools—HH</b>					Total	18,441			18,441
Total	19,331			19,331	561A All other administrative and support services	5,926			5,926
6100 Educational services	19,331			19,331	8140 Private household services	12,515			12,515
<b>Day care and nursery schools—HH</b>					<b>Moving, storage, and freight services</b>				
Total	7,354			7,354	Total	11,833			11,833
6240 Social assistance	7,354			7,354	4810 Air transportation	23			23
<b>Commercial and vocational schools—HH</b>					4830 Water transportation	3			3
Total	26,691			26,691	4840 Truck transportation	9,225			9,225
6100 Educational services	26,691			26,691	4930 Warehousing and storage	291			291
<b>Legal services—HH</b>					5310 Real estate	2,291			2,291
Total	75,897			75,897	<b>Repair of furniture, furnishings, and floor coverings</b>				
5411 Legal services	75,897			75,897	Total	2,139			2,139
<b>Accounting and other business services</b>					811A Electronic, commercial, and household goods repair	2,139			2,139
Total	20,673		1	20,674	<b>Repair of household appliances</b>				
3230 Printed products	38		1	39	Total	3,482			3,482
4A00 Retail trade	870			870	532A Consumer goods and general rentals	423			423
5412 Accounting, tax preparation, bookkeeping, and payroll services	12,498			12,498	811A Electronic, commercial, and household goods repair	3,059			3,059
5414 Specialized design services	1,702			1,702	<b>Other household services</b>				
5418 Advertising and related services	960			960	Total	9,677			9,677
5613 Employment services	662			662	561A All other administrative and support services	8,933			8,933
561A All other administrative and support services	3,638			3,638	811A Electronic, commercial, and household goods repair	744			744
813B Civic, social, professional and similar organizations	306			306	<b>Passenger fares for foreign travel</b>				
<b>Labor organization services—HH</b>					Total	30,926			30,926
Total	10,006			10,006	4810 Air transportation	24,196			24,196
813B Civic, social, professional and similar organizations	9,842			9,842	4830 Water transportation	6,730			6,730
S003 Noncomparable imports	164			164	<b>U.S. travel outside the U.S.</b>				
<b>Professional association services—HH</b>					Total	44,769			44,769
Total	5,392			5,392	S003 Noncomparable imports	44,769			44,769
813B Civic, social, professional and similar organizations	5,392			5,392	<b>U.S. student expenditures</b>				
<b>Funeral and burial services</b>					Total	2,701			2,701
Total	15,791	40	708	16,539	S003 Noncomparable imports	2,701			2,701
3270 Nonmetallic mineral products	1,654	39	678	2,370	<b>U.S. student expenditures</b>				
332B Other fabricated metal products	37	1	31	69	Total	2,701			2,701
4810 Air transportation	147			147	S003 Noncomparable imports	2,701			2,701
8120 Personal and laundry services	13,953			13,953					

**Appendix C. Input-Output Commodity Composition of NIPA Personal Consumption Expenditure Categories,  
in Producers' and Purchasers' Prices, 2002 Benchmark Input-Output Accounts—Table Ends**

[Millions of dollars]

NIPA description and I-O descriptions	Producers' prices	Transportation costs	Wholesale and retail trade margins	Purchasers' prices	NIPA description and I-O descriptions	Producers' prices	Transportation costs	Wholesale and retail trade margins	Purchasers' prices
<b>Less: Expenditures in the United States by nonresidents</b>					<b>Residential mental health and substance abuse—NPISH</b>				
Total .....	-87,334			-87,334	Total .....	1,462			1,462
S009 Rest of the world adjustment .....	-87,334			-87,334	6230 Nursing and residential care .....	1,462			1,462
<b>Physician services—NPISH</b>					<b>Individual and family services—NPISH</b>				
Total .....	270			270	Total .....	18,346			18,346
6210 Ambulatory health care services .....	270			270	6240 Social assistance .....	18,346			18,346
<b>Home health care—NPISH</b>					<b>Vocational rehabilitation services—NPISH</b>				
Total .....	51			51	Total .....	4,011			4,011
6210 Ambulatory health care services .....	51			51	6240 Social assistance .....	4,011			4,011
<b>Other paramedical services—NPISH</b>					<b>Community food and housing, emergency, and other relief services—NPISH</b>				
Total .....	5,898			5,898	Total .....	8,722			8,722
6210 Ambulatory health care services .....	5,898			5,898	6240 Social assistance .....	8,722			8,722
<b>Hospital services—NPISH</b>					<b>Other residential care facilities—NPISH</b>				
Total .....	1,674			1,674	Total .....	1,769			1,769
6220 Hospital care .....	1,674			1,674	6230 Nursing and residential care .....	1,769			1,769
<b>Nursing homes—NPISH</b>					<b>Religious organizations—NPISH</b>				
Total .....	2,600			2,600	Total .....	59,449			59,449
6230 Nursing and residential care .....	2,600			2,600	813A Religious, grantmaking, and social advocacy .....	59,449			59,449
<b>Recreation—NPISH</b>					<b>Grantmaking and giving services—NPISH</b>				
Total .....	14,376			14,376	Total .....	13,281			13,281
5151 Radio and television broadcasting .....	2,463			2,463	813A Religious, grantmaking, and social advocacy .....	13,281			13,281
6100 Educational services .....	166			166	<b>Social advocacy—NPISH</b>				
7130 Amusements, gambling, and recreation .....	2,146			2,146	Total .....	7,782			7,782
71A0 Performing arts, spectator sports, and museums .....	9,601			9,601	813A Religious, grantmaking, and social advocacy .....	7,782			7,782
<b>Nursery schools—NPISH</b>					<b>Civic and social organizations—NPISH</b>				
Total .....	1,477			1,477	Total .....	3,083			3,083
6240 Social assistance .....	1,477			1,477	813B Civic, social, professional and similar organizations .....	3,083			3,083
<b>Elementary and secondary schools—NPISH</b>					<b>Labor unions and political organizations—NPISH</b>				
Total .....	8,817			8,817	Total .....	4,319			4,319
6100 Educational services .....	8,817			8,817	813B Civic, social, professional and similar organizations .....	4,319			4,319
<b>Private higher education—NPISH</b>					<b>Professional associations—NPISH</b>				
Total .....	18,773			18,773	Total .....	2,152			2,152
6100 Educational services .....	18,773			18,773	813B Civic, social, professional and similar organizations .....	2,152			2,152
<b>Other education and research—NPISH</b>					<b>All other similar organizations, excluding condominium and homeowners associations—NPISH</b>				
Total .....	21,158			21,158	Total .....	-397			-397
5417 Scientific research and development services .....	10,588			10,588	813B Civic, social, professional, and similar organizations .....	-397			-397
6100 Educational services .....	6,283			6,283	<b>Legal services—NPISH</b>				
813A Religious, grantmaking, and social advocacy .....	4,286			4,286	Total .....	-87			-87
<b>Child care—NPISH</b>					5411 Legal services .....	-87			-87
Total .....	2,945			2,945					
6240 Social assistance .....	2,945			2,945					
<b>Home for the elderly—NPISH</b>									
Total .....	372			372					
6230 Nursing and residential care .....	372			372					

\* Less than +/- \$500,000

NOTE: Detail may not add to total due to rounding.

HH Households. Equals household consumption expenditures.

NPISH Nonprofit institutions serving households. Equals final consumption expenditures of nonprofit institutions serving households.

**Appendix D. Input-Output Commodity Composition of NIPA Private Equipment and Software Expenditure Categories, in Producers' and Purchasers' Prices, 2002 Benchmark Input-Output Accounts—Continues**

[Millions of dollars]

NIPA description and I-O descriptions	Producers' prices	Transportation costs	Wholesale and retail trade margins	Purchasers' prices	NIPA description and I-O descriptions	Producers' prices	Transportation costs	Wholesale and retail trade margins	Purchasers' prices
<b>Computers and peripheral equipment</b>					<b>General industrial, including materials handling, equipment</b>				
Total	61,904	2,364	15,456	79,724	Total	35,528	866	9,107	45,501
3341 Computer and peripheral equipment	52,601	458	15,164	68,223	3331 Agriculture, construction, and mining machinery	51	2	9	62
5415 Computer systems design and related services	9,299			9,299	3334 HVAC and commercial refrigeration equipment	2,237	61	361	2,659
S004 Scrap, used and secondhand goods	4	1,906	292	2,203	3339 Other general purpose machinery	30,376	722	6,870	37,968
<b>Software</b>					<b>Electrical transmission, distribution, and industrial apparatus</b>				
Total	176,313	126	4,607	181,046	Total	17,417	323	2,536	20,277
5112 Software publishers	52,132	126	4,607	56,865	3345 Electronic instruments	3,866	53	134	4,053
5415 Computer systems design and related services	121,423			121,423	3353 Electrical equipment	9,340	230	1,981	11,552
S003 Noncomparable imports	2,758			2,758	3359 Other electrical equipment and components	2,892	40	421	3,353
<b>Communication equipment</b>					<b>Light trucks (including utility vehicles)</b>				
Total	74,151	684	8,900	83,735	Total	24,070	1,247	8,335	33,652
3341 Computer and peripheral equipment	34		15	50	3361 Motor vehicles	63,080	1,229	4,865	69,174
3345 Electronic instruments	10,551	147	1,268	11,965	S004 Scrap, used and secondhand goods	-39,011	18	3,470	-35,523
334A Audio, video, and communications equipment	50,532	535	7,578	58,644	<b>Other trucks, buses, and truck trailers</b>				
3359 Other electrical equipment and components	169	2	40	210	Total	17,811	321	3,241	21,373
336A Aerospace products and parts	81			81	3361 Motor vehicles	12,407	239	2,316	14,962
5170 Telecommunications	7,110			7,110	336A Motor vehicle bodies, trailers, and parts	5,484	67	814	6,366
5413 Architectural, engineering, and related services	5,607			5,607	S004 Scrap, used and secondhand goods	-80	14	110	44
S004 Scrap, used and secondhand goods	67			67	<b>Autos</b>				
<b>Medical equipment and instruments</b>					<b>Aircraft</b>				
Total	35,866	2,086	5,833	43,785	Total	25,429	268	1,542	27,239
3345 Electronic instruments	15,087	210	2,944	18,242	3345 Electronic instruments	539	7	65	611
3391 Medical equipment and supplies	17,922	1,876	2,889	22,687	336A Aerospace products and parts	26,318	152	164	26,634
5413 Architectural, engineering, and related services	2,858			2,858	336A Motor vehicle bodies, trailers, and parts	402	6	7	415
S004 Scrap, used and secondhand goods	-2			-2	S004 Scrap, used and secondhand goods	-1,830	103	1,306	-421
<b>Nonmedical instruments and related equipment</b>					<b>Ships and boats</b>				
Total	17,600	477	1,669	19,747	Total	3,462	55	310	3,826
3345 Electronic instruments	13,533	189	1,246	14,969	336B Other transportation equipment	3,421	54	292	3,768
3391 Medical equipment and supplies	2,712	287	423	3,422	S004 Scrap, used and secondhand goods	41	1	17	59
5413 Architectural, engineering, and related services	1,278			1,278	<b>Railroad equipment</b>				
S004 Scrap, used and secondhand goods	77			77	Total	4,506	121	160	4,787
<b>Photocopy and related equipment</b>					<b>Furniture and fixtures</b>				
Total	3,111	42	1,423	4,576	Total	26,008	2,942	7,082	36,032
3333 Commercial and service industry machinery	2,637	42	1,423	4,102	3370 Furniture and related products	23,791	2,742	7,000	33,534
5413 Architectural, engineering, and related services	370			370	3399 Other miscellaneous manufactured products	12	1	1	15
S004 Scrap, used and secondhand goods	104			104	5413 Architectural, engineering, and related services	2,361			2,361
<b>Office and accounting equipment</b>					<b>Agricultural machinery, including tractors</b>				
Total	3,552	49	1,567	5,168	Total	12,353	450	4,549	17,353
3333 Commercial and service industry machinery	2,089	40	1,219	3,348	3331 Agriculture, construction, and mining machinery	11,386	417	3,158	14,961
3341 Computer and peripheral equipment	1,048	9	347	1,405	5413 Architectural, engineering, and related services	1,055			1,055
3399 Other miscellaneous manufactured products	1	*	1	2	S004 Scrap, used and secondhand goods	-87	34	1,391	1,337
5413 Architectural, engineering, and related services	322			322	<b>Construction machinery, including tractors</b>				
S004 Scrap, used and secondhand goods	92			92	Total	16,225	642	2,686	19,554
<b>Fabricated metal products</b>					<b>Mining and oilfield machinery</b>				
Total	9,958	118	622	10,700	Total	2,815	93	1,200	4,107
2122 Metal ores mining	46	12	1	59	2130 Mining support services	149			149
3251 Basic chemicals	2,510			2,510	3331 Agriculture, construction, and mining machinery	1,993	43	495	2,531
3322 Cutlery and handtools	181	5	44	229	3339 Other general purpose machinery	477	13	84	574
3323 Architectural and structural metal products	417	5	70	491	5413 Architectural, engineering, and related services	1,247			1,247
3324 Boilers, tanks, and shipping containers	3,511	49	50	3,609	S004 Scrap, used and secondhand goods	126	23	321	471
332B Other fabricated metal products	2,615	47	453	3,115	<b>Engines and turbines</b>				
3334 HVAC and commercial refrigeration equipment	23	*	5	29	Total	11,153	121	304	11,578
3370 Furniture and related products	9	1		10	3336 Turbine and power transmission equipment	10,471	121	304	10,896
5413 Architectural, engineering, and related services	646			646	5413 Architectural, engineering, and related services	682			682
<b>Metalworking machinery</b>					<b>Special industrial machinery, n.e.c.</b>				
Total	20,540	333	2,100	22,973	Total	26,181	545	4,005	30,732
3335 Metalworking machinery	19,188	333	2,100	21,621	3260 Plastics and rubber products	91	2	17	109
5413 Architectural, engineering, and related services	1,495			1,495	3322 Cutlery and handtools	66	1	16	83
S004 Scrap, used and secondhand goods	-143			-143	3332 Industrial machinery	23,611	499	3,470	27,581
<b>Special industrial machinery, n.e.c.</b>					<b>Mining and oilfield machinery</b>				
Total	26,181	545	4,005	30,732	Total	2,815	93	1,200	4,107
3260 Plastics and rubber products	91	2	17	109	2130 Mining support services	149			149
3322 Cutlery and handtools	66	1	16	83	3331 Agriculture, construction, and mining machinery	1,993	43	495	2,531
3332 Industrial machinery	23,611	499	3,470	27,581	3339 Other general purpose machinery	477	13	84	574
3333 Commercial and service industry machinery	469	9	177	655	5413 Architectural, engineering, and related services	1,247			1,247
5413 Architectural, engineering, and related services	1,983			1,983	S004 Scrap, used and secondhand goods	126	23	321	471
S004 Scrap, used and secondhand goods	-38	34	326	322	<b>Engines and turbines</b>				

**Appendix D. Input-Output Commodity Composition of NIPA Private Equipment and Software Expenditure Categories,  
in Producers' and Purchasers' Prices, 2002 Benchmark Input-Output Accounts—Table Ends**

[Millions of dollars]

NIPA description and I-O descriptions	Producers' prices	Transportation costs	Wholesale and retail trade margins	Purchasers' prices	NIPA description and I-O descriptions	Producers' prices	Transportation costs	Wholesale and retail trade margins	Purchasers' prices
<b>Service industry machinery</b>					3210 Wood products .....	1			1
Total .....	15,059	304	4,117	19,480	3260 Plastics and rubber products .....	34	1	30	65
3333 Commercial and service industry machinery .....	7,984	170	2,751	10,905	3322 Cutlery and handtools .....	15	*	3	18
3334 HVAC and commercial refrigeration equipment .....	5,013	114	1,126	6,253	3331 Agriculture, construction, and mining machinery .....	6,158	177	7,593	13,927
3339 Other general purpose machinery .....	736	20	240	997	3333 Commercial and service industry machinery .....	19	*	7	26
5413 Architectural, engineering, and related services .....	1,269			1,269	336A Motor vehicle bodies, trailers, and parts .....	933	10	353	1,296
S004 Scrap, used and secondhand goods .....	56			56	336B Other transportation equipment .....	1,759	20	659	2,437
<b>Electrical equipment, n.e.c.</b>					3399 Other miscellaneous manufactured products .....	10,794	1,471	1,694	13,959
Total .....	4,310	85	582	4,977	5413 Architectural, engineering, and related services .....	2,653			2,653
3346 Magnetic media products .....	179	2	28	210	S004 Scrap, used and secondhand goods .....	71	2	72	144
3351 Electric lighting equipment .....	627	14	118	759	<b>Less: sale of equipment scrap, excluding autos</b>				
3352 Household appliances .....	810	16	87	913	Total .....	-2,802			-2,802
3359 Other electrical equipment and components .....	2,343	52	349	2,745	S004 Scrap, used and secondhand goods .....	-2,802			-2,802
5413 Architectural, engineering, and related services .....	335			335	<b>Residential equipment</b>				
S004 Scrap, used and secondhand goods .....	15			15	Total .....	5,468	242	2,322	8,032
<b>Other nonresidential equipment</b>					3140 Nonapparel textile products .....	1,043	65	741	1,849
Total .....	26,034	1,905	12,966	40,905	3260 Plastics and rubber products .....	19	*	16	35
3130 Yarn, fabrics, and other textile mill products .....	4	*	3	8	334A Audio, video, and communications equipment .....	203	3	94	300
3140 Nonapparel textile products .....	3,594	224	2,551	6,369	3352 Household appliances .....	3,848	136	1,372	5,357
					3370 Furniture and related products .....	354	38	99	491

\* Less than +/- \$500,000

NOTE: Detail may not add to total due to rounding.

**Appendix E. Relationship of Exports and Imports in the Input-Output Accounts to the National Income and Product Accounts, 2002**

[Millions of Dollars]

	Total	Goods	Services
Total exports, NIPAs .....	1,005,921	697,565	308,356
Less: U.S. merchandise returned .....	32,602	32,602	
Reexports .....	63,258	63,258	
Other transactions .....	309		309
Plus: Exports identified in Census documents <sup>1</sup> .....		7,393	-7,393
Equals: Exports, I-O .....	909,752	609,098	300,654
Total imports, NIPAs .....	1,431,554	1,190,591	240,963
Less: U.S. merchandise returned .....	32,602	32,602	
Reexports .....	63,258	63,258	
Other transactions .....	309		309
Plus: Imports identified in Census documents <sup>1</sup> .....		671	-671
Equals: Imports, I-O .....	1,335,385	1,095,402	239,983

1. NIPA Imports of goods include a revised estimate of NIPA gold over the estimate included in the starting point for foreign merchandise transactions in the 2002 benchmark I-O accounts—the NIPA imports of goods as

published in the August 2006 SURVEY OF CURRENT BUSINESS, Table 4.3B, "Relation of Foreign Transactions in the National Income and Product Accounts to the Corresponding Items in the International Transactions Accounts."