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

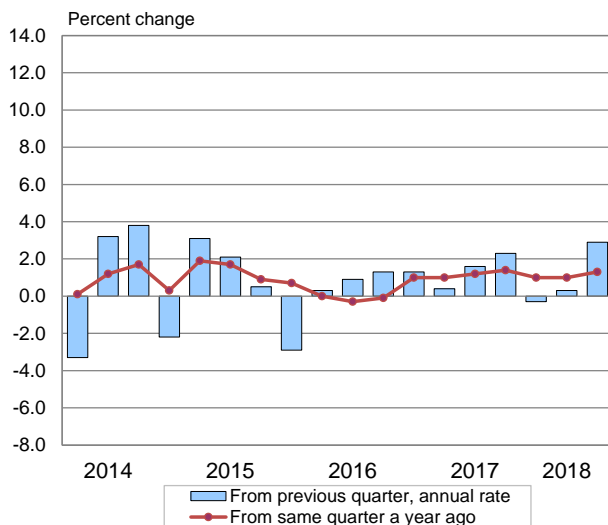
### PRODUCTIVITY AND COSTS

#### Second Quarter 2018, Preliminary

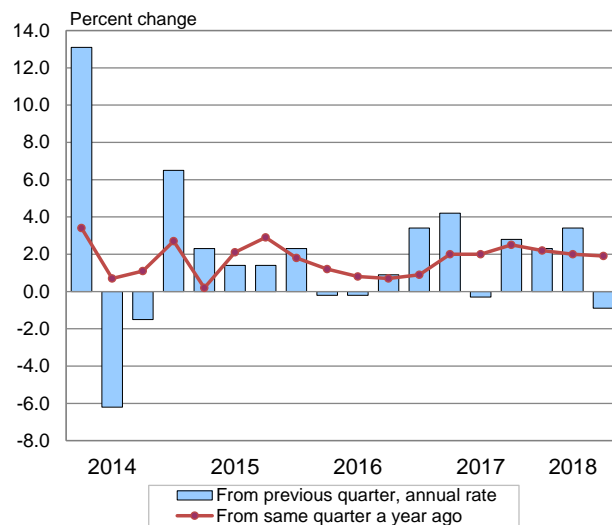
**Nonfarm business sector labor productivity** increased 2.9 percent during the second quarter of 2018, the U.S. Bureau of Labor Statistics reported today, as output increased 4.8 percent and hours worked increased 1.9 percent. (All quarterly percent changes in this release are seasonally adjusted annual rates.) From the second quarter of 2017 to the second quarter of 2018, productivity increased 1.3 percent, reflecting a 3.5-percent increase in output and a 2.2-percent increase in hours worked. (See chart 1 and tables A1 and 2.)

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, 2014Q1 – 2018Q2**



**Chart 2. Unit labor costs, nonfarm business, 2014Q1 – 2018Q2**



**Unit labor costs** in the nonfarm business sector decreased 0.9 percent in the second quarter of 2018, reflecting a 2.0-percent increase in hourly compensation and a 2.9-percent increase in productivity. Unit labor costs increased 1.9 percent over the last four quarters. (See chart 2 and tables A1 and 2.)

#### Historical Revisions to Productivity and Costs Data

Data in this release reflect the 2018 Comprehensive Update of the National Income and Product Accounts (NIPA) released by the Bureau of Economic Analysis of the U.S. Department of Commerce on July 27, 2018. See “Revised measures” section 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 0.9 percent in the second quarter of 2018, as output increased 1.9 percent and hours worked increased 1.0 percent. Productivity increased 0.9 percent in the durable manufacturing sector, as output rose 2.4 percent and hours worked increased 1.4 percent. In the non-durable goods manufacturing sector, a 1.1-percent increase in productivity reflected a 1.5-percent increase in output and a 0.4-percent increase in hours worked. Over the last four quarters, total manufacturing sector productivity decreased 0.2 percent, as output increased 1.8 percent and hours worked increased 2.1 percent. **Unit labor costs** in manufacturing rose 0.6 percent in the second quarter of 2018 and increased 2.7 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 7.)

Revised first-quarter 2018 measures were announced today for the **nonfinancial corporate sector**. Productivity increased 3.0 percent in the first quarter of 2018 and increased 2.5 percent over the last four quarters. Unit profits of nonfinancial corporations increased at a 5.5-percent annual rate in the first quarter of 2018 and increased 0.3 percent over the last four quarters. (See tables A2 and 6.)

### **Revised measures**

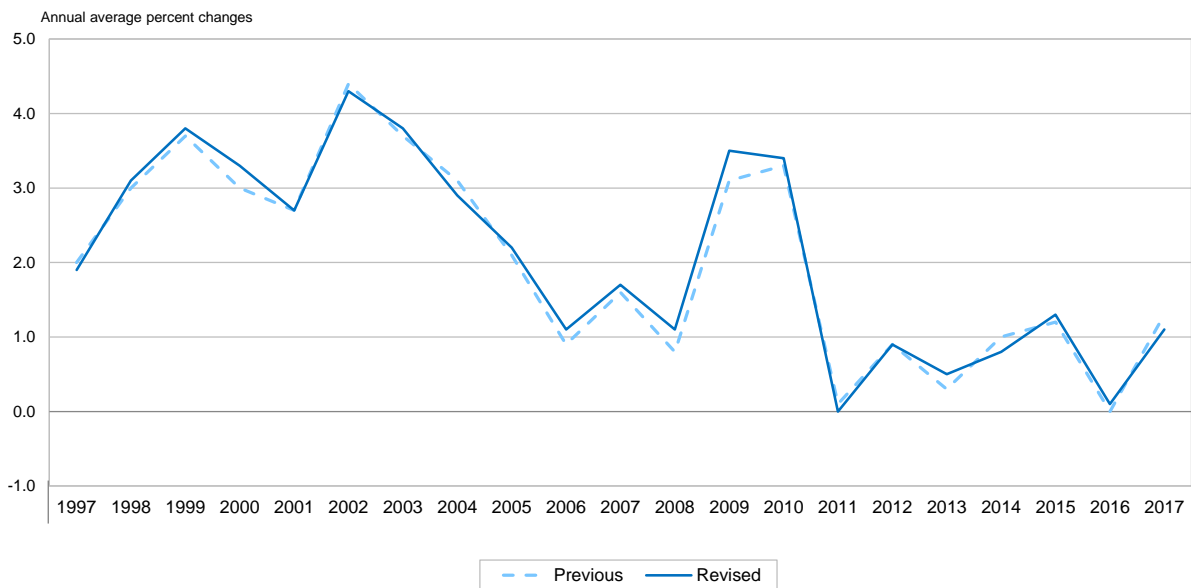
Measures of output for the business, nonfarm business, and nonfinancial corporate sectors, and measures of compensation for all sectors incorporate revised National Income and Product Accounts (NIPA) data for first-quarter 1947 through first-quarter 2018 released on July 27 by the Bureau of Economic Analysis (BEA), U.S. Department of Commerce. As a result, all measures incorporating output and compensation were revised, including labor productivity and unit labor costs. The revisions affected both annual and quarterly data, with the revisions to quarterly data being more substantial, due to the incorporation of improved historical seasonal adjustment methodology by BEA. Measures of output for the manufacturing sectors incorporate regular updates of source data for the first quarter of 2018 and the fourth quarter of 2017. Hours and related measures were revised back to 2000 for the business and nonfarm business sectors due to revised NIPA data on government enterprises employment and on the proportion of sector compensation paid to employees of nonprofit institutions. Hours and related measures were revised back to 2000 for the nonfinancial corporate sector due to the incorporation of revised NIPA data on the proportion of sector compensation paid to employees of corporations. Indexes of all measures show historical revisions because the base year was changed from 2009 to 2012; resulting revisions to percent changes are small.

Table B1 presents revised and previous labor productivity and related measures for the nonfarm business, business, and manufacturing sectors for the first quarter of 2018; table C1 presents annual data for the nonfarm business, total manufacturing, and nonfinancial corporate sectors from 2015 to 2017.

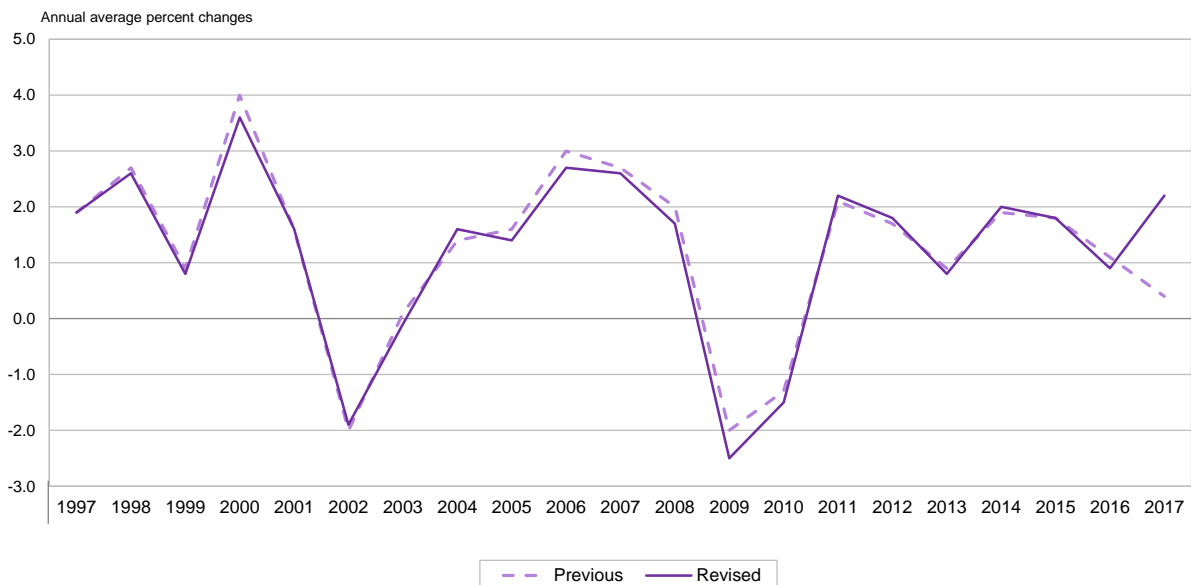
**Nonfarm business sector productivity** increased 0.3 percent in the **first quarter of 2018**—similar to the previously reported estimate (0.4 percent)—reflecting a 0.1-percentage point downward revision to output. (See table B1.) An upward revision to first-quarter unit labor costs—from an increase of 2.9 percent to an increase of 3.4 percent—reflected a 0.4-percentage point upward revision to hourly compensation and a 0.1-percentage point downward revision to productivity. Real hourly compensation increased 0.2 percent after revision, rather than decreasing 0.2 percent as previously published.

**Historical revisions** to labor productivity and unit labor costs in the nonfarm business sector for the more recent period are presented in Charts 3 and 4. Chart 3 shows the revised and previous estimates of annual average percent change in labor productivity for the years 1997 through 2017. The revisions mirror the NIPA revisions to output, with notable periods of upward revision in the latter 1990s and latter 2000s. The average annual rate of productivity growth from 2007 to 2017—representing the current business cycle—was revised up 0.1 percentage point, to a rate of 1.3 percent. The productivity growth rate over the last business cycle, from 2001 to 2007, was also revised up 0.1 percentage point, to a rate of 2.7 percent. Earlier business cycle trends also remained largely unchanged. Chart 4 shows the revised and previous estimates of annual average percent change in unit labor costs for the years 1997 through 2017. This series reflects the revisions to labor productivity and hourly compensation, and shows notable downward revisions in the latter 2000s. There was also a large upward revision in 2017, due to a large upward revision to hourly compensation in that year.

**Chart 3. Labor productivity, revised and previous annual average percent changes, nonfarm business, all persons, 1997-2017**



**Chart 4. Unit labor costs, revised and previous annual average percent changes, nonfarm business, all persons, 1997-2017**



**Annual average** productivity growth in the nonfarm business sector in 2017 was revised down 0.2 percentage point to an increase of 1.1 percent. Unit labor costs increased 2.2 percent in the nonfarm business sector in 2017, rather than increasing 0.4 percent, reflecting both a 1.7-percentage point upward revision to hourly compensation and a 0.2-percentage point downward revision to productivity. Real hourly compensation increased 1.2 percent in 2017, rather than decreasing 0.5 percent as previously reported. (See table C1.)

**Manufacturing sector productivity** decreased 1.0 percent in the **first quarter of 2018**—a smaller decline than previously reported. Productivity was revised up 0.9 percentage point, to an increase of 0.1 percent in the durable goods sector, and was revised down 0.5 percentage point, to a decrease of 1.4 percent in the nondurable goods sector. Unit labor costs increased 5.5 percent in the manufacturing sector rather than increasing 5.2 percent as reported June 6. Unit labor costs were revised down 1.2 percentage points, to an increase of 5.5 percent in the durable goods sector, and were revised up 2.5 percentage points, to an increase of 3.4 percent in the nondurable goods sector. Total manufacturing real hourly compensation increased 0.9 percent, as revised. (See table B1.)

**Annual average** manufacturing productivity grew 0.7 percent in 2017, unrevised from the previously reported estimate. Productivity was also unrevised in the manufacturing sector in 2016 and 2015. Unit labor costs were revised up to an increase of 2.6 percent in 2017, reflecting a 1.6-percentage point upward revision to hourly compensation. After revision, manufacturing real hourly compensation increased 1.1 percent in 2017 rather than decreasing 0.4 percent. (See tables C1, 3, 4, and 5.)

**Nonfinancial corporate sector** productivity growth was revised up in the **first quarter of 2018**, to an increase of 3.0 percent, rather than the previously published increase of 1.9 percent; this revision was due solely to a 1.1-percentage point upward revision to output; hours were unrevised. (See table A2.)

**Annual average** productivity in the nonfinancial corporate sector increased 1.6 percent in 2017, an upward revision from the preliminary estimate of a 1.0-percent increase. (See tables C1 and 6.) Though the rate over the current business cycle—from 2007 to 2017—increased at the same 1.0-percent rate as was reported June 6, there were notable revisions in some of the years of this period, particularly three consecutive 0.3-percentage point upward revisions, in 2011, 2012, and 2013, followed by a 0.9-percentage point downward revision in 2014.

Complete annual and quarterly data series can be found on the Productivity and Costs home page: [www.bls.gov/lpc/#data](http://www.bls.gov/lpc/#data).

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**The revised Productivity and Costs news release for second-quarter 2018 is scheduled to be released on Thursday, September 6, 2018 at 8:30 a.m. (EDT)**

**Table A1. Labor productivity growth and related measures - preliminary second-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	<b>Previous quarter</b>	<b>2.9</b>	<b>4.8</b>	<b>1.9</b>	<b>2.0</b>	<b>0.3</b>	<b>-0.9</b>
	A year ago	1.3	3.5	2.2	3.2	0.5	1.9
Business	<b>Previous quarter</b>	<b>3.6</b>	<b>5.0</b>	<b>1.3</b>	<b>2.4</b>	<b>0.8</b>	<b>-1.1</b>
	A year ago	1.4	3.4	2.0	3.4	0.7	1.9
Manufacturing	<b>Previous quarter</b>	<b>0.9</b>	<b>1.9</b>	<b>1.0</b>	<b>1.5</b>	<b>-0.1</b>	<b>0.6</b>
	A year ago	-0.2	1.8	2.1	2.5	-0.2	2.7
Durable manufacturing	<b>Previous quarter</b>	<b>0.9</b>	<b>2.4</b>	<b>1.4</b>	<b>1.3</b>	<b>-0.3</b>	<b>0.4</b>
	A year ago	0.2	2.3	2.1	2.9	0.2	2.7
Nondurable manufacturing	<b>Previous quarter</b>	<b>1.1</b>	<b>1.5</b>	<b>0.4</b>	<b>1.9</b>	<b>0.2</b>	<b>0.8</b>
	A year ago	-0.6	1.3	2.0	1.7	-0.9	2.4

**Table A2. Labor productivity growth and related measures - revised and previously published first-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	<b>Revised</b>	<b>3.0</b>	<b>5.3</b>	<b>2.2</b>	<b>4.4</b>	<b>0.9</b>	<b>1.4</b>
	Previously published	1.9	4.2	2.2	3.8	0.3	1.8

**Table B1. Labor productivity growth and related measures - revised and previously published first-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	<b>Revised</b>	<b>0.3</b>	<b>2.6</b>	<b>2.3</b>	<b>3.7</b>	<b>0.2</b>	<b>3.4</b>
	Previously published	0.4	2.7	2.3	3.3	-0.2	2.9
Business	<b>Revised</b>	<b>0.6</b>	<b>2.5</b>	<b>1.9</b>	<b>4.3</b>	<b>0.7</b>	<b>3.7</b>
	Previously published	0.7	2.6	1.8	3.9	0.4	3.1
Manufacturing	<b>Revised</b>	<b>-1.0</b>	<b>1.9</b>	<b>2.9</b>	<b>4.4</b>	<b>0.9</b>	<b>5.5</b>
	Previously published	-1.2	1.7	2.9	3.9	0.4	5.2
Durable manufacturing	<b>Revised</b>	<b>0.1</b>	<b>4.1</b>	<b>4.0</b>	<b>5.6</b>	<b>2.0</b>	<b>5.5</b>
	Previously published	-0.8	3.3	4.2	5.8	2.2	6.7
Nondurable manufacturing	<b>Revised</b>	<b>-1.4</b>	<b>-0.5</b>	<b>1.0</b>	<b>2.0</b>	<b>-1.5</b>	<b>3.4</b>
	Previously published	-0.9	0.0	0.9	0.0	-3.4	0.9

**Table C1. Labor productivity growth and related measures - revised and previous annual average changes: 2015-2017**

Sector	Year		Labor productivity	Output	Hours worked	Hourly compensation	Real hourly compensation	Unit labor costs
Nonfarm business	2017	<b>Revised</b>	<b>1.1</b>	<b>2.7</b>	<b>1.6</b>	<b>3.4</b>	<b>1.2</b>	<b>2.2</b>
		Previously published	1.3	2.9	1.6	1.7	-0.5	0.4
	2016	<b>Revised</b>	<b>0.1</b>	<b>1.6</b>	<b>1.5</b>	<b>1.1</b>	<b>-0.2</b>	<b>0.9</b>
		Previously published	0.0	1.5	1.5	1.1	-0.2	1.1
	2015	<b>Revised</b>	<b>1.3</b>	<b>3.5</b>	<b>2.1</b>	<b>3.1</b>	<b>2.9</b>	<b>1.8</b>
		Previously published	1.2	3.4	2.2	3.1	2.9	1.8
Manufacturing	2017	<b>Revised</b>	<b>0.7</b>	<b>1.8</b>	<b>1.0</b>	<b>3.3</b>	<b>1.1</b>	<b>2.6</b>
		Previously published	0.7	1.8	1.0	1.7	-0.4	1.0
	2016	<b>Revised</b>	<b>0.3</b>	<b>0.4</b>	<b>0.0</b>	<b>0.6</b>	<b>-0.7</b>	<b>0.3</b>
		Previously published	0.3	0.4	0.0	0.7	-0.5	0.4
	2015	<b>Revised</b>	<b>-1.5</b>	<b>-0.6</b>	<b>1.0</b>	<b>2.5</b>	<b>2.4</b>	<b>4.1</b>
		Previously published	-1.5	-0.6	1.0	2.5	2.3	4.1
Nonfinancial corporate	2017	<b>Revised</b>	<b>1.6</b>	<b>3.4</b>	<b>1.7</b>	<b>3.2</b>	<b>1.0</b>	<b>1.5</b>
		Previously published	1.0	2.8	1.7	1.6	-0.6	0.5
	2016	<b>Revised</b>	<b>0.0</b>	<b>1.5</b>	<b>1.5</b>	<b>1.1</b>	<b>-0.2</b>	<b>1.0</b>
		Previously published	-0.1	1.4	1.5	1.1	-0.2	1.2
	2015	<b>Revised</b>	<b>1.2</b>	<b>3.4</b>	<b>2.2</b>	<b>3.1</b>	<b>2.9</b>	<b>1.8</b>
		Previously published	1.4	3.6	2.2	3.0	2.8	1.6

## 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](http://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](mailto: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](http://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 II	3.6	5.0	1.3	2.4	0.8	-1.1	9.7	3.4
I	0.6 r	2.5 r	1.9 r	4.3 r	0.7 r	3.7 r	-0.4 r	1.9 r
2017 ANNUAL	1.1 r	2.6 r	1.5	3.4 r	1.2 r	2.3 r	1.0 r	1.7 r
2017 IV	-1.1 r	2.9 r	4.1	1.2 r	-2.1 r	2.4 r	3.6 r	2.9 r
III	2.8 r	3.5 r	0.7	5.6 r	3.4 r	2.8 r	0.9 r	2.0 r
II	1.6	3.7	2.1	1.3 r	1.2 r	-0.3 r	2.3 r	0.8 r
I	-0.2 r	1.9 r	2.0	4.0 r	1.0 r	4.2 r	-1.3 r	1.8 r
2016 ANNUAL	0.2 r	1.7 r	1.5	1.0 r	-0.2	0.9 r	0.9 r	0.9 r
2016 IV	1.9	2.2	0.3	5.6 r	2.7 r	3.6 r	-0.6 r	1.7 r
III	1.6 r	2.2 r	0.6 r	2.5 r	0.6 r	0.9 r	1.7 r	1.3 r
II	0.7 r	2.6	1.9 r	0.3 r	-2.3 r	-0.4 r	7.7 r	3.1 r
I	0.2 r	1.6 r	1.4	0.0 r	0.1 r	-0.2 r	-1.5 r	-0.8 r
Percent change from corresponding quarter of previous year								
2018 II	1.4	3.4	2.0	3.4	0.7	1.9	3.4	2.5
I	0.9 r	3.1 r	2.2	3.1 r	0.8 r	2.1 r	1.6 r	1.9 r
2017 ANNUAL	1.1 r	2.6 r	1.5	3.4 r	1.2 r	2.3 r	1.0 r	1.7 r
2017 IV	0.8 r	3.0 r	2.2	3.0 r	0.9 r	2.3 r	1.4 r	1.9 r
III	1.5	2.8	1.3	4.1 r	2.1 r	2.6 r	0.3 r	1.6
II	1.2 r	2.5 r	1.3	3.3 r	1.4 r	2.1 r	0.5 r	1.4
I	1.0 r	2.2 r	1.2	3.1 r	0.5 r	2.1 r	1.8 r	2.0 r
2016 ANNUAL	0.2 r	1.7 r	1.5	1.0 r	-0.2	0.9 r	0.9 r	0.9 r
2016 IV	1.1	2.1	1.0	2.1 r	0.3 r	1.0 r	1.8 r	1.3 r
III	-0.1	1.6	1.8	0.5 r	-0.7 r	0.6 r	1.0 r	0.8 r
II	-0.4	1.3 r	1.6	0.4 r	-0.7 r	0.7 r	0.9 r	0.8 r
I	0.1 r	1.6 r	1.6	1.2 r	0.1 r	1.2 r	-0.2 r	0.6 r
Indexes 2012=100								
2018 II	105.4	117.5	111.4	114.9	105.1	109.0	108.5	108.8
I	104.5 r	116.0 r	111.1 r	114.2 r	104.9 r	109.3 r	106.0 r	107.9 r
2017 ANNUAL	104.1 r	114.0 r	109.5 r	111.9 r	104.6 r	107.5 r	105.1 r	106.5 r
2017 IV	104.3 r	115.3 r	110.6 r	113.0 r	104.7 r	108.3 r	106.1 r	107.4 r
III	104.6 r	114.5 r	109.5 r	112.7 r	105.3 r	107.7 r	105.1 r	106.6 r
II	103.9 r	113.5 r	109.3 r	111.2 r	104.4 r	107.0 r	104.9 r	106.1 r
I	103.5 r	112.5 r	108.7 r	110.8 r	104.1 r	107.0 r	104.3 r	105.8 r
2016 ANNUAL	102.9 r	111.1 r	107.9 r	108.2 r	103.4 r	105.2 r	104.1 r	104.7 r
2016 IV	103.5 r	112.0 r	108.2 r	109.7 r	103.8 r	105.9 r	104.6 r	105.4 r
III	103.1 r	111.4 r	108.1 r	108.2 r	103.1 r	105.0 r	104.8 r	104.9 r
II	102.7 r	110.8 r	107.9 r	107.6 r	103.0 r	104.8 r	104.4 r	104.6 r
I	102.5 r	110.1 r	107.4 r	107.5 r	103.6 r	104.9 r	102.4 r	103.8 r

See footnotes following Table 6.  
r=revised

August 15, 2018  
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 II	2.9	4.8	1.9	2.0	0.3	-0.9	9.6	3.5
I	0.3 r	2.6 r	2.3	3.7 r	0.2 r	3.4 r	-0.3 r	1.8 r
2017 ANNUAL	1.1 r	2.7 r	1.6	3.4 r	1.2 r	2.2 r	0.9 r	1.6 r
2017 IV	-0.3 r	3.0 r	3.3	1.9 r	-1.3 r	2.3 r	3.7 r	2.9 r
III	2.3 r	3.6 r	1.3	5.1 r	2.9 r	2.8 r	1.1 r	2.1 r
II	1.6 r	3.8 r	2.2	1.3 r	1.2 r	-0.3 r	2.3 r	0.8 r
I	0.4 r	1.9 r	1.5	4.7 r	1.6 r	4.2 r	-2.4 r	1.3 r
2016 ANNUAL	0.1 r	1.6 r	1.5	1.1	-0.2	0.9 r	1.2 r	1.1 r
2016 IV	1.3 r	2.3 r	1.0	4.7 r	1.9 r	3.4 r	-0.1 r	1.8 r
III	1.3 r	2.2 r	0.9	2.2 r	0.3 r	0.9 r	2.2 r	1.5 r
II	0.9 r	2.5	1.6 r	0.7 r	-2.0 r	-0.2 r	7.8 r	3.2 r
I	0.3 r	1.6 r	1.3	0.1 r	0.1 r	-0.2 r	-0.5 r	-0.3 r
Percent change from corresponding quarter of previous year								
2018 II	1.3	3.5	2.2	3.2	0.5	1.9	3.5	2.6
I	1.0 r	3.2 r	2.3	3.0 r	0.7 r	2.0 r	1.7 r	1.9 r
2017 ANNUAL	1.1 r	2.7 r	1.6	3.4 r	1.2 r	2.2 r	0.9 r	1.6 r
2017 IV	1.0 r	3.1 r	2.1	3.2 r	1.1 r	2.2 r	1.1 r	1.8 r
III	1.4	2.9 r	1.5	3.9 r	1.9 r	2.5 r	0.2 r	1.5
II	1.2 r	2.6 r	1.4	3.2 r	1.3 r	2.0 r	0.5 r	1.4 r
I	1.0 r	2.2 r	1.2	3.1 r	0.5 r	2.0 r	1.8 r	1.9 r
2016 ANNUAL	0.1 r	1.6 r	1.5	1.1	-0.2	0.9 r	1.2 r	1.1 r
2016 IV	1.0 r	2.1	1.2	1.9 r	0.1 r	0.9 r	2.3 r	1.5 r
III	-0.1	1.6	1.7	0.6 r	-0.6 r	0.7 r	1.5 r	1.0 r
II	-0.3 r	1.2 r	1.5	0.5 r	-0.6 r	0.8 r	1.2 r	1.0 r
I	0.0 r	1.6 r	1.6	1.2 r	0.1 r	1.2 r	0.0 r	0.7 r
Indexes 2012=100								
2018 II	105.1	117.3	111.6	114.9	105.1	109.3	109.3	109.3
I	104.3 r	115.9 r	111.1 r	114.3 r	105.0 r	109.6 r	106.8 r	108.4 r
2017 ANNUAL	103.9 r	113.8 r	109.5 r	112.1 r	104.8 r	107.9 r	105.9 r	107.0 r
2017 IV	104.3 r	115.2 r	110.5 r	113.3 r	105.0 r	108.7 r	106.9 r	107.9 r
III	104.3 r	114.3 r	109.6 r	112.8 r	105.3 r	108.1 r	105.9 r	107.1 r
II	103.8 r	113.3 r	109.2 r	111.4 r	104.6 r	107.3 r	105.6 r	106.6 r
I	103.4 r	112.3 r	108.6 r	111.0 r	104.3 r	107.4 r	105.0 r	106.4 r
2016 ANNUAL	102.8 r	110.8 r	107.8 r	108.5 r	103.6 r	105.5 r	104.9 r	105.3 r
2016 IV	103.2 r	111.7 r	108.2 r	109.7 r	103.9 r	106.3 r	105.7 r	106.0 r
III	102.9 r	111.1 r	108.0 r	108.5 r	103.4 r	105.4 r	105.7 r	105.6 r
II	102.6 r	110.5 r	107.7 r	107.9 r	103.3 r	105.2 r	105.1 r	105.2 r
I	102.3 r	109.8 r	107.3 r	107.7 r	103.8 r	105.2 r	103.2 r	104.4 r

See footnotes following Table 6.  
r=revised

August 15, 2018  
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 II	0.9	1.9	1.0	1.5	-0.1	0.6
I	-1.0 r	1.9 r	2.9	4.4 r	0.9 r	5.5 r
2017 ANNUAL	0.7	1.8	1.0	3.3 r	1.1 r	2.6 r
2017 IV	4.4 r	5.5 r	1.1	1.6 r	-1.7 r	-2.7 r
III	-5.0	-1.9	3.3	2.4 r	0.3 r	7.8 r
II	3.5	2.9	-0.6	3.0 r	2.9 r	-0.5 r
I	-0.3 r	2.2	2.5	3.9 r	0.9 r	4.2 r
2016 ANNUAL	0.3	0.4	0.0	0.6 r	-0.7 r	0.3 r
2016 IV	2.6	2.4	-0.3	5.8 r	3.0 r	3.0 r
III	0.6	1.7	1.1	1.8 r	-0.1 r	1.2 r
II	-0.8 r	-1.1	-0.2	1.5 r	-1.2 r	2.3 r
I	2.5	1.8	-0.6	-2.7 r	-2.6 r	-5.0 r
-----						
Percent change from corresponding quarter of previous year						
2018 II	-0.2	1.8	2.1	2.5	-0.2	2.7
I	0.4 r	2.1 r	1.6 r	2.8 r	0.6	2.4 r
2017 ANNUAL	0.7	1.8	1.0	3.3 r	1.1 r	2.6 r
2017 IV	0.6	2.1	1.5	2.7 r	0.6 r	2.1 r
III	0.2	1.4	1.2	3.8 r	1.7 r	3.6 r
II	1.6	2.3	0.7	3.6 r	1.7 r	2.0 r
I	0.5	1.3	0.8	3.2 r	0.6 r	2.7 r
2016 ANNUAL	0.3	0.4	0.0	0.6 r	-0.7 r	0.3 r
2016 IV	1.2	1.2	0.0	1.6 r	-0.3 r	0.3 r
III	-0.2	0.3	0.4	-0.2 r	-1.3 r	0.0 r
II	0.2	0.0	-0.2	0.4 r	-0.7 r	0.2 r
I	0.1	-0.1	-0.1	0.6 r	-0.5 r	0.6 r
-----						
Indexes 2012=100						
2018 II	100.8	106.9	106.1	112.6	103.0	111.7
I	100.6 r	106.4 r	105.8 r	112.2 r	103.0 r	111.5 r
2017 ANNUAL	100.4 r	104.9 r	104.5 r	110.1 r	102.9 r	109.6 r
2017 IV	100.8 r	105.9 r	105.1 r	111.0 r	102.8 r	110.1 r
III	99.7 r	104.5 r	104.8 r	110.5 r	103.3 r	110.8 r
II	101.0 r	105.0 r	104.0 r	109.9 r	103.2 r	108.8 r
I	100.2 r	104.3 r	104.1 r	109.1 r	102.5 r	108.9 r
2016 ANNUAL	99.7 r	103.1 r	103.4 r	106.6 r	101.8 r	106.9 r
2016 IV	100.2 r	103.7 r	103.5 r	108.0 r	102.2 r	107.8 r
III	99.6 r	103.1 r	103.5 r	106.5 r	101.5 r	107.0 r
II	99.4 r	102.7 r	103.3 r	106.1 r	101.5 r	106.7 r
I	99.6 r	103.0 r	103.3 r	105.7 r	101.8 r	106.0 r
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See footnotes following Table 6.  
r=revised

August 15, 2018  
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 II	0.9	2.4	1.4	1.3	-0.3	0.4
I	0.1 r	4.1 r	4.0 r	5.6 r	2.0 r	5.5 r
2017 ANNUAL	1.1	1.7	0.6	4.1 r	1.9 r	2.9 r
2017 IV	4.8 r	5.2 r	0.4	2.2 r	-1.1 r	-2.4 r
III	-4.8	-2.3	2.6	2.4 r	0.3 r	7.6 r
II	4.6 r	2.1	-2.3 r	6.1 r	6.0 r	1.5 r
I	-0.8 r	2.8	3.6 r	3.4 r	0.4 r	4.2 r
2016 ANNUAL	-0.8	-1.2	-0.4	0.9 r	-0.3 r	1.8 r
2016 IV	3.1	2.5	-0.6	6.8 r	4.0 r	3.6 r
III	1.9	2.2	0.3	2.2 r	0.4 r	0.3 r
II	-0.4	-1.9	-1.5	1.9 r	-0.8 r	2.3 r
I	-1.2	-1.1	0.1	-2.1 r	-2.0 r	-0.9 r
-----						
Percent change from corresponding quarter of previous year						
2018 II	0.2	2.3	2.1	2.9	0.2	2.7
I	1.1 r	2.2 r	1.1 r	4.1 r	1.8 r	2.9 r
2017 ANNUAL	1.1	1.7	0.6	4.1 r	1.9 r	2.9 r
2017 IV	0.9 r	1.9	1.0	3.5 r	1.4 r	2.6 r
III	0.5	1.2	0.8	4.7 r	2.6 r	4.2 r
II	2.2	2.4	0.2	4.6 r	2.6 r	2.4 r
I	0.9	1.4	0.4 r	3.6 r	0.9 r	2.6 r
2016 ANNUAL	-0.8	-1.2	-0.4	0.9 r	-0.3 r	1.8 r
2016 IV	0.8	0.4	-0.4	2.2 r	0.3 r	1.3 r
III	-1.3	-1.4	0.0	0.2 r	-0.9 r	1.6 r
II	-1.4	-2.0	-0.7	0.7 r	-0.4 r	2.1 r
I	-1.5	-1.9	-0.4	0.7	-0.4	2.2
-----						
Indexes 2012=100						
2018 II	101.4	107.3	105.8	113.7	104.0	112.1
I	101.2 r	106.7 r	105.4 r	113.3 r	104.1 r	112.0 r
2017 ANNUAL	100.6 r	104.8 r	104.2 r	110.6 r	103.4 r	110.0 r
2017 IV	101.1 r	105.6 r	104.4 r	111.8 r	103.6 r	110.5 r
III	100.0 r	104.3 r	104.3 r	111.2 r	103.9 r	111.2 r
II	101.2 r	104.9 r	103.6 r	110.5 r	103.8 r	109.2 r
I	100.1 r	104.3 r	104.3 r	108.9 r	102.3 r	108.8 r
2016 ANNUAL	99.5 r	103.0 r	103.5 r	106.3 r	101.5 r	106.8 r
2016 IV	100.3 r	103.6 r	103.3 r	108.0 r	102.2 r	107.7 r
III	99.5 r	103.0 r	103.5 r	106.2 r	101.2 r	106.8 r
II	99.0 r	102.4 r	103.4 r	105.7 r	101.1 r	106.7 r
I	99.1 r	102.9 r	103.8 r	105.2 r	101.3 r	106.1 r
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See footnotes following Table 6.  
r=revised

August 15, 2018  
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 II	1.1	1.5	0.4	1.9	0.2	0.8
I	-1.4 r	-0.5 r	1.0 r	2.0 r	-1.5 r	3.4 r
2017 ANNUAL	-0.2	1.6	1.8	2.0 r	-0.2 r	2.2 r
2017 IV	3.5	5.8	2.2	0.5 r	-2.8 r	-2.9 r
III	-5.5	-1.4	4.3	2.6 r	0.5 r	8.6 r
II	1.2 r	3.7	2.4 r	-2.5 r	-2.6 r	-3.7 r
I	0.8 r	1.5	0.7 r	4.6 r	1.6 r	3.8 r
2016 ANNUAL	0.7	1.4	0.7	0.0 r	-1.2	-0.6
2016 IV	1.7	1.9	0.2	3.9 r	1.2 r	2.2 r
III	-1.9	0.5	2.4	1.1 r	-0.7 r	3.1 r
II	-3.2	-1.2	2.0	0.9 r	-1.7 r	4.2 r
I	5.8 r	3.7	-1.9	-3.9 r	-3.9 r	-9.1 r
-----						
Percent change from corresponding quarter of previous year						
2018 II	-0.6	1.3	2.0	1.7	-0.9	2.4
I	-0.6 r	1.9 r	2.5	0.6 r	-1.6 r	1.2 r
2017 ANNUAL	-0.2	1.6	1.8	2.0 r	-0.2 r	2.2 r
2017 IV	-0.1	2.4	2.4	1.3 r	-0.8 r	1.3 r
III	-0.5	1.4	1.9	2.1 r	0.2 r	2.6 r
II	0.4	1.9	1.4	1.8 r	-0.1 r	1.3 r
I	-0.7 r	0.6	1.3	2.6 r	0.1 r	3.3 r
2016 ANNUAL	0.7	1.4	0.7	0.0 r	-1.2	-0.6
2016 IV	0.5	1.2	0.7	0.5 r	-1.3 r	0.0 r
III	0.0	1.2	1.2	-0.9 r	-2.0 r	-0.8 r
II	0.9	1.5	0.7	0.0 r	-1.1 r	-0.8 r
I	1.4	1.8	0.4	0.5 r	-0.6 r	-0.9 r
-----						
Indexes 2012=100						
2018 II	100.6	107.2	106.6	110.6	101.2	109.9
I	100.4 r	106.8 r	106.5 r	110.0 r	101.1 r	109.7 r
2017 ANNUAL	100.7 r	105.8 r	105.0 r	109.2 r	102.1 r	108.5 r
2017 IV	100.7 r	107.0 r	106.2 r	109.5 r	101.5 r	108.7 r
III	99.8 r	105.5 r	105.6 r	109.4 r	102.2 r	109.6 r
II	101.3 r	105.8 r	104.5 r	108.7 r	102.1 r	107.3 r
I	101.0 r	104.9 r	103.9 r	109.4 r	102.7 r	108.3 r
2016 ANNUAL	100.9 r	104.1 r	103.2 r	107.1 r	102.3 r	106.2 r
2016 IV	100.8 r	104.5 r	103.7 r	108.1 r	102.3 r	107.3 r
III	100.3 r	104.0 r	103.6 r	107.1 r	102.0 r	106.7 r
II	100.8 r	103.9 r	103.0 r	106.8 r	102.2 r	105.9 r
I	101.6 r	104.2 r	102.5 r	106.5 r	102.7 r	104.8 r
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See footnotes following Table 6.  
r=revised

August 15, 2018  
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 I	3.0 r	5.3 r	2.2	4.4 r	0.9 r	1.4 r	-1.0 r	0.6 r	5.5 r	1.2 r
2017 ANNUAL	1.6 r	3.4 r	1.7	3.2 r	1.0 r	1.5 r	1.0 r	1.3 r	-2.1 r	0.9 r
2017 IV	1.4 r	4.2 r	2.7	0.3 r	-2.9 r	-1.1 r	0.5 r	-0.6 r	7.8 r	0.4 r
III	1.1 r	2.5 r	1.5	2.8 r	0.6 r	1.7 r	0.6 r	1.3 r	-17.1 r	-1.2 r
II	4.5 r	7.4 r	2.7	-0.1 r	-0.2 r	-4.4 r	-2.4 r	-3.7 r	7.5 r	-2.4 r
I	3.1 r	5.0 r	1.8	8.1 r	5.0 r	4.9 r	0.0 r	3.2 r	10.6 r	4.1 r
2016 ANNUAL	0.0 r	1.5 r	1.5	1.1	-0.2	1.0 r	0.1 r	0.7	-6.8 r	-0.3 r
2016 IV	-2.4 r	-1.7 r	0.7	3.4 r	0.6 r	6.0 r	7.6 r	6.5 r	-9.1 r	4.4 r
III	4.7 r	6.3 r	1.5	1.5 r	-0.4 r	-3.1 r	-3.6 r	-3.3 r	-5.4 r	-3.5 r
II	-4.8 r	-3.6 r	1.3	0.3 r	-2.4 r	5.4 r	6.5 r	5.8 r	-21.8 r	1.6 r
I	3.3 r	3.8 r	0.5 r	2.0 r	2.1 r	-1.2 r	-14.3 r	-5.7 r	31.2 r	-1.5 r
Percent change from corresponding quarter of previous year										
2018 I	2.5 r	4.8 r	2.3	1.8 r	-0.4 r	-0.6 r	-0.6 r	-0.6 r	0.3 r	-0.5 r
2017 ANNUAL	1.6 r	3.4 r	1.7	3.2 r	1.0 r	1.5 r	1.0 r	1.3 r	-2.1 r	0.9 r
2017 IV	2.5 r	4.8 r	2.2	2.7 r	0.6 r	0.2 r	-0.3 r	0.0 r	1.5 r	0.2 r
III	1.5 r	3.2 r	1.7	3.5 r	1.5 r	1.9 r	1.4 r	1.8 r	-2.7 r	1.2 r
II	2.4 r	4.2 r	1.7	3.2 r	1.3 r	0.7 r	0.3 r	0.6 r	0.5 r	0.6 r
I	0.1 r	1.4 r	1.3	3.3 r	0.7 r	3.2 r	2.5 r	3.0 r	-7.1 r	1.6 r
2016 ANNUAL	0.0 r	1.5 r	1.5	1.1	-0.2	1.0 r	0.1 r	0.7	-6.8 r	-0.3 r
2016 IV	0.1 r	1.1 r	1.0	1.8 r	0.0 r	1.7 r	-1.4 r	0.7 r	-3.1 r	0.2 r
III	0.3 r	1.9 r	1.6	0.7 r	-0.5 r	0.4 r	0.2 r	0.4	-11.6 r	-1.4 r
II	-0.7 r	1.0 r	1.7	0.6 r	-0.5 r	1.2 r	1.1 r	1.2 r	-7.7 r	0.0 r
I	0.3 r	2.0 r	1.7	1.2	0.1	0.9 r	0.4 r	0.7 r	-4.4 r	0.0 r
Indexes 2012=100										
2018 I	105.2 r	118.0 r	112.2 r	113.4 r	104.2 r	107.8 r	103.8 r	106.5 r	91.9 r	104.4 r
2017 ANNUAL	103.7 r	114.7 r	110.6 r	111.7 r	104.5 r	107.7 r	104.1 r	106.5 r	91.2 r	104.3 r
2017 IV	104.4 r	116.5 r	111.5 r	112.2 r	104.0 r	107.4 r	104.1 r	106.3 r	90.7 r	104.1 r
III	104.1 r	115.3 r	110.8 r	112.1 r	104.7 r	107.7 r	104.0 r	106.5 r	89.0 r	104.0 r
II	103.8 r	114.6 r	110.4 r	111.3 r	104.6 r	107.3 r	103.8 r	106.1 r	93.3 r	104.3 r
I	102.6 r	112.6 r	109.7 r	111.4 r	104.6 r	108.5 r	104.4 r	107.1 r	91.6 r	104.9 r
2016 ANNUAL	102.1 r	111.0 r	108.7 r	108.3 r	103.4 r	106.1 r	103.1 r	105.1 r	93.1 r	103.4 r
2016 IV	101.9 r	111.2 r	109.2 r	109.2 r	103.3 r	107.2 r	104.4 r	106.3 r	89.4 r	103.9 r
III	102.5 r	111.7 r	109.0 r	108.3 r	103.2 r	105.7 r	102.5 r	104.6 r	91.5 r	102.8 r
II	101.3 r	110.0 r	108.6 r	107.9 r	103.3 r	106.5 r	103.5 r	105.5 r	92.8 r	103.7 r
I	102.6 r	111.0 r	108.2 r	107.8 r	103.9 r	105.1 r	101.9 r	104.0 r	98.7 r	103.3 r

See footnotes following Table 6.  
r=revised

August 15, 2018  
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 first 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.