

Annual Industry Accounts

Revised Statistics for 2007–2009

By Tameka R. L. Harris, William A. Jolliff, Amanda S. Lyndaker, and Matthew B. Schroeder

IN 2009, downturns in durable-goods manufacturing and professional, scientific, and technical services and the continued contraction of construction were among the leading contributors to the decline in U.S. economic growth, according to revised statistics on real gross domestic product (GDP) by industry from the Bureau of Economic Analysis. The revised statistics, released on December 14, 2010, reflect the incorporation of newly available source data. The economic downturn was widespread, with 16 of the 22 major industry groups contributing to the decline in real GDP growth by industry.

Highlights for 2009 include the following:

- Real value added fell 2.6 percent in 2009, following no growth in 2008. Private goods-producing industries and private services-producing industries contributed significantly to the downturn. In 2009, private goods-producing industries continued to decline, and private services-producing industries declined for the first time since 1982.

- Real value added for the professional, scientific, and technical services industry turned down in 2009, led by a decline in “miscellaneous professional, scientific, and technical services”.
- The information-communications-technology-producing industries declined in 2009 after averaging double-digit growth over the past decade. Real value added in the information industry declined 2.5 percent in 2009, the first decline since 2000. Broadcasting and telecommunications was the primary contributor to the downturn.
- GDP price growth decelerated to 0.9 percent in 2009 from 2.2 percent in 2008. Private goods-producing industries subtracted from GDP price growth for the first time since 2002, led by downturns in the mining and agriculture industries.

The revised statistics on the annual industry accounts presented in this article incorporate more accurate and more detailed information on the industry composition of GDP growth than was available for the

Chart 1. Annual Growth in Real GDP

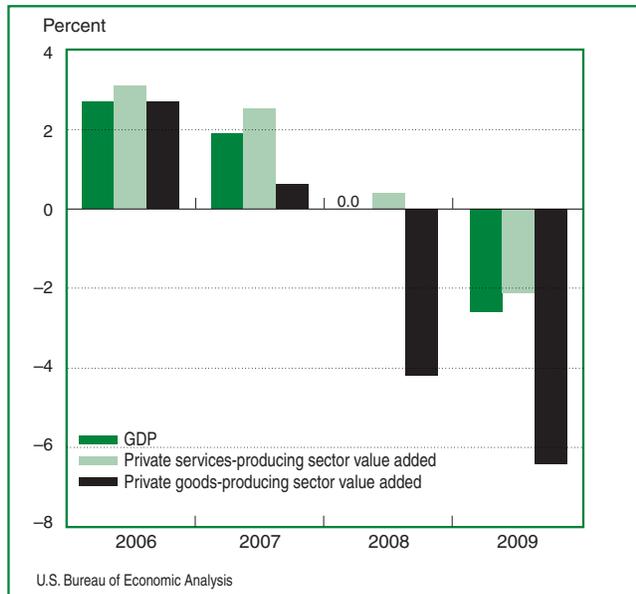
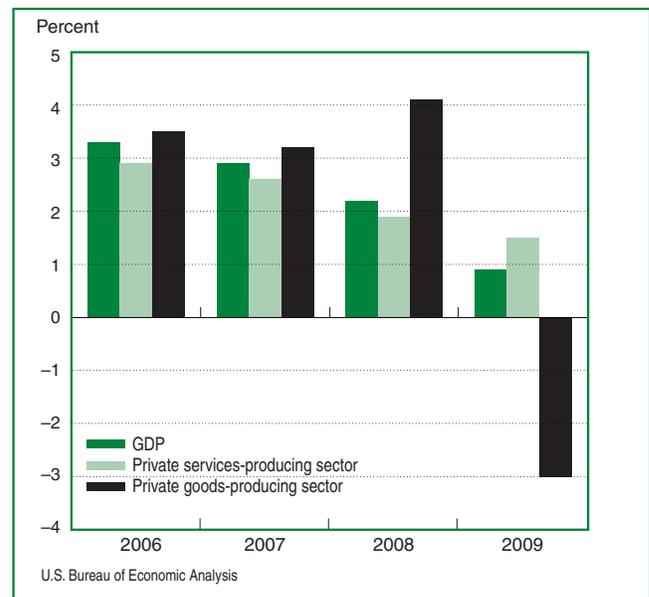


Chart 2. Annual Growth in Value-Added Prices



“advance” 2009 statistics released on May 25, 2010.¹ In particular, these updated statistics incorporate Census Bureau annual survey data on industry output, Bureau of Labor Statistics data on producer prices, and BEA statistics on final demand and revised corporate profits by industry from the 2010 annual revision of the national income and product accounts (NIPAs) (for information about the principal sources of data used, see tables E and F on pages 17–20).

For 2009, these source data were compiled for the first time within an input-output (I-O) framework that balances and reconciles industry production and commodity usages. The framework provides information on value added for 65 industries and information on gross output and intermediate inputs for 65 industries and commodities (see “Methodology” on page 16). The previously published “advance” statistics for

2009 were developed from summary source data; value added was presented for 22 industry groups.

Data Availability

The annual tables for GDP by industry and the input-output (I-O) accounts are available on BEA’s Web site.

For the GDP by industry tables, online tools are available for users to customize the tables so that they show data only for the industries and years of interest. Tools are also available for creating graphs of data and downloading tables to update spreadsheets.

For the I-O tables, online tools are available for users to create and store unique levels of aggregation of data for specific commodities and industries. Tools are also available for viewing and downloading entire I-O tables, including the “make” and “use” tables.

For a guide to the annual industry accounts, see “[A Primer on BEA’s Industry Accounts](#)” in the June 2009 SURVEY OF CURRENT BUSINESS.

1. See Matthew M. Donahoe, Edward T. Morgan, Kevin J. Muck, and Ricky L. Stewart, “[Annual Industry Accounts: Advance Statistics on GDP by Industry for 2009 and Revised Statistics for 1998–2008, Comprehensive Revision](#),” SURVEY OF CURRENT BUSINESS 90 (June 2010): 14–29.

Real Value Added

Table A. Percent Changes in Real Value Added by Industry Group

	2006	2007	2008	2009
Gross domestic product	2.7	1.9	0.0	-2.6
Private industries	3.0	2.1	-0.7	-3.0
Agriculture, forestry, fishing, and hunting.....	0.8	-7.4	9.1	5.3
Mining.....	8.1	3.0	-3.4	27.4
Utilities.....	0.7	3.4	6.0	-9.0
Construction.....	-2.9	-5.3	-5.7	-15.6
Manufacturing.....	4.4	3.3	-4.8	-8.6
Durable goods.....	6.8	3.7	1.0	-12.7
Nondurable goods.....	1.3	2.8	-11.8	-3.4
Wholesale trade.....	3.1	5.6	-0.1	2.8
Retail trade.....	1.8	1.3	-6.9	-1.9
Transportation and warehousing.....	4.5	0.9	0.8	-13.0
Information.....	1.0	8.5	4.1	-2.5
Finance, insurance, real estate, rental, and leasing.....	4.2	1.7	0.0	1.1
Finance and insurance.....	6.7	-2.2	-3.9	6.1
Real estate and rental and leasing.....	2.6	4.3	2.5	-1.8
Professional and business services.....	3.4	2.5	3.1	-5.0
Professional, scientific, and technical services.....	4.7	3.0	4.2	-3.4
Management of companies and enterprises.....	1.0	-1.4	2.4	-2.1
Administrative and waste management services.....	1.7	3.9	0.7	-11.1
Educational services, health care, and social assistance.....	3.3	1.8	4.0	1.1
Educational services.....	0.8	0.7	1.7	-1.4
Health care and social assistance.....	3.7	1.9	4.3	1.5
Arts, entertainment, recreation, accommodation, and food services.....	3.0	1.5	-4.6	-8.7
Arts, entertainment, and recreation.....	4.9	2.8	-1.6	-7.8
Accommodation and food services.....	2.4	1.1	-5.6	-9.0
Other services, except government.....	0.1	0.2	-4.8	-6.8
Government	0.5	0.8	2.1	0.8
Federal.....	-0.3	0.3	2.6	3.6
State and local.....	0.8	1.0	1.9	-0.5
Addenda:				
Private goods-producing industries ¹	2.7	0.6	-4.2	-6.4
Private services-producing industries ²	3.1	2.5	0.4	-2.1
Information-communications-technology-producing industries ³	7.8	8.8	8.8	-0.5

1. Consists of agriculture, forestry, fishing, and hunting; mining; construction; and manufacturing.

2. Consists of utilities; 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; and other services, except government.

3. Consists of computer and electronic products; publishing industries (includes software); information and data processing services; and computer systems design and related services.

Real GDP declined 2.6 percent in 2009, reflecting declines in 16 of the 22 major industry groups. Declines in professional and business services, durable-goods manufacturing, and construction industries were among the largest contributors to the decline in real GDP.

Mining grew 27.4 percent in 2009, primarily reflecting steady demand despite sharp declines in prices for oil and gas extraction.

Construction fell for the fifth consecutive year. Real value added for this industry was at its lowest level since 1991.

Manufacturing decreased for the second consecutive year. This decrease was larger than the 4.8 percent decrease in 2008, reflecting a steep decline in durables-goods manufacturing in which 10 of the 11 durable-goods industries declined or decelerated in 2009.

Finance and insurance grew 6.1 percent in 2009, following declines in 2007 and 2008; the upturn was due to a turnaround in insurance carriers and related activities that reflected an increase in business income for the insurance carriers.

Health care and social assistance slowed in 2009. The slowdown was due to decelerations in ambulatory health care services, hospitals and nursing and residential care facilities, and social assistance, growth in these industries has been sustained since 1982.

Information-communications-technology-producing industries fell in 2009, its first fall since the series began in 1987, reflecting a decrease in the publishing industry and a deceleration in the computer and electronic products industry.

Real Value Added

Table B. Contributions to Percent Change in Real GDP by Industry Group

[Percentage points]

	2006	2007	2008	2009
Gross domestic product ¹	2.7	1.9	0.0	-2.6
Private industries	2.63	1.83	-0.58	-2.63
Agriculture, forestry, fishing, and hunting.....	0.01	-0.07	0.09	0.05
Mining	0.13	0.05	-0.07	0.45
Utilities	0.01	0.06	0.10	-0.17
Construction.....	-0.15	-0.26	-0.26	-0.68
Manufacturing	0.54	0.40	-0.58	-1.02
Durable goods	0.46	0.25	0.07	-0.85
Nondurable goods	0.07	0.15	-0.65	-0.18
Wholesale trade	0.18	0.32	-0.01	0.15
Retail trade	0.12	0.08	-0.44	-0.11
Transportation and warehousing.....	0.13	0.03	0.02	-0.39
Information.....	0.04	0.37	0.18	-0.11
Finance, insurance, real estate, rental, and leasing	0.86	0.36	0.00	0.23
Finance and insurance.....	0.54	-0.18	-0.31	0.47
Real estate and rental and leasing.....	0.33	0.54	0.31	-0.23
Professional and business services.....	0.39	0.30	0.37	-0.62
Professional, scientific, and technical services	0.32	0.21	0.31	-0.26
Management of companies and enterprises	0.02	-0.02	0.04	-0.04
Administrative and waste management services	0.05	0.11	0.02	-0.32
Educational services, health care, and social assistance...	0.25	0.13	0.30	0.09
Educational services	0.01	0.01	0.02	-0.02
Health care and social assistance.....	0.24	0.13	0.29	0.11
Arts, entertainment, recreation, accommodation, and food services	0.11	0.06	-0.18	-0.33
Arts, entertainment, and recreation.....	0.04	0.03	-0.01	-0.07
Accommodation and food services	0.07	0.03	-0.16	-0.26
Other services, except government	0.00	0.01	-0.12	-0.16
Government	0.06	0.10	0.27	0.10
Federal.....	-0.01	0.01	0.10	0.15
State and local.....	0.07	0.09	0.16	-0.04
Addenda:				
Private goods-producing industries ²	0.53	0.12	-0.82	-1.20
Private services-producing industries ³	2.11	1.71	0.24	-1.42
Information-communications-technology-producing industries ⁴	0.32	0.36	0.35	-0.02

Construction contributed significantly to the downturn in the economy. It accounted for 16 percent of the downturn in real GDP in 2009, reflecting a contraction in both residential and nonresidential construction.

Durable-goods manufacturing turned down and accounted for nearly 35 percent of the downturn in real GDP growth.

The information sector contracted in 2009, its first contraction since 2000. The contraction was due to downturns in publishing industries and broadcasting and telecommunications, which accounted for 10 percent of the downturn in real GDP growth.

Finance and insurance turned up in 2009, providing the largest positive contribution to GDP growth. The upturn reflected a sharp turnaround in insurance carriers and related activities and a much slower rate of decline in securities, commodities, and investment services.

Private services-producing industries fell for the first time since 1982 and accounted for more than 60 percent of the downturn in real GDP growth in 2009.

1. The estimates of gross domestic product under the contributions columns are percent changes

2. Consists of agriculture, forestry, fishing, and hunting; mining; construction; and manufacturing.

3. Consists of utilities; 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; and other services, except government.

4. Consists of computer and electronic products; publishing industries (includes software); information and data processing services; and computer systems design and related services.

NOTE. Percentage-point contributions do not sum to the percent change in real gross domestic product because the contribution of the "Not allocated by industry" line is excluded.

Value-Added Prices

**Table C. Percent Changes in Chain-Type Price Indexes
for Value Added by Industry Group**

	2006	2007	2008	2009
Gross domestic product	3.3	2.9	2.2	0.9
Private industries	3.0	2.7	2.4	0.5
Agriculture, forestry, fishing, and hunting.....	-4.4	27.6	1.4	-21.0
Mining.....	10.3	7.8	29.1	-40.4
Utilities.....	14.0	1.8	-0.4	12.2
Construction.....	9.6	6.6	0.6	2.1
Manufacturing.....	0.9	-0.4	1.9	5.3
Durable goods.....	-1.5	-1.5	-2.7	7.2
Nondurable goods.....	4.1	1.0	8.0	3.1
Wholesale trade.....	3.0	0.1	1.3	-7.7
Retail trade.....	2.4	-0.1	1.9	-0.5
Transportation and warehousing.....	2.4	1.6	2.4	6.9
Information.....	-0.8	-1.6	-1.0	0.5
Finance, insurance, real estate, rental, and leasing.....	2.3	2.3	2.9	1.1
Finance and insurance.....	0.8	2.7	3.2	0.3
Real estate and rental and leasing.....	3.3	2.1	2.7	1.5
Professional and business services.....	4.0	5.5	0.9	1.3
Professional, scientific, and technical services.....	3.9	4.9	2.0	1.1
Management of companies and enterprises.....	6.6	11.4	-1.3	-3.2
Administrative and waste management services.....	2.8	3.6	-0.5	4.7
Educational services, health care, and social assistance.....	3.0	4.4	2.5	4.4
Educational services.....	6.3	6.0	5.3	6.9
Health care and social assistance.....	2.6	4.1	2.1	4.0
Arts, entertainment, recreation, accommodation, and food services.....	3.1	5.0	3.0	5.0
Arts, entertainment, and recreation.....	2.9	3.3	2.2	2.2
Accommodation and food services.....	3.1	5.6	3.2	5.9
Other services, except government.....	4.1	3.6	3.9	5.6
Government	4.7	4.7	3.2	2.8
Federal.....	5.3	4.6	2.3	1.7
State and local.....	4.4	4.8	3.6	3.3
Addenda:				
Private goods-producing industries ¹	3.5	3.2	4.1	-3.0
Private services-producing industries ²	2.9	2.6	1.9	1.4
Information-communications-technology-producing industries ³	-3.3	-4.9	-3.8	-0.7

Growth in the GDP prices decelerated to 0.9 percent in 2009. The slowdown reflected downturns in mining, wholesale trade, and agriculture.

Value-added prices for agriculture, forestry, fishing, and hunting declined, reflecting a downturn in farm prices, which fell 25.3 percent in 2009 after decelerating 0.8 percent in 2008.

Value-added prices for mining fell 40.4 percent because of declines in the three underlying industries: oil and gas extraction, mining except oil and gas, and support activities for mining.

Value-added prices in manufacturing accelerated and partly offset the downturns in agriculture and mining. Durable-goods manufacturing turned up in 2009 after declining since 1995.

Value-added prices for educational services, health care, and social assistance continued to grow. This growth offset some of the declines in prices in industries in the private goods-producing sector.

Value-added prices for the private goods-producing industries fell for the first time since 2002, led by the declines in mining and agriculture.

Value-added prices for the information-communications-technology-producing industries continued to fall, but at a slower rate than in previous years.

1. Consists of agriculture, forestry, fishing, and hunting; mining; construction; and manufacturing.

2. Consists of utilities; 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; and other services, except government.

3. Consists of computer and electronic products; publishing industries (includes software); information and data processing services; and computer systems design and related services.

Revisions

Table D. Revisions in Percent Changes in Real Value Added by Industry Group

	2007			2008			2009		
	Revised	Previously Published	Revision	Revised	Previously Published	Revision	Revised	Previously Published	Revision
Gross domestic product	1.9	2.1	-0.2	0.0	0.4	-0.4	-2.6	-2.4	-0.2
Private industries	2.1	2.2	-0.1	-0.7	-0.1	-0.6	-3.0	-2.6	-0.4
Agriculture, forestry, fishing, and hunting	-7.4	-5.7	-1.7	9.1	9.5	-0.4	5.3	4.6	0.7
Mining	3.0	-4.5	7.5	-3.4	0.3	-3.7	27.4	3.7	23.7
Utilities	3.4	3.5	-0.1	6.0	3.2	2.8	-9.0	3.1	-12.1
Construction.....	-5.3	-3.9	-1.4	-5.7	-3.3	-2.4	-15.6	-9.9	-5.7
Manufacturing	3.3	4.5	-1.2	-4.8	-3.6	-1.2	-8.6	-5.9	-2.7
Durable goods	3.7	4.1	-0.4	1.0	0.3	0.7	-12.7	-7.5	-5.2
Nondurable goods.....	2.8	5.0	-2.2	-11.8	-8.2	-3.6	-3.4	-3.8	0.4
Wholesale trade.....	5.6	2.5	3.1	-0.1	-0.6	0.5	2.8	-1.0	3.8
Retail trade.....	1.3	1.6	-0.3	-6.9	-5.2	-1.7	-1.9	-4.5	2.6
Transportation and warehousing.....	0.9	3.0	-2.1	0.8	-2.5	3.3	-13.0	-2.8	-10.2
Information	8.5	6.0	2.5	4.1	1.4	2.7	-2.5	1.6	-4.1
Finance, insurance, real estate, rental, and leasing.....	1.7	2.2	-0.5	0.0	1.6	-1.6	1.1	-2.4	3.5
Finance and insurance.....	-2.2	-1.4	-0.8	-3.9	3.2	-7.1	6.1	-2.7	8.8
Real estate and rental and leasing.....	4.3	4.6	-0.3	2.5	0.7	1.8	-1.8	-2.3	0.5
Professional and business services.....	2.5	2.7	-0.2	3.1	1.5	1.6	-5.0	-3.0	-2.0
Professional, scientific, and technical services	3.0	2.6	0.4	4.2	1.8	2.4	-3.4	-1.8	-1.6
Management of companies and enterprises.....	-1.4	-1.4	0.0	2.4	2.4	0.0	-2.1	-2.6	0.5
Administrative and waste management services	3.9	5.3	-1.4	0.7	0.2	0.5	-11.1	-6.5	-4.6
Educational services, health care, and social assistance.....	1.8	2.0	-0.2	4.0	3.2	0.8	1.1	1.4	-0.3
Educational services.....	0.7	1.7	-1.0	1.7	2.2	-0.5	-1.4	-1.1	-0.3
Health care and social assistance.....	1.9	2.1	-0.2	4.3	3.3	1.0	1.5	1.7	-0.2
Arts, entertainment, recreation, accommodation, and food services.....	1.5	1.4	0.1	-4.6	-1.3	-3.3	-8.7	-3.1	-5.6
Arts, entertainment, and recreation.....	2.8	0.8	2.0	-1.6	2.5	-4.1	-7.8	-2.2	-5.6
Accommodation and food services	1.1	1.6	-0.5	-5.6	-2.6	-3.0	-9.0	-3.4	-5.6
Other services, except government	0.2	2.2	-2.0	-4.8	-0.3	-4.5	-6.8	-4.5	-2.3
Government	0.8	1.3	-0.5	2.1	2.0	0.1	0.8	1.9	-1.1
Federal	0.3	0.3	0.0	2.6	2.7	-0.1	3.6	5.7	-2.1
State and local	1.0	1.8	-0.8	1.9	1.8	0.1	-0.5	0.1	-0.6
Addenda:									
Private goods-producing industries ¹	0.6	1.1	-0.5	-4.2	-2.5	-1.7	-6.4	-5.3	-1.1
Private services-producing industries ²	2.5	2.5	0.0	0.4	0.6	-0.2	-2.1	-1.9	-0.2
Information-communications-technology-producing industries ³	8.8	7.6	1.2	8.8	5.4	3.4	-0.5	-0.1	-0.4

1. Consists of agriculture, forestry, fishing, and hunting; mining; construction; and manufacturing.

2. Consists of utilities; 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; and other services, except government.

3. Consists of computer and electronic products; publishing industries (includes software); information and data processing services; and computer systems design and related services.

The revised statistics on industry value added did not meaningfully alter the general picture of the U.S. economy that was suggested by the previously published statistics for 2007–2009.

2007 and 2008

- Real value added for the mining industry was revised in both 2007 and in 2008, reflecting newly available data on corporate profits from the Internal Revenue Service (IRS) Statistics of Income.
- Real value added growth for the finance and insurance industry in 2008 was revised down 7.2 percentage points from the previously published statistics, reflecting the incorporation of newly available data on corporate profits from the IRS Statistics of Income.

2009

- The revised statistics show that 16 of the 22 industry groups contributed to the decline in real GDP in 2009. In the previously published statistics, 15 of the 22 industry groups contributed to the decline. The most notable revisions were upward revisions to finance and insurance and to wholesale trade and downward revisions to utilities, information, and state and local government.

- Durable-goods manufacturing and the professional, scientific, and technical services were the largest contributors to the decline in real GDP in both the previously published statistics and the revised statistics.
- Real value-added growth for the finance and insurance industry was revised up 8.8 percentage points from the advance statistics, reflecting revised measures of corporate profits.
- In both the previously published statistics and the revised statistics, growth in the mining industry was one of the largest offsets to the widespread declines in the economy.
- Revisions to the mining, utilities, transportation and warehousing, and wholesale trade sectors reflect the incorporation of intermediate input prices, which allows for differences in the prices charged by these industries for their output from growth in the prices these industries paid for their intermediate inputs. ¹

1. In the revised 2009 statistics, real value added is derived by deflating gross output separately from intermediate inputs, also known as double deflation. For more information, see the technical note on computing chain-type price and quantity indexes in the GDP by industry accounts in Brian C. Moyer, Mark A. Planting, Mahnaz Fahim-Nader, and Sherlene K.S. Lum, "Preview of the Comprehensive Revision of the Annual Industry Accounts," SURVEY 84 (March 2004): 50–51.

Measures of Output and Acknowledgments

Measures of Output: Value Added and Gross Output by Industry

The Bureau of Economic Analysis prepares several, related measures of output. In the industry accounts, these measures include value added and gross output by industry. Both are important measures for analyzing industry-level economic activity.

Value added by industry is the contribution of each industry and government to the nation's gross domestic product (GDP). It is also a measure of the incomes earned in production in each industry. Value added is equal to the value of gross output less the value of intermediate inputs and is measured as the sum of the industry distributions of the components of gross domestic income that are attributable to labor and capital in the United States. The components of value added include the returns to labor (as measured by compensation of employees), capital (as measured by gross operating surplus), and government (as

measured by taxes on production and imports less subsidies).

Gross output is measured by summing the value of an industry's sales or receipts, other operating incomes, commodity taxes, and inventory change. Gross output is produced using primary and secondary factors of production. Primary factors of production consist of the value-added inputs of labor and capital; secondary factors of production consist of energy, raw materials, semifinished goods, and services that are purchased from domestic industries or from foreign sources. Gross output includes the value of final products (which count towards GDP) and intermediate products (which are used by others in their production processes). Because gross output reflects double-counting—both of intermediate goods and final goods—it is often referred to as “gross duplicated output.”

Acknowledgments

Nicole M. Mayerhauser, Chief of the Industry Sector Division (ISD), and Erich H. Strassner, Chief of the Industry Applications Division (IAD), supervised the preparation of the statistics. Brian C. Moyer, Acting Associate Director for Industry Economic Accounts, provided overall guidance. Thomas F. Howells III, Chief of the Input-Output Systems Branch in IAD, managed the economic information systems used to produce and review the statistics.

The following staff provided guidance and contributed to the preparation of the industry statistics and analysis: Sherlene K.S. Lum, Chief of the Information and Business Services Branch in ISD, Edward T. Morgan, Chief of the Inter-Industry Statistics Branch in IAD, and Patricia A. Washington, Chief of the Personal Services and Government Branch in ISD, Robert J. McCahill, Program Coordinator in ISD, Gabriel W. Medeiros in IAD, and William H. Nicolls IV in IAD, provided valuable assistance. Maxine V. Tiggler and Pat A. Wilkinson provided administrative and program assistance.

The following staff also contributed to the preparation of the annual statistics:

Agriculture, mining, construction, and manufacturing: Donald D. Kim, Eric A. Bryda, Matthew M. Donahoe, Aaron Elrod, Mariana Matias, and Simon N. Randri-

anarivelo.

Distributive services: Ricky L. Stewart, Anna M. Jacobson, and Patrick H. Martin.

Information and professional services: Robert J. Corea, Olympia Belay, Mandy C. Roberts, and Matthew B. Schroeder.

Finance, insurance, real estate, rental and leasing, and management services: James M. Green, Lolita V. Jamison, and Erin M. Ludlow.

Transportation and government enterprises: Paul V. Kern, Alvin D. Blake, Stanislaw J. Rzeznik, and Steven L. Zemaneck.

Health, education, and government services: Tameka R.L. Harris, Daniel W. Jackson, Sarah Pack, and Darlene C. Robinson-Smith.

Value added: Jennifer Lee, Teresa L. Gilmore, William A. Jolliff, and Brian M. Lindberg.

International trade and inventory: Matthew Russell, Peter D. Kuhbach, Gregory R. Linder, and Sarah B. Osborne.

Operations: Amanda S. Lyndaker, Jeffrey M. Bellone, Rajeshwari R. Bhosale, Kathleen M. Karlon, and Douglas B. Leung.

Balancing and reconciliation: Kevin J. Muck, Bradlee A. Herauf and Jeffrey A. Young.

Methodology

The annual input-output (I-O) accounts and the GDP by industry accounts are created using an integrated methodology that makes the annual estimates of gross output, intermediate inputs, and value added by industry more timely and more consistent than previously published estimates.¹ Industry estimates are published for 65 detailed industries that are based on the 2002 North American Industry Classification System (NAICS). Commodity estimates are published at the same level of detail as the industry estimates plus two additional commodities.² Estimates of final uses and value added are also included in the annual estimates. The integrated methodology is applied at a finer level of industry and commodity detail than the previous methodologies in order to enhance the accuracy of aggregate-level estimates.

The integrated annual I-O accounts and GDP by industry accounts are prepared in five steps:

Step one. Industry estimates of current-dollar value added for 2007–2009 are extrapolated forward from the annual industry accounts estimates for 2006, which were not revised, using the percent changes in the annual estimates of gross domestic income (GDI) from the national income and product accounts (NIPAs). The GDI by industry estimates consist of compensation of employees, taxes on production and imports less subsidies, and gross operating surplus. Additionally, corporate data on profits before tax, net interest, and capital consumption allowances are converted from an enterprise basis to an establishment basis using data on employment. Finally, the statistical discrepancy (the difference between NIPA GDI and GDP) is distributed among the industries. In general, annual revisions to the industry estimates of value added largely reflect revisions to the components of GDI and to the statistical discrepancy from the annual NIPA revision.

Step two. Industry estimates of gross domestic output for 2007–2009 are extrapolated from the 2006 estimates. The extrapolators for these estimates are prepared using a wide array of source data, including surveys from the Census Bureau, the Bureau of Labor Statistics, and other public and private sources.³ Annual revisions to industry

estimates of gross output are due to revisions in these source data.

Step three. The initial commodity composition of intermediate inputs is calculated for each industry by a process that uses the previous year's direct requirements coefficients and Census Bureau data on broad business expense categories by industry. First, gross output for each industry is revalued at the previous year's commodity prices. Next, the revalued gross output is multiplied by the industry's direct requirements coefficients from the previous year.⁴ The resulting commodity estimates of intermediate inputs for the industry are revalued in the commodity prices of the current year. As a final step, the commodity mix of detailed intermediate inputs is updated to be consistent with business expense data from the Census Bureau's Services Annual Survey and Annual Survey of Manufacturers.

Step four. The initial commodity composition of each GDP expenditure component is estimated by applying commodity-flow relationships from the revised 2002 benchmark I-O accounts to the domestic supply of each commodity in the current year. The annual I-O use tables are then balanced using a biproportional adjustment procedure to ensure that intermediate and final use of commodities is consistent with domestic supply, that intermediate use is consistent with gross output and value added, and that final use is consistent with the final expenditure components from the NIPAs. The current-dollar measures of gross output, intermediate inputs, and value added are then incorporated into the GDP by industry accounts.

Step five. Price and quantity indexes for the GDP by industry accounts are prepared in three steps. First, indexes are derived for gross output by deflating each commodity produced by an industry that is included as part of its gross output. Second, indexes for intermediate inputs are derived by deflating all commodities that are consumed by an industry as intermediate inputs in the annual I-O use tables. Third, indexes for value added by industry are calculated using the double-deflation method in which real value added is computed as the difference between real gross output and real intermediate inputs.⁵

1. See Nicole M. Mayerhauser and Erich H. Strassner, "Preview of the Comprehensive Revision of the Annual Industry Accounts," *SURVEY* 90 (March 2010): 21–34.

2. One commodity consists of noncomparable imports and rest of the world adjustment to final uses, and the other commodity consists of scrap and used and secondhand goods.

3. See the appendix table "Principle Sources of Data for Industry and Commodity Output and Prices." The estimates of the commodity composition of extrapolated industry gross output are largely consistent with the 2002 benchmark I-O relationships for nonmanufacturing industries and with current survey data for manufacturing industries.

4. Direct requirements coefficients specify the amount of each commodity required by the industry to produce a dollar of output.

5. Estimates of gross output and intermediate inputs are combined in a Fisher index-number formula in order to generate the indexes for value added by industry. This method is preferred because it requires the fewest assumptions about the relationships between gross output by industry and intermediate inputs by industry.

E. Principal Sources of Data for Industry and Commodity Output and Prices—Continues

Industry and commodity	Source data for annual current-dollar statistics	Source data for price indexes
Agriculture, forestry, fishing and hunting		
Farms	New U.S. Department of Agriculture (USDA) data and national income and product account (NIPA) farm output for 2009, revised data for 2008 and 2007.	USDA prices received by farmer; Bureau of Labor Statistics (BLS) Producer Price Index (PPI).
Forestry, fishing and related activities	For forestry, new NIPA farm output for 2009, revised data for 2008 and 2007. For logging and forestry support activities, Census Bureau annual survey of manufactures (ASM) for 2007 and 2008, Census Bureau manufacturers' shipments, inventories and orders survey (M3) for 2009; for fishing, hunting and trapping, National Oceanic and Atmospheric Administration (NOAA) commercial landings and export value for 2007–2009.	BLS PPI; NIPA personal consumption expenditure (PCE) implicit price indexes; USDA/National Agricultural Statistics Service (NASS) unit prices.
Mining		
Oil and gas extraction	U.S. Department of Energy (DOE) Energy Information Administration (EIA) data on quantities produced and prices; 2007–2009.	BLS PPI; EIA.
Mining, except oil and gas	For coal mining, EIA U.S. Coal Supply and Demand in Review; for Uranium, EIA <i>Uranium Marketing Annual Report</i> , for all other, U.S. Geological Survey (USGS) <i>Mineral Commodity Summaries</i> ; 2007–2009.	EIA; USGS; and BLS PPI.
Support activities for mining	For mining exploration, trade source data on drilling costs and footage drilled; all other support activities, USGS <i>Mineral Commodity Summaries</i> ; 2007–2009.	EIA; USGS; BLS PPI; and trade sources.
Utilities		
For power generation and supply	EIA forms 861 and 826; for natural gas distribution, EIA <i>Natural Gas Monthly</i> new for 2009 revised for 2008 and 2007; for water, sewage and other systems, NIPA PCE water and sanitary services/maintenance; 2007–2009.	BLS Consumer Price Index (CPI); BLS PPI.
Construction		
Residential	New Census Bureau construction spending survey 2009, revised for 2008 and 2007.	Census Bureau price deflator for new single-family houses under construction; BEA price index for multi family home construction.
Non residential	New Census Bureau construction spending survey 2009, revised for 2008 and 2007; U.S. Department of Defense (DOD) expenditures; USDA expenditures.	BEA composite price indexes based on cost per square foot and cost indexes from trade source data and Census Bureau price deflator for single-family houses under construction; BLS PPI.
Manufacturing		
Shipments and inventories data	from Census Bureau M3 for 2009, ASM and Census Bureau Nonemployer Survey for 2007 and 2008.	BLS PPI; NIPA price indexes based on DOD prices paid for military equipment; NIPA hedonic price indexes.
Wholesale trade		
Census Bureau <i>Monthly Wholesale Trade Survey</i> (MWTS) for 2009, Census Bureau <i>Annual Wholesale Trade Survey</i> (AWTS) data for 2007 and 2008.		NIPA wholesale sales deflator and Census Bureau MWTS and AWTS data to derive margin rates.
Retail trade		
Census Bureau <i>Monthly Retail Trade Survey</i> (MRTS) for 2009; Census Bureau <i>Annual Retail Trade Survey</i> (ARTS) data for 2008 and 2007.		BLS PPI; NIPA price indexes and Census Bureau MRTS and ARTS data to derive margin rates.
Transportation and warehousing		
Air transportation	New Bureau of Transportation Statistics (BTS) Air Carrier Financial Statistics (ACFS) and Air Carrier Traffic Statistics (ACTS); and foreign trade statistics.	BLS PPI; BTS price deflators, NIPA price indexes.
Rail transportation	For rail passenger, <i>Amtrak Annual Report 2009</i> ; for rail freight, trade sources.	For rail passenger BLS CPI, for freight BLS PPI.
Water transportation	For freight, Army Corps of Engineers' <i>Waterborne Commerce of the United States</i> for 2009; for inland passenger travel on ferry boats, American Public Transportation Association (APTA) 2007–2008, and cruise ships, NIPA PCE 2009; and trade source data on receipts 2007–2008.	BLS PPI; BLS CPI; trade source data.
Truck transportation	Census Bureau services annual survey (SAS), preliminary for 2009 and revised for 2007–2008.	BLS PPI.
Transit and ground passenger transportation	BTS' National Transportation Statistics (NTS) 2008 and 2007; BLS, quarterly census of employment and wages (QCEW) data; PCE for ground passenger transportation 2007–2009.	PCE price indexes; QCEW data; BLS PPI.
Pipeline transportation	Trade source data on receipts 2007–2008; Federal Energy Regulatory Commission (FERC) form 6 2007–2008, EIA, Natural gas annual 2007–2009.	BLS PPI.
Other transportation and support activities	PCE 2009; trade source data on receipts 2007–2008; ACFS and ACTS for 2007.	PCE; BLS PPI.
Warehousing and storage	Census Bureau preliminary SAS data for 2009 and revised data for 2008 and 2007.	BLS PPI.
Information		
Publishing industries (includes software)	Census Bureau preliminary SAS data for 2009 and revised data for 2008 and 2007.	BEA price index for software; BLS PPI.
Motion picture and sound recording industries	Census Bureau preliminary SAS data for 2009 and revised data for 2008 and 2007.	PCE price indexes based on BLS CPI.
Broadcasting and telecommunications	Census Bureau preliminary SAS data for 2009 and revised data for 2008 and 2007.	BLS PPI.
Information and data processing services	Census Bureau preliminary SAS data for 2009 and revised data for 2008 and 2007.	PCE price indexes for information services; BLS PPI for data processing services.
Finance and insurance		
Federal Reserve banks, credit intermediation and related activities	Federal Deposit Insurance Corporation (FDIC) commercial bank call report data; Federal Reserve Board (FRB) data; National Credit Union Administration (NCUA); Office of Thrift Supervision (OTS) data; BEA measures of financial services indirectly measured; private trade source data 2007–2009.	PCE implicit price deflators for financial services implicitly measured based on BLS quantity output indexes for commercial banks and employee hours for other depository institutions; BLS PPI and CPI; FRB Priced services.
Securities, commodity contracts, investments	Securities and Exchange Commission (SEC) Focus Report for 2009; Census Bureau preliminary SAS data for 2009 and revised data for 2008 and 2007.	BLS PPI; PCE price indexes based on BLS CPI and BLS PPI.
Insurance carriers and related activities	For reinsurance carriers, life insurance, and property and casualty insurance, private trade source data, and BLS QCEW data 2007–2009.	BLS PPI; PCE price indexes based on quantity extrapolations of property insurance premiums and benefits deflated with BLS CPI, composite input cost indexes for life insurance; quantity extrapolation of premium and benefits deflated with BLS PPI for medical insurance.

E. Principal Sources of Data for Industry and Commodity Output and Prices—Table Ends

Industry and commodity	Source data for annual current-dollar statistics	Source data for price indexes
Funds, trusts, and other financial vehicles	NIPA imputed service charges for other financial institutions, Employee Benefits Security Administration (EBSA) data on pension funds; 2007–2009.	BLS PPI and PCE price indexes based on quantity indexes for mutual funds sales deflator with BLS CPI.
Real estate and rental and leasing		
Real estate	For residential dwellings, NIPA Housing Data; USDA data on farm housing; for nonresidential dwellings, new Internal Revenue Service (IRS) tabulations of business tax returns for 2009; NIPA rental value of buildings owned by nonprofits, Balance of Payments exports data.	For residential dwellings, PCE Price Index for residential rents, NIPA farm rents paid; BLS CPI based deflator; for nonresidential dwellings, BLS PPI; for real estate managers and agents, BLS PPI and trade source data.
Rental and leasing services and lessors of intangible assets	For rental and leasing services, Census Bureau preliminary SAS data for 2009 and revised data for 2007 and 2006; for royalties, new IRS tabulations of business tax returns for 2007, revised 2006 data.	BLS PPI; BTS and construction index, mining, crude oil, receipts.
Professional, scientific, and technical services		
Legal services	Census Bureau preliminary SAS data for 2009 and revised data for 2008 and 2007.	BLS PPI; BEA PCE.
Computer systems design and related services	Census Bureau preliminary SAS data for 2009 and revised data for 2008 and 2007.	BEA price indexes for prepackage custom and own account software.
Miscellaneous professional, scientific and technical services	Census Bureau preliminary SAS data for 2009 and revised data for 2008 and 2007.	BLS PPI; BLS QCEW; BEA PCE.
Management of companies and enterprises		
Administrative and waste management services		
Administrative and support services	Census Bureau preliminary SAS data for 2009 and revised data for 2008 and 2007; BLS QCEW data for auxiliary industries.	BLS QCEW; BLS PPI.
Waste management and remediation services	Census Bureau preliminary SAS data for 2009 and revised data for 2008 and 2007; BLS QCEW data for auxiliary industries.	BLS QCEW; BLS PPI.
Educational services	PCE data for education services based on data from the Department of Education and data from BLS consumer expenditure survey; 2007–2009.	PCE price index based on trade source data for input costs.
Health care and social assistance		
Ambulatory health care services	Census Bureau preliminary SAS data for 2009 and revised data for 2008 and 2007.	PCE price index based on BLS CPI; BLS PPI.
Hospital and nursing and residential care facilities	Census Bureau preliminary SAS data for 2009 and revised data for 2008 and 2007.	PCE price index based on BLS CPI and Centers for Medicare and Medicaid services.
Social assistance	Census Bureau preliminary SAS data for 2009 and revised data for 2008 and 2007.	PCE price index based on trade source data on input costs.
Arts, entertainment, and recreation		
Performing arts, spectator sports, museums and related industries	Census Bureau preliminary SAS data for 2009 and revised data for 2008 and 2007.	PCE price index based on BLS CPI.
Amusement, gambling, and recreation industries	Census Bureau preliminary SAS data for 2009 and revised data for 2008 and 2007.	PCE price index based on BLS CPI.
Accommodation and food services		
Accommodations	PCE for hotels and motels; for RV Parks and Bed and Breakfasts, BLS QCEW data; 2007–2009.	BLS PPI; PCE price index based on BLS CPI.
Food services and drinking places	Census Bureau ARTS; 2007–2009.	ARTS; BLS PPI.
Other services, except government	For religious, grant making, civic and other non profits services, and personal services, and dry cleaning services, Census Bureau preliminary SAS data for 2009 and revised data for 2008 and 2007 and data from the National Center for Charitable Statistics (NCCS); for repair and maintenance, BLS QCEW; for private household services, PCE data.	BLS CPI; PCE price indexes based on BLS CPI.
Federal		
General government	NIPA government expenditure statistics; for federal structures, DOD investment expenditures data; 2007–2009.	NIPA price index based on BLS PPI and BLS CPI; for military facilities DOD data on employment, prices for military construction, construction cost indexes from trade sources.
Government enterprises	U.S. Postal Service (USPS) receipts; EIA data for electric utilities, Overseas Private Investment Corporation (OPIC), Federal Housing Administration data (FHA). Government agency data for specific federal enterprises; 2007–2009.	BLS PPI; PCE price indexes based on BLS PPI and agency data.
State and local		
General	NIPA government expenditure statistics; 2007–2009.	BLS PPI; PCE price index based on CPI.
Enterprises	NIPA statistics on government enterprises based on annual survey of government finances; Alaska Railroad Administration for Alaska ferries, waterports, and airports; EIA data for electric utilities; state and local structures Census Bureau construction survey; 2007–2009.	BLS PPI.

F. Principal Sources of Data for Value-Added Extrapolators—Continues

Component of gross domestic income	Major source data	Distribution available in source data	Industrial distribution
			Data or assumption used if distribution by establishment is not available in source data
Compensation of employees, paid			
Wages and salary accruals ¹	For most private industries, federal government civilians, and state and local government, Bureau of Labor Statistics (BLS) tabulations from the Quarterly Census of Employment and Wages (QCEW) for 2007–2009. For other private, a variety of sources for 2007–2009. For military wages, Office of Personnel Management (OPM) for 2007–2009.	Establishment.	
Supplements to wages and salaries			
Employer contributions for employee pension and insurance funds	For health insurance, Department of Health and Human Services (HHS) Medical Expenditure Panel Survey for 2007–2009. For private pension plans, Pension Benefit Guaranty Corporation and corporate financial data for 2008 and 2009; Department of Labor (DOL) tabulations of Internal Revenue Service (IRS) Form 5500 for 2007. For federal retirement plans, outlays from <i>Monthly Treasury Statement</i> ; for state and local government plans, Census Bureau annual surveys, for 2007–2009. For other types, judgmental trend for 2009; trade association data for 2007 and 2008.	For pension plans, company; for the others, none.	BLS employer cost index; BLS QCEW.
Employer contributions for government social insurance	Tabulations from the Social Security Administration (SSA) and other agencies administering social insurance programs for 2007–2009.	None.	SSA and BLS tabulations.
Taxes on production and imports less subsidies			
Taxes on production and imports	For state and local government, Census Bureau data for 2007–2009. For federal government excise taxes, Alcohol and Tobacco Tax and Trade Bureau collections and IRS data for 2007–2009. For customs duties, Treasury Department <i>Monthly Treasury Statement</i> for 2007–2009.		
Subsidies	For federal government, U.S. Department of Agriculture (USDA) Commodity Credit Corporation subsidy payments and Office of Management and Budget (OMB) of the United States for 2007–2009. For state and local government, Census Bureau and California administrative records for 2007–2009.	None.	Payments are assigned to the industries being supported.
Gross operating surplus			
Private enterprises			
Net interest and miscellaneous payments, domestic industries			
Corporate	Federal Financial Institutions Examination Council (FFIEC) <i>Call Reports</i> data on commercial banks and trade association data for 2007–2009. IRS tabulations from corporate tax returns (Form 1120 series), adjusted for misreporting on tax returns and for conceptual differences, for 2007 and 2008.	Company.	Census Bureau company-establishment employment matrix.
Noncorporate	FFIEC <i>Call Reports</i> data on commercial banks, Federal Reserve Board (FRB) mortgage debt times BEA interest rate for residential mortgage interest for 2007–2009. IRS tabulations of tax return data from sole proprietorships (Form 1040 Schedule C) and partnerships (Form 1065), adjusted for misreporting on tax returns and for conceptual differences, for 2007 and 2008.	Company.	Assumed to be equivalent to an establishment distribution.
Business current transfer payments (net)	For government, OMB <i>Budget of the United States</i> , Census Bureau Census of Governments and annual surveys for 2007–2009. For persons, judgmental trend for 2009. IRS tabulations from business tax returns and information from government agency reports and trade sources for 2007 and 2008.	Company.	Industry-specific payments are assigned to those industries; others are based on IRS company industry distribution.
Proprietors' income with inventory valuation adjustment (IVA) and without capital consumption adjustment (CCAdj)			
Farm	USDA farm income data for 2007–2009.	Establishment.	
Nonfarm			
Proprietors' income without IVA and CCAdj	Indicators of activity, such as construction spending (value put in place), for construction, trade, and services for 2009. For others, judgmental trend for 2009. IRS tabulations of tax returns from sole proprietorships (Form 1040 Schedule C) and partnerships (Form 1065), adjusted for misreporting on tax returns and for conceptual differences, for 2007 and 2008.	Company.	Assumed to be equivalent to an establishment distribution.
IVA	BLS prices for 2007–2009. Census Bureau monthly surveys and <i>Quarterly Financial Report</i> for 2009; IRS inventory data for 2007 and 2008.	Establishment/company.	
Rental income of persons without CCAdj	Census Bureau data on housing units and rents from the American Housing Survey, FRB mortgage debt data, BEA interest rate data, and USDA data for 2007–2009. For royalties, judgmental trend for 2009, IRS tabulations of data from individual tax returns (Form 1040) for 2007–2008.	Establishment.	

F. Principal Sources of Data for Value-Added Extrapolators—Table Ends

Component of gross domestic income	Major source data	Distribution available in source data	Industrial distribution
			Data or assumption used if distribution by establishment is not available in source data
Corporate profits before tax with IVA and without CCA _{adj} , domestic industries	Census Bureau data from the <i>Quarterly Financial Report</i> , regulatory agency reports, and public financial statements for 2009. IRS tabulations from corporate tax returns (Form 1120 series), adjusted for misreporting on tax returns and for conceptual differences, for 2007 and 2008.	Company.	Census Bureau company-establishment employment matrix.
Corporate profits before tax without IVA and CCA _{adj}			
IVA	BLS prices for 2007–2009. Census Bureau monthly surveys and <i>Quarterly Financial Report</i> for 2009; IRS inventory data for 2007 and 2008.	Establishment/company.	
Capital consumption allowances			
Corporate	BEA estimates of tax-return-based depreciation for 2009. IRS tabulations from corporate tax returns (Form 1120 series), adjusted for misreporting on tax returns and for conceptual differences, for 2007 and 2008.	Company.	Census Bureau company-establishment employment matrix.
Noncorporate	BEA estimates of tax-return-based depreciation for 2009. IRS tabulations of tax return data from sole proprietorships (Form 1040 Schedule C) and partnerships (Form 1065), adjusted for misreporting on tax returns and for conceptual differences, for 2007 and 2008.	Company.	Assumed to be equivalent to an establishment distribution.
Current surplus of government enterprises	For federal government, reports from various agencies and BEA consumption of fixed capital for 2007–2009. For state and local governments, Census Bureau surveys of government finances for 2007–2009.	Establishment.	
Consumption of fixed capital			
Households and institutions ²	BEA capital stock data for 2007–2009.	Establishment.	
Government	BEA capital stock data for 2007–2009.	Type of agency.	

1. Includes wage and salary disbursements to the rest of the world and excludes wages and salaries received from the rest of the world.

2. Consists of owner-occupied housing and non profit institutions primarily serving households.