



**Transmission of material in this release is embargoed until
 8:30 a.m. (EST) Thursday, March 7, 2019**

USDL 19-0358

Technical information: (202) 691-5606 • Productivity@bls.gov • www.bls.gov/lpc
 Media contact: (202) 691-5902 • PressOffice@bls.gov

PRODUCTIVITY AND COSTS

Fourth Quarter and Annual Averages 2018, Revised

Nonfarm business sector labor productivity increased 1.9 percent in the fourth quarter of 2018, the U.S. Bureau of Labor Statistics reported today, as output increased 3.1 percent and hours worked increased 1.2 percent. (All quarterly percent changes in this release are seasonally adjusted annual rates.) From the fourth quarter of 2017 to the fourth quarter of 2018, productivity increased 1.8 percent, reflecting a 3.7-percent increase in output and a 1.9-percent increase in hours worked. (See chart 1 and tables A1 and 2.) Annual average productivity increased 1.3 percent from 2017 to 2018. (See table C1.)

Labor productivity, or output per hour, is calculated by dividing an index of real output by an index of hours worked by all persons, including employees, proprietors, and unpaid family workers.

Chart 1. Labor productivity, nonfarm business, 2015Q1 – 2018Q4

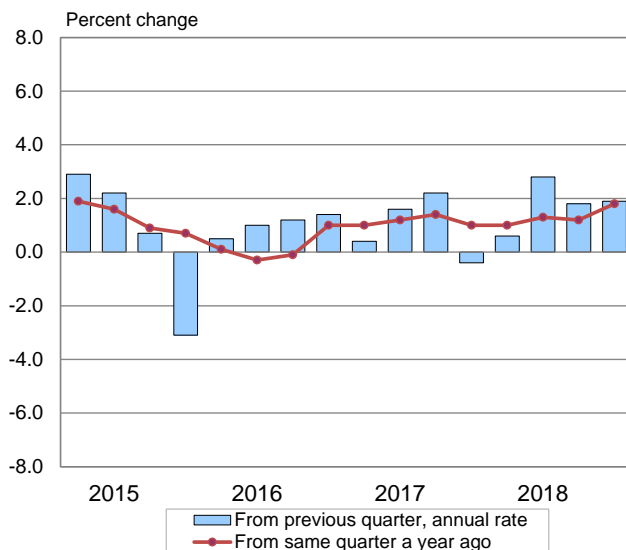
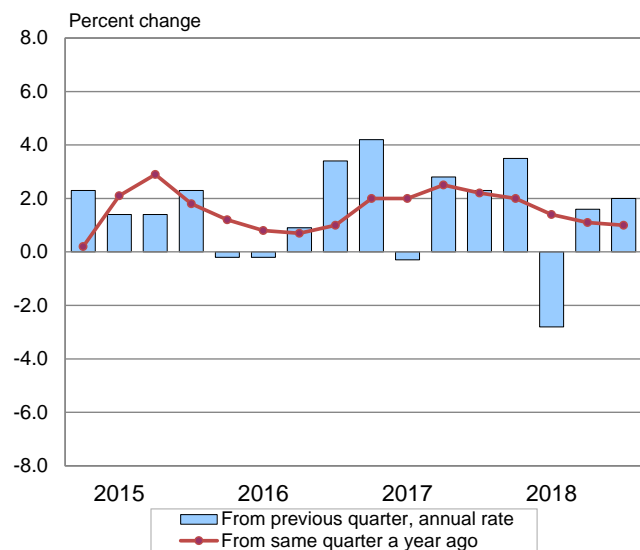


Chart 2. Unit labor costs, nonfarm business, 2015Q1 – 2018Q4



Unit labor costs in the nonfarm business sector increased 2.0 percent in the fourth quarter of 2018, and increased 1.0 percent over the last four quarters. (See chart 2 and tables A1 and 2.)

New and Revised Productivity and Costs Data

This is the first publication of fourth quarter and annual average 2018 measures of labor productivity and costs for the business and nonfarm business sectors, reflecting the Feb. 28, 2019 release of source data on output and compensation by the U.S. Department of Commerce. Also, data in this release reflect the annual benchmark revision of BLS Current Employment Statistics program data on private nonfarm employment and hours, and historical revision of those data. See Revised measures on page 2.

BLS calculates unit labor costs as the ratio of hourly compensation to labor productivity. Increases in hourly compensation tend to increase unit labor costs, and increases in output per hour tend to reduce them.

Manufacturing sector labor productivity increased 2.0 percent in the fourth quarter of 2018, as output increased 2.7 percent and hours worked rose 0.8 percent. Productivity increased 3.3 percent in the durable manufacturing sector and 1.9 percent in the nondurable manufacturing sector in the fourth quarter of 2018. Over the last four quarters, total manufacturing sector productivity increased 1.0 percent, as output increased 2.9 percent and hours worked increased 1.9 percent. **Unit labor costs** in manufacturing increased 2.2 percent in the fourth quarter of 2018 and rose 0.8 percent from the same quarter a year ago. (See tables A1 and 3.)

The concepts, sources, and methods used for the manufacturing output series differ from those used in the business and nonfarm business output series; these output measures are not directly comparable. See the Technical Notes for a more detailed explanation. (See page 6.)

Revised measures

The measures released today are based on more recent source data than were available for the preliminary report.

Fourth-quarter and annual average 2018 data on output and compensation were published for the first time on February 28, 2019 by the Bureau of Economic Analysis, U.S. Department of Commerce. Therefore, measures based on these data—including productivity and unit labor costs—are published for the first time with this release.

Quarterly and annual measures of hours and related series—including productivity—were revised from 1947 forward for all sectors. These data were revised due to incorporation of revised Current Employment Statistics (CES) program data on employment and hours published February 1, 2019. Quarterly measures of real hourly compensation for all sectors were revised from first-quarter 2018 forward to reflect revised data on consumer prices from the BLS Office of Prices and Living Conditions.

Table B1 presents previous and revised measures for the fourth quarter of 2018. Because data for most measures were not available in our preliminary release on February 6, 2019, comparisons are shown primarily for manufacturing sector measures.

In the **fourth quarter of 2018**, manufacturing sector productivity was revised up to 2.0 percent from a preliminary estimate of 1.3 percent. The upward revision reflected both an upward revision to output and a downward revision to hours worked. Productivity was also revised up in durable goods manufacturing to 3.3 percent and in nondurable goods industries to 1.9 percent.

Table B2 presents previous and revised productivity and related measures for the third quarter of 2018 for the nonfarm business, business, and manufacturing sectors.

In the **third quarter of 2018**, nonfarm business productivity was revised down from an increase of 2.2 percent to an increase of 1.8 percent due to an upward revision to hours worked; output was unrevised. Unit labor costs were revised up 0.7 percentage point to an increase of 1.6 percent, the combined effect of the 0.4-percentage point downward revision to productivity and a 0.3-percentage point upward revision to hourly compensation.

Manufacturing productivity increased 1.0 percent rather than 1.1 percent in the third quarter of 2018, as hours worked were revised up slightly more than output. Unit labor costs in manufacturing were revised

upward and increased 1.8 percent rather than declining 1.3 percent, due almost entirely to a 3.0-percentage point upward revision to hourly compensation. (See table B2.)

Nonfinancial corporate sector productivity increased 6.1 percent in the third quarter of 2018, the same rate as previously reported. Both output and hours were revised up 0.5 percentage point. Unit labor costs decreased 2.3 percent in the third quarter of 2018, a slightly smaller decline than previously reported. (See table A2.)

Annual averages

Table C1 presents **annual average changes** for the most recent 5 years for the nonfarm business sector and the total manufacturing sector. **Nonfarm business sector** productivity grew 1.3 percent in 2018, as output and hours increased 3.5 percent and 2.2 percent, respectively. In 2017, productivity increased 1.1 percent. The average annual rate of nonfarm business sector productivity growth from 2007 to 2018—corresponding to the current business cycle—is 1.3 percent, which is below the long-term rate from 1947 to 2018 of 2.1 percent.

Unit labor costs in the nonfarm business sector increased 1.4 percent in 2018, reflecting increases of 2.7 percent in hourly compensation and 1.3 percent in productivity. Real hourly compensation, which takes into account changes in consumer prices, increased 0.3 percent in 2018.

In the **manufacturing sector**, productivity increased 0.8 percent in 2018, as output increased 2.7 percent and hours worked increased 1.9 percent. Manufacturing sector productivity has grown less than 1.0 percent in each of the last 8 years. The average annual rate of manufacturing productivity growth from 2007 to 2018 is 0.7 percent, well below the long-term rate from 1987 to 2018 of 2.6 percent. Unit labor costs increased 0.9 percent in 2018.

Quarterly and annual data for all sectors from 2016 to 2018 appear in tables 1-6. Full historical measures can be found at: www.bls.gov/lpc/#data.

The preliminary Productivity and Costs news release for first-quarter 2019 is scheduled to be released on Thursday, May 2, 2019 at 8:30 a.m. (EDT).

Table A1. Labor productivity growth and related measures - revised fourth-quarter 2018
(percent change from previous quarter at annual rate and from same quarter a year ago)

Sector	Percent change from:	Labor productivity	Output	Hours worked	Hourly compensation	Real hourly compensation	Unit labor costs
Nonfarm business	Previous quarter	1.9	3.1	1.2	3.9	2.4	2.0
	A year ago	1.8	3.7	1.9	2.8	0.6	1.0
Business	Previous quarter	1.8	3.2	1.3	3.6	2.1	1.8
	A year ago	1.9	3.6	1.7	2.9	0.7	1.0
Manufacturing	Previous quarter	2.0	2.7	0.8	4.3	2.7	2.2
	A year ago	1.0	2.9	1.9	1.8	-0.4	0.8
Durable manufacturing	Previous quarter	3.3	6.1	2.7	4.1	2.6	0.7
	A year ago	1.5	4.5	3.0	1.6	-0.6	0.2
Nondurable manufacturing	Previous quarter	1.9	-0.7	-2.5	4.1	2.6	2.1
	A year ago	1.3	1.3	0.0	1.8	-0.4	0.6

Table A2. Labor productivity growth and related measures - revised and previously published third-quarter 2018
(percent change from previous quarter at annual rate)

Sector		Labor productivity	Output	Hours worked	Hourly compensation	Real hourly compensation	Unit labor costs
Nonfinancial corporate	Revised	6.1	7.7	1.5	3.6	1.6	-2.3
	Previously published	6.1	7.2	1.0	3.3	1.3	-2.7

Table B1. Labor productivity growth and related measures - revised and previously published fourth-quarter 2018
(percent change from previous quarter at annual rate)

Sector		Labor productivity	Output	Hours worked	Hourly compensation	Real hourly compensation	Unit labor costs
Nonfarm business	Revised	1.9	3.1	1.2	3.9	2.4	2.0
	Previously published	N.A.	N.A.	1.6	N.A.	N.A.	N.A.
Business	Revised	1.8	3.2	1.3	3.6	2.1	1.8
	Previously published	N.A.	N.A.	1.7	N.A.	N.A.	N.A.
Manufacturing	Revised	2.0	2.7	0.8	4.3	2.7	2.2
	Previously published	1.3	2.3	1.0	N.A.	N.A.	N.A.
Durable manufacturing	Revised	3.3	6.1	2.7	4.1	2.6	0.7
	Previously published	2.6	5.7	3.0	N.A.	N.A.	N.A.
Nondurable manufacturing	Revised	1.9	-0.7	-2.5	4.1	2.6	2.1
	Previously published	1.2	-1.2	-2.4	N.A.	N.A.	N.A.

Table B2. Labor productivity growth and related measures - revised and previously published third-quarter 2018
(percent change from previous quarter at annual rate)

Sector		Labor productivity	Output	Hours worked	Hourly compensation	Real hourly compensation	Unit labor costs
Nonfarm business	Revised	1.8	4.0	2.1	3.5	1.4	1.6
	Previously published	2.2	4.0	1.7	3.2	1.2	0.9
Business	Revised	1.4	3.9	2.5	3.2	1.2	1.8
	Previously published	1.8	3.9	2.1	2.9	0.9	1.1
Manufacturing	Revised	1.0	4.4	3.4	2.8	0.8	1.8
	Previously published	1.1	4.2	3.1	-0.2	-2.2	-1.3
Durable manufacturing	Revised	2.0	5.9	3.9	1.4	-0.6	-0.5
	Previously published	2.2	5.8	3.6	0.5	-1.5	-1.7
Nondurable manufacturing	Revised	0.2	2.7	2.5	5.4	3.3	5.2
	Previously published	0.2	2.6	2.3	-1.6	-3.6	-1.9

Table C1. Labor productivity growth and related measures - annual average changes: 2014-18

Sector	Year	Labor productivity	Output	Hours worked	Hourly compensation	Real hourly compensation	Unit labor costs
Nonfarm business	2018	1.3	3.5	2.2	2.7	0.3	1.4
	2017	1.1	2.7	1.6	3.4	1.2	2.2
	2016	0.2	1.6	1.4	1.1	-0.2	0.9
	2015	1.3	3.5	2.2	3.1	2.9	1.8
	2014	0.8	3.1	2.3	2.8	1.1	2.0
Manufacturing	2018	0.8	2.7	1.9	1.7	-0.7	0.9
	2017	0.7	1.8	1.0	3.4	1.2	2.6
	2016	0.3	0.4	0.0	0.6	-0.7	0.3
	2015	-1.6	-0.6	1.0	2.5	2.3	4.1
	2014	0.0	1.6	1.6	2.8	1.1	2.8

TECHNICAL NOTES

Labor Hours

Hours data for the labor productivity and cost measures include hours worked for all persons working in the sector—wage and salary workers, the self-employed and unpaid family workers. The primary source of hours and employment data is the BLS Current Employment Statistics (CES) program, which provides monthly survey data on the number of jobs held by wage and salary workers in nonfarm establishments, counting a person who is employed by two or more establishments at each place of employment. The CES also provides average weekly paid hours of production and nonsupervisory workers in these establishments. Weekly paid hours are adjusted to hours worked using data from the National Compensation Survey (NCS) for 1996 forward and data from the BLS Hours at Work survey, conducted for this purpose, prior to 1990. Between 1990 and 1995, weekly paid hours are adjusted to hours at work using a combination of NCS and Hours at Work survey data. The Office of Productivity and Technology estimates average weekly hours at work for nonproduction and supervisory workers using information from the Current Population Survey (CPS), the CES, and the NCS.

Data from the CPS are used to estimate hours worked for farm labor, nonfarm proprietors, and nonfarm unpaid family workers. Using CPS information on employment and hours worked at primary jobs and all other jobs, separately, the BLS productivity measures assign all hours worked to the appropriate industrial sector. Hours for government enterprises are derived from the CPS, the CES, and the National Income and Product Accounts (NIPA) prepared by the Bureau of Economic Analysis (BEA) of the Department of Commerce.

Output

Business sector output is a chain-type, current-weighted index constructed after excluding from gross domestic product (GDP) the following outputs: general government, nonprofit institutions, and private households (including owner-occupied housing). Corresponding exclusions also are made in labor hours. Business output accounted for about 76 percent of the value of GDP in 2017. Nonfarm business, which excludes farming, accounted for about 75 percent of GDP in 2017.

Annual indexes for manufacturing and its durable and nondurable goods components are constructed by deflating current-dollar industry value of production data from the U.S. Bureau of the Census with deflators from the BLS. These deflators are based on data from the BLS Producer Price Index program and other sources. The industry shipments are aggregated using annual weights, and intrasector transactions are removed. Quarterly manufacturing output measures are based on the indexes of industrial production prepared monthly by the Board of Governors of the Federal Reserve System, adjusted to be consistent with annual indexes of manufacturing sector output prepared by BLS.

Nonfinancial corporate output is a chain-type, current-weighted index calculated on the basis of the costs incurred and the incomes earned from production. The output measure excludes the following outputs from GDP: general government; nonprofit institutions; private households; unincorporated business; and those corporations classified as offices of bank holding companies, offices of other holding companies, or offices in the finance and insurance sector. Nonfinancial corporations accounted for about 49 percent of the value of GDP in 2017.

Labor Productivity

The measure describes the relationship between real output and the labor time involved in its production. Measures of labor productivity growth show the changes from period to period in the amount of goods and services produced per hour worked. They reflect the joint effects of many influences, including changes in technology; capital investment; level of output; utilization of capacity, energy, and materials; the organization of production; managerial skill; and the characteristics and effort of the work force.

Labor Compensation

The measure includes accrued wages and salaries, supplements, employer contributions to employee benefit plans, and taxes. Estimates of labor compensation by major sector, required for measures of hourly compensation and unit labor costs, are based primarily on employee compensation data from the NIPA, prepared by the BEA. The compensation of employees in general government, nonprofit institutions and private households are subtracted from compensation of employees in domestic industries to derive employee compensation for the business sector. The labor compensation of proprietors cannot be explicitly identified and must be estimated. This is done by assuming that proprietors have the same hourly compensation as employees in the same sector. The quarterly labor productivity and cost measures do not contain estimates of compensation for unpaid family workers.

Unit Labor Costs

These measures describe the relationship between compensation per hour and labor productivity, or real output per hour, and can be used as an indicator of inflationary pressure on producers. Increases in hourly compensation increase unit labor costs; labor productivity increases offset compensation increases and lower unit labor costs.

Presentation of the data

The quarterly data in this release are presented in three ways: as percent changes from the previous quarter presented at a compound annual rate, as percent changes from the corresponding quarter of the previous year, and as index number series where 2012=100. Annual data are presented both as index number series and percent changes from the previous year.

The index numbers and rates of change reported in the productivity and costs news release are rounded to one decimal place. All percent changes in this release and on the BLS web site are calculated using index numbers to three decimal places. A complete historical series of these index numbers are available at the BLS web site, www.bls.gov/data/home.htm, or by contacting the BLS Division of Major Sector Productivity (Telephone 202-691-5606 or email productivity@bls.gov).

For a more detailed explanation of methodology see "Technical Information About the Major Sector Productivity and Costs Methods" at www.bls.gov/lpc/lpcmethods.pdf.

Information in this release will be made available to sensory-impaired individuals upon request. Voice phone: 202-691-5200; Federal Relay Service number: 1-800-877-8339.

Table 1. Business sector: Labor productivity, hourly compensation, unit labor costs, and prices, seasonally adjusted.

Year and quarter	Labor productivity	Output	Hours worked	Hourly compensation (1)	Real hourly compensation (2)	Unit labor costs	Unit nonlabor payments (3)	Implicit price deflator (4)

Percent change from previous quarter at annual rate (5)								
2018 ANNUAL	1.4 r	3.5 r	2.1	2.8 r	0.4 r	1.4 r	3.3 r	2.2 r
2018 IV	1.8 r	3.2 r	1.3 r	3.6 r	2.1 r	1.8 r	1.8 r	1.8 r
III	1.4 r	3.9	2.5 r	3.2 r	1.2 r	1.8 r	0.3 r	1.1
II	3.4 r	5.1	1.6 r	0.3 r	-1.8 r	-3.0 r	12.8 r	3.6
I	0.9 r	2.5	1.6 r	4.6 r	1.3 r	3.7	-0.5 r	1.9
2017 ANNUAL	1.1	2.6	1.5	3.4	1.2	2.3	1.0	1.7
2017 IV	-1.2 r	2.9	4.1	1.1 r	-2.1	2.3 r	3.7 r	2.9
III	2.8	3.5	0.7	5.6	3.4	2.8	0.9	2.0
II	1.6	3.7	2.1	1.3	1.3 r	-0.3	2.3	0.8
I	-0.2	1.9	2.0	4.0	1.0	4.2	-1.3	1.8
2016 ANNUAL	0.2	1.7	1.5	1.1 r	-0.2	0.9	0.9	0.9
2016 IV	2.0 r	2.2	0.2 r	5.6	2.8 r	3.6	-0.6	1.7
III	1.4 r	2.2	0.7 r	2.4 r	0.5 r	0.9	1.7	1.3
II	0.7	2.6	1.8 r	0.3	-2.3	-0.4	7.7	3.1
I	0.4 r	1.6	1.2 r	0.2 r	0.3 r	-0.2	-1.5	-0.8

Percent change from corresponding quarter of previous year								
2018 ANNUAL	1.4 r	3.5 r	2.1	2.8 r	0.4 r	1.4 r	3.3 r	2.2 r
2018 IV	1.9 r	3.6 r	1.7 r	2.9 r	0.7 r	1.0 r	3.5 r	2.1 r
III	1.1 r	3.6	2.4	2.3 r	-0.4	1.2 r	3.9 r	2.4
II	1.4	3.5	2.0	2.9	0.2	1.4	4.1	2.6
I	1.0 r	3.1	2.1 r	3.1	1.0 r	2.1	1.6	1.9
2017 ANNUAL	1.1	2.6	1.5	3.4	1.2	2.3	1.0	1.7
2017 IV	0.7 r	3.0	2.2	3.0	0.9	2.3	1.4	1.9
III	1.5	2.8	1.2 r	4.1	2.1	2.6	0.3	1.6
II	1.2	2.5	1.3	3.3	1.4	2.1	0.5	1.4
I	1.0	2.2	1.2	3.1	0.5	2.1	1.8	2.0
2016 ANNUAL	0.2	1.7	1.5	1.1 r	-0.2	0.9	0.9	0.9
2016 IV	1.1	2.1	1.0	2.1	0.3	1.0	1.8	1.3
III	-0.2 r	1.6	1.8	0.5	-0.7	0.6	1.0	0.8
II	-0.3 r	1.3	1.6	0.4	-0.7	0.7	0.9	0.8
I	0.1	1.6	1.5 r	1.3 r	0.2 r	1.2	-0.2	0.6

Indexes 2012=100								
2018 ANNUAL	105.5 r	117.9 r	111.8 r	115.1 r	105.0 r	109.1 r	108.6 r	108.8 r
2018 IV	106.3 r	119.5 r	112.5 r	116.3 r	105.5 r	109.5 r	109.7 r	109.6 r
III	105.8 r	118.6	112.1 r	115.3 r	104.9 r	109.0 r	109.3 r	109.1
II	105.4 r	117.5	111.4 r	114.4 r	104.6 r	108.5 r	109.2 r	108.8
I	104.5 r	116.0	111.0 r	114.3 r	105.1 r	109.3 r	106.0 r	107.9
2017 ANNUAL	104.1 r	114.0	109.5 r	111.9 r	104.7 r	107.5 r	105.1 r	106.5
2017 IV	104.3 r	115.3	110.6 r	113.0 r	104.7 r	108.3	106.1	107.4
III	104.6 r	114.5	109.4 r	112.7 r	105.3 r	107.7 r	105.1 r	106.6
II	103.9 r	113.5	109.3 r	111.2 r	104.4 r	107.0 r	104.9 r	106.1
I	103.5 r	112.5	108.7 r	110.8 r	104.1 r	107.0 r	104.3 r	105.8
2016 ANNUAL	103.0 r	111.1	107.9 r	108.3 r	103.4 r	105.2 r	104.1 r	104.7
2016 IV	103.6 r	112.0	108.2 r	109.7 r	103.8 r	105.9 r	104.6 r	105.4
III	103.1 r	111.4	108.1 r	108.2 r	103.1 r	105.0	104.8	104.9
II	102.7 r	110.8	107.9 r	107.6 r	103.0 r	104.8 r	104.4 r	104.6
I	102.5 r	110.1	107.4 r	107.5 r	103.6 r	104.9 r	102.4 r	103.8

See footnotes following Table 6.
r=revised

March 7, 2019
Source: Bureau of Labor Statistics

Table 2. Nonfarm business sector: Labor productivity, hourly compensation, unit labor costs, and prices, seasonally adjusted.

Year and quarter	Labor productivity	Output	Hours worked	Hourly compensation (1)	Real hourly compensation (2)	Unit labor costs	Unit nonlabor payments (3)	Implicit price deflator (4)

Percent change from previous quarter at annual rate (5)								
2018 ANNUAL	1.3 r	3.5 r	2.2	2.7 r	0.3 r	1.4 r	3.4 r	2.3 r
2018 IV	1.9 r	3.1 r	1.2 r	3.9 r	2.4 r	2.0 r	1.4 r	1.7 r
III	1.8 r	4.0	2.1 r	3.5 r	1.4 r	1.6 r	1.1 r	1.4
II	2.8 r	5.0	2.1 r	-0.1 r	-2.2 r	-2.8	12.7	3.6
I	0.6 r	2.6	2.0 r	4.0 r	0.8 r	3.5 r	-0.4 r	1.8
2017 ANNUAL	1.1	2.7	1.6	3.4	1.2	2.2	0.9	1.6
2017 IV	-0.4 r	3.0	3.4 r	1.9	-1.4 r	2.3	3.7	2.9
III	2.2 r	3.6	1.4 r	5.1	2.9	2.8	1.1	2.1
II	1.6	3.8	2.2	1.3	1.2	-0.3	2.3	0.8
I	0.4	1.9	1.5	4.7	1.6	4.2	-2.4	1.3
2016 ANNUAL	0.2 r	1.6	1.4 r	1.1	-0.2	0.9	1.2	1.1
2016 IV	1.4 r	2.3	0.9 r	4.8 r	2.0 r	3.4	-0.1	1.8
III	1.2 r	2.2	1.0 r	2.1 r	0.2 r	0.9	2.2	1.5
II	1.0 r	2.5	1.5 r	0.7	-2.0	-0.2	7.8	3.2
I	0.5 r	1.6	1.1 r	0.3 r	0.4 r	-0.2	-0.6 r	-0.3

Percent change from corresponding quarter of previous year								
2018 ANNUAL	1.3 r	3.5 r	2.2	2.7 r	0.3 r	1.4 r	3.4 r	2.3 r
2018 IV	1.8 r	3.7 r	1.9	2.8 r	0.6 r	1.0 r	3.6 r	2.1 r
III	1.2 r	3.6	2.4 r	2.3 r	-0.4	1.1 r	4.2 r	2.4
II	1.3	3.5	2.2	2.7	0.0	1.4	4.2	2.6
I	1.0	3.2	2.2 r	3.1 r	0.9 r	2.0	1.7	1.9
2017 ANNUAL	1.1	2.7	1.6	3.4	1.2	2.2	0.9	1.6
2017 IV	1.0	3.1	2.1	3.2	1.1	2.2	1.1	1.8
III	1.4	2.9	1.5	3.9	1.9	2.5	0.2	1.5
II	1.2	2.6	1.4	3.2	1.3	2.0	0.5	1.4
I	1.0	2.2	1.2	3.1	0.5	2.0	1.8	1.9
2016 ANNUAL	0.2 r	1.6	1.4 r	1.1	-0.2	0.9	1.2	1.1
2016 IV	1.0	2.1	1.1 r	2.0 r	0.1	1.0 r	2.3	1.5
III	-0.1	1.6	1.7	0.6	-0.6	0.7	1.5	1.0
II	-0.3	1.2	1.4 r	0.5	-0.6	0.8	1.2	1.0
I	0.1 r	1.6	1.5 r	1.3 r	0.2 r	1.2	0.0	0.7

Indexes 2012=100								
2018 ANNUAL	105.3 r	117.8 r	111.9 r	115.2 r	105.1 r	109.4 r	109.5 r	109.4 r
2018 IV	106.1 r	119.4 r	112.5 r	116.5 r	105.6 r	109.8 r	110.7 r	110.2 r
III	105.6 r	118.5	112.2 r	115.4 r	105.0 r	109.3 r	110.3 r	109.7
II	105.1 r	117.3	111.6 r	114.4 r	104.6 r	108.8 r	110.0 r	109.3
I	104.4 r	115.9	111.0 r	114.4 r	105.2 r	109.6 r	106.8 r	108.4
2017 ANNUAL	103.9 r	113.8	109.5 r	112.1 r	104.8 r	107.9 r	105.9 r	107.0
2017 IV	104.3 r	115.2	110.5 r	113.3 r	105.0 r	108.7	106.9	107.9
III	104.4 r	114.3	109.6 r	112.8 r	105.4 r	108.1 r	105.9 r	107.1
II	103.8 r	113.3	109.2 r	111.4 r	104.6 r	107.3 r	105.6 r	106.6
I	103.4 r	112.3	108.6 r	111.0 r	104.3 r	107.4 r	105.0 r	106.4
2016 ANNUAL	102.8 r	110.8	107.8 r	108.5 r	103.6 r	105.5 r	104.9 r	105.3
2016 IV	103.3 r	111.7	108.2 r	109.8 r	103.9 r	106.3 r	105.7 r	106.0
III	102.9 r	111.1	108.0 r	108.5 r	103.4 r	105.4	105.7	105.6
II	102.6 r	110.5	107.7 r	107.9 r	103.3 r	105.2 r	105.1 r	105.2
I	102.4 r	109.8	107.3 r	107.7 r	103.8 r	105.2 r	103.2 r	104.4

See footnotes following Table 6.
r=revised

March 7, 2019
Source: Bureau of Labor Statistics

Table 3. Manufacturing sector: Labor productivity, hourly compensation, and unit labor costs, seasonally adjusted.

Year and quarter	Labor productivity	Output	Hours worked	Hourly compensation (1)	Real hourly compensation (2)	Unit labor costs

Percent change from previous quarter at annual rate (5)						
2018 ANNUAL	0.8 r	2.7 r	1.9 r	1.7 r	-0.7 r	0.9 r
2018 IV	2.0 r	2.7 r	0.8 r	4.3 r	2.7 r	2.2 r
III	1.0 r	4.4 r	3.4 r	2.8 r	0.8 r	1.8 r
II	1.2	2.6	1.4	-5.0	-7.0 r	-6.1
I	-0.1 r	2.0	2.1 r	5.4 r	2.1 r	5.5
2017 ANNUAL	0.7	1.8	1.0	3.4 r	1.2 r	2.6
2017 IV	4.0 r	5.5	1.4 r	1.2 r	-2.0 r	-2.7
III	-4.8 r	-1.9	3.1 r	2.6 r	0.4 r	7.8
II	3.2 r	2.9	-0.4 r	2.7 r	2.6 r	-0.5
I	0.4 r	2.2	1.7 r	4.7 r	1.7 r	4.3 r
2016 ANNUAL	0.3	0.4	0.0	0.6	-0.7	0.3
2016 IV	2.2 r	2.4	0.2 r	5.3 r	2.5 r	3.0
III	0.5 r	1.7	1.2 r	1.6 r	-0.2 r	1.2
II	-0.9 r	-1.1	-0.2	1.4 r	-1.3 r	2.3
I	3.1 r	1.8	-1.2 r	-2.1 r	-2.0 r	-5.0

Percent change from corresponding quarter of previous year						
2018 ANNUAL	0.8 r	2.7 r	1.9 r	1.7 r	-0.7 r	0.9 r
2018 IV	1.0 r	2.9 r	1.9 r	1.8 r	-0.4 r	0.8 r
III	1.5	3.6	2.1	1.0 r	-1.6 r	-0.5 r
II	0.0 r	2.0	2.0 r	1.0 r	-1.7 r	0.9
I	0.5	2.1	1.6	3.0 r	0.8 r	2.4
2017 ANNUAL	0.7	1.8	1.0	3.4 r	1.2 r	2.6
2017 IV	0.7 r	2.1	1.5	2.8 r	0.7 r	2.1
III	0.2	1.4	1.1 r	3.8	1.8 r	3.6
II	1.6	2.3	0.7	3.6	1.6 r	2.0
I	0.5	1.3	0.7 r	3.3 r	0.7 r	2.7
2016 ANNUAL	0.3	0.4	0.0	0.6	-0.7	0.3
2016 IV	1.2	1.2	0.0	1.5 r	-0.3	0.3
III	-0.2	0.3	0.5 r	-0.2	-1.4 r	0.0
II	0.2	0.0	-0.2	0.5 r	-0.6 r	0.2
I	0.1	-0.1	-0.1	0.6	-0.5	0.6

Indexes 2012=100						
2018 ANNUAL	101.2 r	107.7 r	106.4 r	112.0 r	102.2 r	110.6 r
2018 IV	101.8 r	109.0 r	107.1 r	112.9 r	102.4 r	110.9 r
III	101.3 r	108.3 r	106.9 r	111.7 r	101.7 r	110.3 r
II	101.1 r	107.2	106.0 r	110.9 r	101.5 r	109.8 r
I	100.8 r	106.5	105.7 r	112.4 r	103.3 r	111.5 r
2017 ANNUAL	100.5 r	104.9	104.5 r	110.1 r	103.0 r	109.6 r
2017 IV	100.8 r	105.9	105.1 r	110.9 r	102.8 r	110.1 r
III	99.8 r	104.5	104.7 r	110.6 r	103.3 r	110.8 r
II	101.0 r	105.0	103.9 r	109.9 r	103.2 r	108.8
I	100.2 r	104.3	104.0 r	109.1 r	102.5 r	108.9 r
2016 ANNUAL	99.7 r	103.1	103.4 r	106.6 r	101.8 r	106.9
2016 IV	100.1 r	103.7	103.6 r	107.9 r	102.1 r	107.8 r
III	99.6 r	103.1	103.6 r	106.5 r	101.5 r	107.0 r
II	99.5 r	102.7	103.2 r	106.1 r	101.5 r	106.7 r
I	99.7 r	103.0	103.3 r	105.7 r	101.9 r	106.0 r

See footnotes following Table 6.
r=revised

March 7, 2019
Source: Bureau of Labor Statistics

Table 4. Durable manufacturing sector: Labor productivity, hourly compensation, and unit labor costs, seasonally adjusted.

Year and quarter	Labor productivity	Output	Hours worked	Hourly compensation (1)	Real hourly compensation (2)	Unit labor costs

Percent change from previous quarter at annual rate (5)						
2018 ANNUAL	1.0	3.3	2.3 r	2.0 r	-0.5 r	0.9 r
2018 IV	3.3 r	6.1 r	2.7 r	4.1 r	2.6 r	0.7 r
III	2.0 r	5.9 r	3.9 r	1.4 r	-0.6 r	-0.5 r
II	0.2 r	2.0	1.8 r	-4.9 r	-6.9 r	-5.1
I	0.4 r	4.0	3.6 r	6.2 r	2.9 r	5.8
2017 ANNUAL	1.1	1.7	0.6	4.1	1.9	2.9
2017 IV	4.1 r	5.2	1.1 r	1.6 r	-1.7 r	-2.5 r
III	-4.9 r	-2.3	2.7 r	2.3 r	0.2 r	7.6
II	4.7 r	2.1	-2.5 r	6.2 r	6.1 r	1.5
I	-0.1 r	2.8	2.9 r	4.0 r	1.0 r	4.2
2016 ANNUAL	-0.8	-1.2	-0.4	1.0 r	-0.3	1.8
2016 IV	2.4 r	2.5	0.1 r	6.1 r	3.3 r	3.6
III	1.8 r	2.2	0.5 r	2.1 r	0.2 r	0.3
II	-0.3 r	-1.9	-1.6 r	2.0 r	-0.8	2.3
I	-0.5 r	-1.1	-0.6 r	-1.3 r	-1.3 r	-0.9

Percent change from corresponding quarter of previous year						
2018 ANNUAL	1.0	3.3	2.3 r	2.0 r	-0.5 r	0.9 r
2018 IV	1.5 r	4.5 r	3.0 r	1.6 r	-0.6 r	0.2 r
III	1.7 r	4.3	2.6 r	1.0 r	-1.6 r	-0.7 r
II	-0.1 r	2.2	2.3 r	1.2 r	-1.5 r	1.3
I	1.0 r	2.2	1.2 r	4.1	1.8	3.0
2017 ANNUAL	1.1	1.7	0.6	4.1	1.9	2.9
2017 IV	0.9	1.9	1.0	3.5	1.4	2.6
III	0.5	1.2	0.8	4.7	2.6	4.2
II	2.2	2.4	0.2	4.6	2.6	2.4
I	0.9	1.4	0.5 r	3.5 r	0.9	2.6
2016 ANNUAL	-0.8	-1.2	-0.4	1.0 r	-0.3	1.8
2016 IV	0.8	0.4	-0.4	2.2	0.3	1.3
III	-1.3	-1.4	0.0	0.2	-0.9	1.6
II	-1.3 r	-2.0	-0.7	0.8 r	-0.3 r	2.1
I	-1.5	-1.9	-0.4	0.7	-0.4	2.2

Indexes 2012=100						
2018 ANNUAL	101.6 r	108.2 r	106.5 r	112.8 r	102.9 r	111.0 r
2018 IV	102.5 r	110.4 r	107.7 r	113.5 r	102.9 r	110.7 r
III	101.7 r	108.7 r	107.0 r	112.3 r	102.2 r	110.5 r
II	101.2 r	107.2	106.0 r	111.9 r	102.4 r	110.7 r
I	101.1 r	106.7	105.5 r	113.4 r	104.2 r	112.1 r
2017 ANNUAL	100.6	104.8	104.2	110.6	103.4	110.0
2017 IV	101.0 r	105.6	104.5 r	111.7 r	103.5 r	110.5 r
III	100.0 r	104.3	104.3 r	111.2 r	103.9 r	111.2 r
II	101.3 r	104.9	103.6 r	110.6 r	103.9 r	109.2 r
I	100.1 r	104.3	104.2 r	108.9 r	102.3 r	108.8 r
2016 ANNUAL	99.5 r	103.0	103.5 r	106.3 r	101.5 r	106.8
2016 IV	100.1 r	103.6	103.5 r	107.9 r	102.1 r	107.7 r
III	99.5 r	103.0	103.5 r	106.3 r	101.3 r	106.8
II	99.1 r	102.4	103.3 r	105.7 r	101.2 r	106.7 r
I	99.2 r	102.9	103.8 r	105.2 r	101.4 r	106.1 r

See footnotes following Table 6.
r=revised

March 7, 2019
Source: Bureau of Labor Statistics

Table 5. Nondurable manufacturing sector: Labor productivity, hourly compensation, and unit labor costs, seasonally adjusted.

Year and quarter	Labor productivity	Output	Hours worked	Hourly compensation (1)	Real hourly compensation (2)	Unit labor costs

Percent change from previous quarter at annual rate (5)						
2018 ANNUAL	0.8 r	2.0	1.2 r	1.1 r	-1.4 r	0.3 r
2018 IV	1.9 r	-0.7 r	-2.5 r	4.1 r	2.6 r	2.1 r
III	0.2	2.7 r	2.5 r	5.4 r	3.3 r	5.2 r
II	2.6 r	3.3	0.7 r	-5.2 r	-7.2 r	-7.6
I	0.4 r	0.0	-0.5 r	3.4 r	0.2 r	3.0
2017 ANNUAL	-0.1 r	1.6	1.7 r	2.1 r	-0.1 r	2.2
2017 IV	3.7 r	5.8	2.1 r	0.6 r	-2.6 r	-2.9
III	-5.0 r	-1.4	3.8 r	3.2 r	1.0 r	8.6
II	0.4 r	3.7	3.3 r	-3.3 r	-3.4 r	-3.7
I	1.8 r	1.5	-0.3 r	5.8 r	2.7 r	3.9 r
2016 ANNUAL	0.6 r	1.4	0.8 r	0.0	-1.3 r	-0.6
2016 IV	1.5 r	1.9	0.4 r	3.7 r	0.9 r	2.2
III	-2.1 r	0.5	2.6 r	1.0 r	-0.9 r	3.1
II	-3.4 r	-1.2	2.2 r	0.7 r	-2.0 r	4.2
I	6.1 r	3.7	-2.2 r	-3.6 r	-3.6 r	-9.1

Percent change from corresponding quarter of previous year						
2018 ANNUAL	0.8 r	2.0	1.2 r	1.1 r	-1.4 r	0.3 r
2018 IV	1.3 r	1.3 r	0.0 r	1.8 r	-0.4 r	0.6 r
III	1.7 r	2.9	1.2 r	1.0 r	-1.6 r	-0.7 r
II	0.4 r	1.9	1.5 r	0.4 r	-2.2 r	0.1
I	-0.2 r	2.0	2.2 r	1.0 r	-1.2 r	1.1
2017 ANNUAL	-0.1 r	1.6	1.7 r	2.1 r	-0.1 r	2.2
2017 IV	0.2 r	2.4	2.2 r	1.5 r	-0.6 r	1.3
III	-0.4 r	1.4	1.8 r	2.3 r	0.3 r	2.7 r
II	0.4	1.9	1.5 r	1.7 r	-0.2 r	1.3
I	-0.6 r	0.6	1.2 r	2.8 r	0.2 r	3.3
2016 ANNUAL	0.6 r	1.4	0.8 r	0.0	-1.3 r	-0.6
2016 IV	0.5	1.2	0.7	0.4 r	-1.4 r	0.0
III	-0.2 r	1.2	1.3 r	-1.0 r	-2.1 r	-0.8
II	0.9	1.5	0.7	0.0	-1.1	-0.8
I	1.4	1.8	0.3 r	0.5	-0.6	-0.9

Indexes 2012=100						
2018 ANNUAL	101.5 r	107.9 r	106.3 r	110.4 r	100.8 r	108.8 r
2018 IV	102.1 r	108.4 r	106.1 r	111.6 r	101.2 r	109.3 r
III	101.6 r	108.5 r	106.8 r	110.5 r	100.6 r	108.8 r
II	101.6 r	107.8	106.1 r	109.1 r	99.8 r	107.4 r
I	100.9 r	106.9	106.0 r	110.6 r	101.6 r	109.5 r
2017 ANNUAL	100.8 r	105.8	105.0 r	109.3 r	102.2 r	108.5 r
2017 IV	100.8 r	107.0	106.1 r	109.6 r	101.6 r	108.7 r
III	99.9 r	105.5	105.5 r	109.5 r	102.3 r	109.6 r
II	101.2 r	105.8	104.6 r	108.6 r	102.0 r	107.3 r
I	101.1 r	104.9	103.7 r	109.5 r	102.9 r	108.3 r
2016 ANNUAL	100.8 r	104.1	103.3 r	107.1 r	102.3 r	106.2 r
2016 IV	100.6 r	104.5	103.8 r	108.0 r	102.2 r	107.3 r
III	100.3 r	104.0	103.7 r	107.0 r	102.0 r	106.7 r
II	100.8 r	103.9	103.1 r	106.8 r	102.2 r	105.9 r
I	101.7 r	104.2	102.5 r	106.6 r	102.7 r	104.8 r

See footnotes following Table 6.
r=revised

March 7, 2019
Source: Bureau of Labor Statistics

Table 6. Nonfinancial corporate sector: Labor productivity, hourly compensation, unit labor costs, unit profits, and prices, seasonally adjusted.

Year and quarter	Labor productivity	Output	Hours worked	Hourly compensation (1)	Real hourly compensation (2)	Unit labor costs	Unit nonlabor costs (6)	Total unit costs (7)	Unit profits (8)	Implicit price deflator (4)
Percent change from previous quarter at annual rate (5)										
2018 III	6.1	7.7 r	1.5 r	3.6 r	1.6 r	-2.3 r	-3.0 r	-2.6	18.9 r	0.0
II	-2.1 r	0.8	2.9 r	-0.2 r	-2.3 r	1.9	2.7	2.2	17.1	4.0
I	3.2 r	5.3	2.0 r	4.7 r	1.4 r	1.4	-1.0	0.6	5.5	1.2
2017 ANNUAL	1.6	3.4	1.7	3.2	1.0	1.5	1.0	1.3	-2.1	0.9
2017 IV	1.4	4.2	2.8 r	0.3	-3.0 r	-1.1	0.5	-0.6	7.8	0.4
III	1.0 r	2.5	1.5	2.7 r	0.6	1.7	0.6	1.3	-17.1	-1.2
II	4.5	7.4	2.7	-0.1	-0.2	-4.4	-2.4	-3.7	7.5	-2.4
I	3.1	5.0	1.8	8.1	5.0	4.9	0.0	3.2	10.6	4.1
2016 ANNUAL	0.0	1.5	1.5	1.1	-0.2	1.0	0.1	0.7	-6.8	-0.3
2016 IV	-2.3 r	-1.7	0.6 r	3.5 r	0.7 r	6.0	7.6	6.5	-9.1	4.4
III	4.6 r	6.3	1.7 r	1.4 r	-0.5 r	-3.1	-3.6	-3.3	-5.4	-3.5
II	-4.8	-3.6	1.2 r	0.3	-2.4	5.4	6.5	5.8	-21.8	1.6
I	3.5 r	3.8	0.2 r	2.3 r	2.3 r	-1.2	-14.3	-5.7	31.2	-1.5
Percent change from corresponding quarter of previous year										
2018 III	2.1	4.4 r	2.3 r	2.1 r	-0.6	0.0 r	-0.2 r	-0.1	12.2 r	1.4
II	0.9	3.2	2.3	1.9 r	-0.8	1.0	0.7	0.9	2.5	1.1
I	2.5	4.8	2.2 r	1.9 r	-0.3 r	-0.6	-0.6	-0.6	0.3	-0.5
2017 ANNUAL	1.6	3.4	1.7	3.2	1.0	1.5	1.0	1.3	-2.1	0.9
2017 IV	2.5	4.8	2.2	2.7	0.6	0.2	-0.3	0.0	1.5	0.2
III	1.5	3.2	1.7	3.5	1.5	1.9	1.4	1.8	-2.7	1.2
II	2.4	4.2	1.7	3.2	1.2 r	0.7	0.3	0.6	0.5	0.6
I	0.1	1.4	1.3	3.3	0.7	3.2	2.5	3.0	-7.1	1.6
2016 ANNUAL	0.0	1.5	1.5	1.1	-0.2	1.0	0.1	0.7	-6.8	-0.3
2016 IV	0.2 r	1.1	0.9 r	1.9 r	0.0	1.7	-1.4	0.7	-3.1	0.2
III	0.3	1.9	1.6	0.7	-0.5	0.4	0.2	0.4	-11.6	-1.4
II	-0.6 r	1.0	1.7	0.6	-0.5	1.2	1.1	1.2	-7.7	0.0
I	0.4 r	2.0	1.6 r	1.3 r	0.2 r	0.9	0.4	0.7	-4.4	0.0
Indexes 2012=100										
2018 III	106.3 r	120.4 r	113.3 r	114.4 r	104.1 r	107.7 r	103.7 r	106.4 r	99.9 r	105.4
II	104.7 r	118.2	112.9 r	113.4 r	103.7 r	108.3	104.5	107.1	95.6	105.4
I	105.3 r	118.0	112.1 r	113.5 r	104.3 r	107.8	103.8	106.5	91.9	104.4
2017 ANNUAL	103.7 r	114.7	110.6 r	111.8 r	104.5 r	107.7	104.1	106.5	91.2	104.3
2017 IV	104.4 r	116.5	111.6 r	112.2 r	104.0 r	107.4	104.1	106.3	90.7	104.1
III	104.1 r	115.3	110.8 r	112.1 r	104.7 r	107.7	104.0	106.5	89.0	104.0
II	103.8 r	114.6	110.4 r	111.3 r	104.6 r	107.3	103.8	106.1	93.3	104.3
I	102.7 r	112.6	109.6 r	111.4 r	104.6 r	108.5	104.4	107.1	91.6	104.9
2016 ANNUAL	102.1 r	111.0	108.7 r	108.3 r	103.4 r	106.1	103.1	105.1	93.1	103.4
2016 IV	101.9 r	111.2	109.1 r	109.2 r	103.4 r	107.2	104.4	106.3	89.4	103.9
III	102.5 r	111.7	109.0 r	108.3 r	103.2 r	105.7	102.5	104.6	91.5	102.8
II	101.3 r	110.0	108.5 r	107.9 r	103.3 r	106.5	103.5	105.5	92.8	103.7
I	102.6 r	111.0	108.2 r	107.8 r	103.9 r	105.1	101.9	104.0	98.7	103.3

See footnotes following Table 6.
r=revised

March 7, 2019
Source: Bureau of Labor Statistics

SOURCES: Output data are from the Bureau of Economic Analysis and the Census Bureau of the U.S. Department of Commerce; the Bureau of Labor Statistics, U.S. Department of Labor; and the Federal Reserve Board. Hours and compensation data are from the Bureau of Labor Statistics and the Bureau of Economic Analysis.

RELIABILITY: Productivity and cost measures are regularly revised as more complete information becomes available. The measures are first published within 40 days of the close of the reference period; revisions appear 30 days later, and second revisions after an additional 60 days. In the business sector, the third publication (second revision) of a quarterly index of output per hour of all persons has differed from the initial value by between -1.5 and 1.4 index points approximately 95 percent of the time. This interval is based on the performance of this measure between the fourth quarter of 1995 and the third quarter of 2018.

Table Footnotes

- (1) Wages and salaries of employees plus employers' contributions for social insurance and private benefit plans. Except for nonfinancial corporations, where there are no self-employed, data also include an estimate of wages, salaries, and supplemental payments for the self-employed.
- (2) The change for recent quarters is based on the Consumer Price Index for all urban consumers (CPI-U). The trend from 1978-2017 is based on the Consumer Price Index research series (CPI-U-RS).
- (3) Unit nonlabor payments include profits, consumption of fixed capital, taxes on production and imports less subsidies, net interest and miscellaneous payments, business current transfer payments, rental income of persons, and the current surplus of government enterprises.
- (4) Current dollar output divided by the output index.
- (5) Quarterly changes: Percent change compounded at annual rate is calculated using index numbers to three decimal places. Indexes published in the news release are rounded to one decimal place for convenience. Annual changes: Percent change is calculated using annual indexes to three decimal places.
- (6) Unit nonlabor costs include consumption of fixed capital, taxes on production and imports less subsidies, net interest and miscellaneous payments, and business current transfer payments.
- (7) Total unit costs are the sum of unit labor and nonlabor costs.
- (8) Unit profits include corporate profits before tax with inventory valuation and capital consumption adjustments.