



Transmission of material in this release is embargoed until 8:30 a.m. (EST) Wednesday, March 8, 2017

USDL 17-0298

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

PRODUCTIVITY AND COSTS
 Fourth Quarter and Annual Averages 2016, Revised

Nonfarm business sector labor productivity increased at a 1.3-percent annual rate during the fourth quarter of 2016, the U.S. Bureau of Labor Statistics reported today, as output increased 2.4 percent and hours worked increased 1.0 percent. (All quarterly percent changes in this release are seasonally adjusted annual rates.) From the fourth quarter of 2015 to the fourth quarter of 2016, productivity increased 1.0 percent, reflecting increases in output and hours worked of 2.2 percent and 1.2 percent, respectively. (See chart 1 and table A1.) Annual average productivity increased 0.2 percent from 2015 to 2016. (See table C1.)

Labor productivity, or output per hour, is calculated by dividing an index of real output by an index of hours worked of all persons, including employees, proprietors, and unpaid family workers. Measures released today were based on more recent source data than were available for the preliminary report.

Chart 1. Labor productivity, nonfarm business, all persons, 2012Q1 – 2016Q4

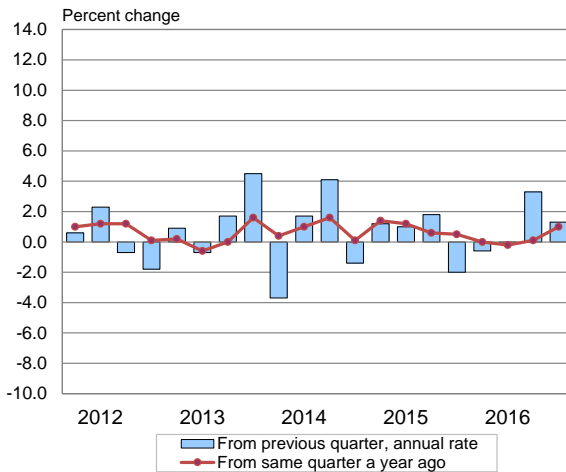
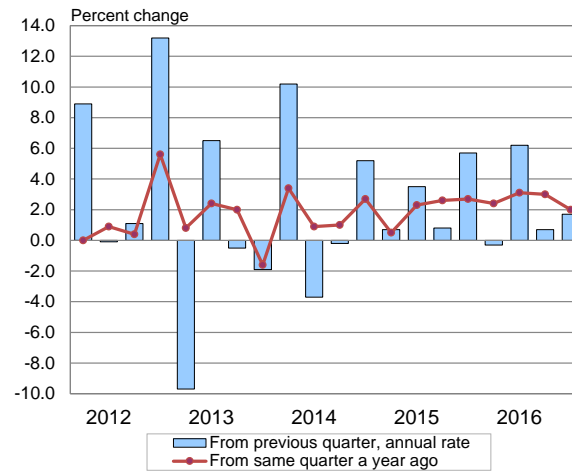


Chart 2. Unit labor costs, nonfarm business, all persons, 2012Q1 – 2016Q4



Unit labor costs in the nonfarm business sector increased 1.7 percent in the fourth quarter of 2016, reflecting a 3.0-percent increase in hourly compensation and a 1.3-percent increase in productivity. Unit labor costs increased 2.0 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 annual benchmark revision of BLS Current Employment Statistics program data on nonfarm employment and hours, and the revised seasonal adjustment of those data. The data also reflect an improvement in the methodology for estimating hours worked. 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 2016, as output increased 1.6 percent and hours worked decreased 0.4 percent. Output per hour increased 1.5 percent in the durable goods manufacturing sector and 2.7 percent in the nondurable goods sector. Over the last four quarters, manufacturing sector productivity increased 0.5 percent, as output increased 0.5 percent and hours worked were unchanged. (See tables A1, 3, 4, and 5.) **Unit labor costs** in manufacturing increased 2.4 percent in the fourth quarter of 2016 and rose 2.1 percent from the same quarter a year ago. Hourly compensation increased 4.4 percent in the fourth quarter of 2016.

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

Quarterly and annual measures of hours and related series—including productivity—were revised historically for all major sectors. The revisions incorporate revised Current Employment Statistics (CES) program data published February 3, 2017. From 2012 to 2016, the data were subject to revision as a result of annual benchmarking of CES data and revised seasonal adjustment of those data. Prior to 2012, there were small revisions due to CES coverage changes affecting selected industries. Revisions to hours data also reflect an improvement to methodology for estimating hours worked, including the incorporation of detailed industry ratios of hours worked to hours paid, provided by the National Compensation Survey; the historical revisions due to this methodological change affected quarterly data back to 1989 and annual data back to 1990. (For more information see www.bls.gov/lpc/hwhpnew.htm.) Index measures related to hours show full historical revisions because the 2009 base year values were revised. In addition to revisions to hours data, third quarter, fourth quarter, and annual average data for 2016 were revised to incorporate regular updates of source data on output and compensation.

Revised and previous measures for the fourth quarter of 2016 are shown in table B1 for the business, nonfarm business, and manufacturing sectors. In the **fourth quarter of 2016**, nonfarm business productivity was not revised, increasing at the same 1.3-percent rate reported February 2; both output and hours worked were revised up slightly to rates of 2.4 percent and 1.0 percent, respectively. Unit labor costs were not revised, increasing at the same 1.7-percent rate as previously reported.

Manufacturing productivity increased 2.0 percent rather than 0.7 percent in the fourth quarter of 2016, reflecting both an upward revision to output and a downward revision to hours. Because the upward revision to productivity was larger than an upward revision to hourly compensation, manufacturing unit labor costs increased 2.4 percent, rather than the 3.3-percent rate reported in the preliminary release. (See table B1.)

In the **third quarter of 2016**, nonfarm business productivity growth was revised down slightly to an increase of 3.3 percent, due solely to a small upward revision to hours. Unit labor costs increased 0.7 percent, more than previously reported, reflecting a downward revision to productivity and a 0.4-percentage point upward revision to hourly compensation. In the manufacturing sector, productivity was unchanged from the second quarter to the third quarter of 2016, as previously reported. Unit labor costs were revised up and increased 4.1 percent, rather than 3.3 percent as previously reported, reflecting an upward revision to hourly compensation. (See table B2.) **Nonfinancial corporate sector** productivity increased 6.3 percent in the third quarter of 2016, slightly lower than previously reported, with the

revision due solely to an upward revision to hours. (See table A2.)

Table C1 presents **annual average changes** for the most recent 5 years for the nonfarm business sector and the total manufacturing sector. Annual average changes in productivity, output, and hours for the **nonfarm business sector** in 2016 were the same as the preliminary estimates: productivity grew 0.2 percent, output increased 1.7 percent, and hours worked increased 1.5 percent. Productivity increased at an average annual rate of 0.6 percent over the last 5 years (2011 to 2016), well below the long-term rate of 2.1 percent from 1947 to 2016.

Unit labor costs in the nonfarm business sector rose 2.6 percent in 2016, reflecting increases of 2.9 percent in hourly compensation and 0.2 percent in productivity. Real hourly compensation, which takes into account changes in consumer prices, increased 1.6 percent in 2016. In each of the last 3 years (2014, 2015, and 2016), real hourly compensation growth has outpaced productivity growth; prior to 2014, the last year in which real hourly compensation had grown faster than productivity was 2000.

In the **manufacturing sector**, productivity increased 0.3 percent in 2016, similar to the 0.2-percent rate in 2015; in both years productivity was revised down due to an upward revision to hours worked. Manufacturing productivity increased at an average annual rate of 0.5 percent over the last 5 years (2011 to 2016), which is well below the growth rate of 3.2 percent from 1987 to 2016. Unit labor costs increased 2.7 percent in 2016, rather than 2.6 percent as reported February 2. (See table C1.)

Quarterly and annual data for all sectors from 2014 to 2016 appear in tables 1-6. Full historical measures can be found on the Productivity and Costs home page, www.bls.gov/lpc/#data.

The preliminary Productivity and Costs news release for first-quarter 2017 is scheduled to be released on Thursday, May 4, 2017 at 8:30 a.m. (EDT).

Table A1. Labor productivity growth and related measures – revised fourth-quarter 2016
(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	1.3	2.4	1.0	3.0	-0.4	1.7
	A year ago	1.0	2.2	1.2	3.0	1.2	2.0
Business	Previous quarter	2.0	2.3	0.3	3.9	0.4	1.9
	A year ago	1.2	2.3	1.1	3.2	1.3	2.0
Manufacturing	Previous quarter	2.0	1.6	-0.4	4.4	0.9	2.4
	A year ago	0.5	0.5	0.0	2.6	0.8	2.1
Durable Manufacturing	Previous quarter	1.5	1.4	-0.1	4.2	0.7	2.6
	A year ago	1.3	1.0	-0.2	2.7	0.9	1.4
Nondurable Manufacturing	Previous quarter	2.7	1.7	-1.0	4.8	1.3	2.0
	A year ago	-0.6	-0.2	0.3	2.4	0.5	2.9

Table A2. Labor productivity growth and related measures – revised and previously published third-quarter 2016
(percent change from previous quarter at annual rate)

Sector		Labor productivity	Output	Hours worked	Hourly compensation	Real hourly compensation	Unit labor costs
Nonfinancial Corporations	Revised	6.3	7.8	1.5	3.9	2.2	-2.2
	Previously published	6.5	7.8	1.2	4.1	2.4	-2.2

Table B1. Labor productivity growth and related measures – revised and previously published fourth-quarter 2016
(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	1.3	2.4	1.0	3.0	-0.4	1.7
	Previously published	1.3	2.2	0.9	3.0	-0.4	1.7
Business	Revised	2.0	2.3	0.3	3.9	0.4	1.9
	Previously published	2.0	2.2	0.2	3.9	0.4	1.8
Manufacturing	Revised	2.0	1.6	-0.4	4.4	0.9	2.4
	Previously published	0.7	0.8	0.0	4.1	0.6	3.3
Durable Manufacturing	Revised	1.5	1.4	-0.1	4.2	0.7	2.6
	Previously published	0.1	0.7	0.7	3.9	0.4	3.8
Nondurable Manufacturing	Revised	2.7	1.7	-1.0	4.8	1.3	2.0
	Previously published	1.8	0.8	-1.0	4.3	0.8	2.4

Table B2. Labor productivity growth and related measures – revised and previously published third-quarter 2016
(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	3.3	4.2	0.8	4.1	2.4	0.7
	Previously published	3.5	4.2	0.6	3.7	2.1	0.2
Business	Revised	3.7	4.3	0.6	4.3	2.7	0.6
	Previously published	3.9	4.3	0.4	4.0	2.3	0.0
Manufacturing	Revised	0.0	0.7	0.7	4.1	2.4	4.1
	Previously published	0.0	0.6	0.5	3.4	1.7	3.3
Durable Manufacturing	Revised	2.1	2.3	0.2	4.3	2.6	2.2
	Previously published	2.1	2.2	0.1	3.8	2.1	1.7
Nondurable Manufacturing	Revised	-2.7	-1.2	1.5	3.8	2.1	6.6
	Previously published	-2.7	-1.5	1.3	2.6	1.0	5.5

Table C1. Labor productivity growth and related measures – annual average changes: 2012-2016

Sector	Year	Labor productivity	Output	Hours worked	Hourly compensation	Real hourly compensation	Unit labor costs
Nonfarm Business	2016	0.2	1.7	1.5	2.9	1.6	2.6
	2015	0.9	3.1	2.1	2.9	2.8	2.0
	2014	0.8	3.0	2.2	2.8	1.1	2.0
	2013	0.3	2.0	1.7	1.2	-0.3	0.9
	2012	0.9	3.1	2.2	2.6	0.5	1.7
Manufacturing	2016	0.3	0.3	0.0	3.0	1.7	2.7
	2015	0.2	1.2	1.0	2.4	2.3	2.2
	2014	0.1	1.7	1.5	2.8	1.1	2.7
	2013	0.1	1.0	0.8	0.2	-1.3	0.0
	2012	1.7	4.1	2.3	1.7	-0.4	0.0

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 75 percent of the value of GDP in 2016. Nonfarm business, which excludes farming, also accounted for about 75 percent of GDP in 2016.

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 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 50 percent of the value of GDP in 2015.

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 2009=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 dprweb@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: 202-691-5606; 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)								
2016 ANNUAL	0.3	1.8	1.5	2.8 r	1.6 r	2.5	-1.1 r	1.0
2016 IV	2.0	2.3 r	0.3 r	3.9	0.4	1.9 r	1.5 r	1.7 r
III	3.7 r	4.3	0.6 r	4.3 r	2.7 r	0.6 r	1.2 r	0.8
II	-0.3 r	1.6	2.0	5.7 r	3.1 r	6.0	-3.0	2.1
I	-0.7	0.8	1.5	-1.1	-0.8 r	-0.4	1.4	0.4
2015 ANNUAL	0.8	3.1	2.3	2.8	2.7	2.0	-1.0	0.7
2015 IV	-2.1 r	0.8	3.0 r	3.3 r	2.5 r	5.6 r	-6.8 r	0.1
III	2.1 r	2.1	-0.1 r	2.8 r	1.4 r	0.6	1.4 r	0.9
II	1.3 r	3.0	1.7 r	5.0 r	2.4 r	3.6	0.0	2.1
I	0.8 r	2.3	1.5 r	1.7 r	4.7 r	0.9	-2.1	-0.4
2014 ANNUAL	0.6	3.0	2.3	2.6	1.0	2.0	1.0	1.6
2014 IV	-1.6 r	2.8	4.5 r	3.4 r	3.7 r	5.1	-6.5	-0.1
III	3.4	6.4	2.9	3.1 r	2.3	-0.2	3.3	1.3
II	1.5 r	5.0	3.5 r	-2.2 r	-4.1 r	-3.6	10.5 r	2.3
I	-3.6	-2.0	1.6	6.4 r	4.1	10.4	-8.9	1.5

Percent change from corresponding quarter of previous year								
2016 ANNUAL	0.3	1.8	1.5	2.8 r	1.6 r	2.5	-1.1 r	1.0
2016 IV	1.2	2.3 r	1.1 r	3.2 r	1.3 r	2.0 r	0.2 r	1.3
III	0.1	1.9	1.8	3.0 r	1.9 r	2.9 r	-1.9 r	0.9
II	-0.3	1.3	1.6 r	2.6	1.5	2.9	-1.8	0.9
I	0.1	1.7	1.5 r	2.5	1.4	2.3	-1.1	0.9
2015 ANNUAL	0.8	3.1	2.3	2.8	2.7	2.0	-1.0	0.7
2015 IV	0.5	2.1	1.5 r	3.2 r	2.7	2.6	-1.9	0.7
III	0.6 r	2.6	1.9	3.2	3.1	2.5	-1.8	0.6
II	0.9	3.6	2.7	3.3	3.3	2.3	-1.4	0.7
I	1.0	4.1	3.1	1.5	1.6	0.5	1.1	0.8
2014 ANNUAL	0.6	3.0	2.3	2.6	1.0	2.0	1.0	1.6
2014 IV	-0.1	3.0	3.1	2.7	1.4 r	2.8	-0.7	1.3
III	1.3	3.6	2.3	2.4	0.6	1.0	2.6	1.7
II	0.9	3.1	2.2	1.7 r	-0.3	0.9	3.1	1.8
I	0.5 r	2.1	1.6 r	3.8 r	2.3 r	3.3	-1.0	1.4

Indexes 2009=100								
2016 ANNUAL	106.5 r	119.7 r	112.4 r	117.5 r	105.0 r	110.3 r	110.5 r	110.4 r
2016 IV	107.4 r	121.0 r	112.7 r	119.3 r	105.6 r	111.1 r	110.7 r	111.0 r
III	106.9 r	120.3	112.6 r	118.2 r	105.5 r	110.6 r	110.3 r	110.5
II	105.9 r	119.1	112.4 r	116.9 r	104.8 r	110.4 r	110.0 r	110.3
I	106.0 r	118.6	111.9 r	115.3 r	104.0 r	108.8 r	110.8 r	109.7
2015 ANNUAL	106.2 r	117.6	110.7 r	114.2 r	103.4 r	107.5	111.7 r	109.3
2015 IV	106.2 r	118.3	111.5 r	115.7 r	104.2 r	108.9 r	110.5 r	109.6
III	106.7 r	118.1	110.6 r	114.7 r	103.6 r	107.5 r	112.4 r	109.5
II	106.2 r	117.5	110.7 r	113.9 r	103.2 r	107.3 r	112.0 r	109.3
I	105.8 r	116.6	110.2	112.6 r	102.6 r	106.4 r	112.0 r	108.7
2014 ANNUAL	105.4 r	114.1	108.3 r	111.1 r	100.7 r	105.4 r	112.9 r	108.5
2014 IV	105.6 r	115.9	109.8 r	112.1 r	101.4 r	106.1 r	112.6 r	108.9
III	106.0 r	115.1	108.6 r	111.2 r	100.5 r	104.8 r	114.5 r	108.9
II	105.2 r	113.4	107.8 r	110.3 r	99.9 r	104.9 r	113.6 r	108.5
I	104.8 r	112.0	106.9 r	110.9 r	101.0 r	105.8 r	110.8 r	107.9

See footnotes following Table 6.
r=revised

March 8, 2017
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)								
2016 ANNUAL	0.2	1.7	1.5	2.9 r	1.6 r	2.6	-0.8 r	1.2
2016 IV	1.3	2.4 r	1.0 r	3.0	-0.4	1.7	2.0 r	1.8 r
III	3.3 r	4.2	0.8 r	4.1 r	2.4 r	0.7 r	1.6 r	1.1
II	-0.1 r	1.6	1.7	6.1	3.5 r	6.2	-2.8	2.3
I	-0.6	0.7	1.4	-1.0 r	-0.7 r	-0.3	2.1	0.7
2015 ANNUAL	0.9	3.1	2.1	2.9	2.8	2.0	-0.4	1.0
2015 IV	-2.0 r	0.8	2.9 r	3.6 r	2.7 r	5.7	-6.2	0.5
III	1.8 r	1.8	0.0 r	2.7 r	1.3 r	0.8	1.1	1.0
II	1.0 r	3.1	2.0 r	4.6 r	2.1 r	3.5 r	-0.1	2.0
I	1.2 r	2.4	1.2 r	1.9 r	4.9 r	0.7	-0.2 r	0.4
2014 ANNUAL	0.8	3.0	2.2	2.8	1.1	2.0	1.3	1.7
2014 IV	-1.4 r	2.7	4.2 r	3.7 r	4.1 r	5.2	-6.3	0.1
III	4.1 r	6.5	2.3	3.9	3.0	-0.2	4.5	1.8
II	1.7 r	5.1	3.3 r	-2.1 r	-4.0 r	-3.7	9.8	1.9
I	-3.7	-1.8	2.0	6.1 r	3.8	10.2	-9.2	1.4

Percent change from corresponding quarter of previous year								
2016 ANNUAL	0.2	1.7	1.5	2.9 r	1.6 r	2.6	-0.8 r	1.2
2016 IV	1.0	2.2	1.2 r	3.0 r	1.2 r	2.0 r	0.7 r	1.5
III	0.1	1.8	1.7	3.2 r	2.0 r	3.0 r	-1.4 r	1.1
II	-0.2 r	1.2	1.5	2.8 r	1.7 r	3.1	-1.5	1.1
I	0.0	1.6	1.6	2.4	1.4 r	2.4	-0.8	1.0
2015 ANNUAL	0.9	3.1	2.1	2.9	2.8	2.0	-0.4	1.0
2015 IV	0.5 r	2.0	1.5 r	3.2 r	2.8 r	2.7	-1.4	0.9
III	0.6 r	2.5	1.9 r	3.2	3.1	2.6	-1.4	0.8
II	1.2	3.7	2.4 r	3.5	3.5	2.3	-0.6	1.0
I	1.4	4.2	2.8 r	1.8 r	1.9 r	0.5	1.8	1.0
2014 ANNUAL	0.8	3.0	2.2	2.8	1.1	2.0	1.3	1.7
2014 IV	0.1 r	3.1	3.0 r	2.9	1.7	2.7	-0.6	1.3
III	1.6	3.8	2.2	2.6	0.8	1.0	3.0	1.8
II	1.0	3.1	2.1	1.9	-0.2 r	0.9	3.4	2.0
I	0.4 r	2.0	1.6 r	3.9 r	2.4 r	3.4	-0.4	1.8

Indexes 2009=100								
2016 ANNUAL	106.7	119.8 r	112.3 r	117.7 r	105.2 r	110.4 r	110.6 r	110.5 r
2016 IV	107.4 r	121.1 r	112.8 r	119.4 r	105.7 r	111.2 r	111.1 r	111.1 r
III	107.0 r	120.4	112.5 r	118.5 r	105.8 r	110.8 r	110.5 r	110.6
II	106.1 r	119.1	112.2 r	117.3 r	105.2 r	110.6 r	110.1 r	110.3
I	106.2 r	118.7	111.8 r	115.6 r	104.3 r	108.9 r	110.9 r	109.7
2015 ANNUAL	106.4 r	117.8	110.7 r	114.5 r	103.6 r	107.5 r	111.5	109.2
2015 IV	106.3 r	118.5	111.4 r	115.9 r	104.4 r	109.0 r	110.3 r	109.5
III	106.9 r	118.2	110.6 r	114.9 r	103.7 r	107.5 r	112.1 r	109.4
II	106.4 r	117.7	110.6 r	114.1 r	103.4 r	107.3 r	111.8 r	109.1
I	106.1	116.8	110.1 r	112.9 r	102.9 r	106.3 r	111.8 r	108.6
2014 ANNUAL	105.5 r	114.3	108.4 r	111.2 r	100.8 r	105.4 r	111.9 r	108.1
2014 IV	105.8 r	116.1	109.7 r	112.3 r	101.6 r	106.1 r	111.8 r	108.5
III	106.2 r	115.3	108.6 r	111.3 r	100.6 r	104.8 r	113.7 r	108.5
II	105.1 r	113.5	108.0 r	110.2 r	99.9 r	104.9 r	112.4 r	108.0
I	104.7 r	112.1	107.1 r	110.8 r	100.9 r	105.9 r	109.8 r	107.5

See footnotes following Table 6.
r=revised

March 8, 2017
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)						
2016 ANNUAL	0.3 r	0.3 r	0.0 r	3.0 r	1.7 r	2.7 r
2016 IV	2.0 r	1.6 r	-0.4 r	4.4 r	0.9 r	2.4 r
III	0.0	0.7 r	0.7 r	4.1 r	2.4 r	4.1 r
II	-0.9 r	-1.0	-0.1 r	7.6 r	4.9 r	8.5
I	0.9 r	0.6	-0.3 r	-5.3 r	-4.9 r	-6.1
2015 ANNUAL	0.2 r	1.2	1.0 r	2.4 r	2.3 r	2.2
2015 IV	-1.4 r	-0.5	0.9 r	7.9 r	7.1 r	9.5
III	3.2 r	1.9	-1.2 r	3.9 r	2.5 r	0.7
II	0.6 r	0.6	0.0 r	4.5 r	1.9 r	3.8
I	-0.9 r	-1.4	-0.4 r	-1.1 r	1.8 r	-0.2
2014 ANNUAL	0.1	1.7	1.5 r	2.8	1.1	2.7
2014 IV	-1.2 r	2.7	4.0 r	3.6 r	3.9 r	4.9
III	1.4 r	2.8	1.4 r	3.4 r	2.6 r	2.0
II	1.4 r	5.3	3.9 r	-3.1 r	-5.0 r	-4.4
I	1.2 r	-0.3	-1.5 r	10.8 r	8.4 r	9.5

Percent change from corresponding quarter of previous year						
2016 ANNUAL	0.3 r	0.3 r	0.0 r	3.0 r	1.7 r	2.7 r
2016 IV	0.5 r	0.5 r	0.0 r	2.6	0.8 r	2.1 r
III	-0.3 r	-0.1	0.3 r	3.5 r	2.3 r	3.8 r
II	0.4 r	0.2	-0.2 r	3.4 r	2.3 r	3.0
I	0.8 r	0.6	-0.2 r	2.6 r	1.5 r	1.8
2015 ANNUAL	0.2 r	1.2	1.0 r	2.4 r	2.3 r	2.2
2015 IV	0.3 r	0.1	-0.2 r	3.7 r	3.3 r	3.4
III	0.4 r	1.0	0.6 r	2.7 r	2.5 r	2.3
II	0.0	1.2	1.2	2.6	2.6	2.6
I	0.1	2.4	2.2 r	0.7 r	0.8 r	0.5
2014 ANNUAL	0.1	1.7	1.5 r	2.8	1.1	2.7
2014 IV	0.7	2.6	1.9	3.6	2.3 r	2.9
III	0.6 r	2.4	1.8 r	2.4	0.7 r	1.8
II	-0.4	1.5	2.0	1.8	-0.3	2.2
I	-0.4 r	0.0	0.5	3.4 r	1.9	3.8

Indexes 2009=100						
2016 ANNUAL	119.9 r	129.3 r	107.8 r	113.9 r	101.9 r	95.0 r
2016 IV	120.3 r	129.7 r	107.8 r	116.0 r	102.6 r	96.4 r
III	119.7 r	129.2 r	107.9 r	114.7 r	102.4 r	95.8 r
II	119.7 r	128.9	107.7 r	113.6 r	101.8 r	94.9 r
I	120.0 r	129.3	107.7 r	111.5 r	100.6 r	93.0 r
2015 ANNUAL	119.5 r	128.8	107.8 r	110.6 r	100.1 r	92.5
2015 IV	119.7 r	129.1	107.8 r	113.0 r	101.8 r	94.4 r
III	120.1 r	129.2	107.6 r	110.9 r	100.1 r	92.3 r
II	119.2 r	128.6	107.9 r	109.8 r	99.5 r	92.1 r
I	119.0 r	128.4	107.9 r	108.6 r	99.0 r	91.3 r
2014 ANNUAL	119.3 r	127.4	106.8 r	108.0 r	97.9 r	90.5 r
2014 IV	119.3 r	128.9	108.0 r	109.0 r	98.6 r	91.3
III	119.7 r	128.0	107.0 r	108.0 r	97.7 r	90.2 r
II	119.3 r	127.1	106.6 r	107.1 r	97.0 r	89.8
I	118.9 r	125.5	105.6 r	107.9 r	98.3 r	90.8 r

See footnotes following Table 6.
r=revised

March 8, 2017
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)						
2016 ANNUAL	0.8 r	0.5 r	-0.3 r	3.2 r	1.9 r	2.4
2016 IV	1.5 r	1.4 r	-0.1 r	4.2 r	0.7 r	2.6 r
III	2.1	2.3 r	0.2 r	4.3 r	2.6 r	2.2 r
II	2.3 r	0.6	-1.7 r	9.9 r	7.2 r	7.5
I	-0.7 r	-0.1	0.6 r	-6.7 r	-6.4 r	-6.0
2015 ANNUAL	0.0	0.5	0.5	2.9 r	2.8	2.9
2015 IV	-2.0 r	-1.4	0.6 r	9.5 r	8.6 r	11.8
III	4.4 r	2.3	-2.1 r	3.2 r	1.9 r	-1.2 r
II	1.1 r	0.5	-0.5 r	4.0 r	1.5 r	2.9
I	-2.9 r	-4.0	-1.1 r	0.8 r	3.8 r	3.8
2014 ANNUAL	0.6 r	2.8	2.1	2.3 r	0.7	1.7
2014 IV	-0.3 r	1.9	2.3	4.3	4.6	4.7
III	0.7 r	3.7	3.0 r	3.3 r	2.5	2.6
II	1.4 r	7.2	5.6 r	-3.4 r	-5.3 r	-4.7
I	1.9 r	0.4	-1.5 r	11.1 r	8.6 r	9.0

Percent change from corresponding quarter of previous year						
2016 ANNUAL	0.8 r	0.5 r	-0.3 r	3.2 r	1.9 r	2.4
2016 IV	1.3 r	1.0 r	-0.2	2.7	0.9	1.4 r
III	0.4 r	0.3	-0.1 r	4.0	2.8	3.6 r
II	1.0 r	0.3	-0.6 r	3.8 r	2.7 r	2.8
I	0.7 r	0.3	-0.4 r	2.3 r	1.3 r	1.7
2015 ANNUAL	0.0	0.5	0.5	2.9 r	2.8	2.9
2015 IV	0.1 r	-0.7	-0.8 r	4.3 r	3.9 r	4.2
III	0.5 r	0.2	-0.4 r	3.1 r	2.9 r	2.5
II	-0.4	0.5	0.9	3.1	3.1	3.5
I	-0.3 r	2.1	2.4 r	1.2 r	1.3 r	1.5
2014 ANNUAL	0.6 r	2.8	2.1	2.3 r	0.7	1.7
2014 IV	0.9 r	3.3	2.3 r	3.7 r	2.5 r	2.8
III	1.0	3.9	2.9	1.7	-0.1	0.7
II	0.3	3.0	2.7 r	1.2 r	-0.8	0.9
I	0.3	1.0	0.7	2.7	1.3	2.4

Indexes 2009=100						
2016 ANNUAL	122.0 r	134.5 r	110.3 r	113.3 r	101.2 r	92.9 r
2016 IV	122.8 r	135.3 r	110.2 r	115.4 r	102.1 r	94.0 r
III	122.3 r	134.8 r	110.2 r	114.2 r	102.0 r	93.4 r
II	121.7 r	134.1	110.1 r	113.0 r	101.3 r	92.9 r
I	121.0 r	133.9	110.6 r	110.4 r	99.5 r	91.2 r
2015 ANNUAL	121.0 r	133.8	110.6 r	109.7 r	99.3 r	90.7
2015 IV	121.2 r	133.9	110.4 r	112.3 r	101.2 r	92.6 r
III	121.9 r	134.4	110.3 r	109.8 r	99.1 r	90.1 r
II	120.6 r	133.6	110.9 r	108.9 r	98.7 r	90.4 r
I	120.2 r	133.5	111.0 r	107.9 r	98.3 r	89.7 r
2014 ANNUAL	121.0 r	133.1	110.1 r	106.6 r	96.6 r	88.1
2014 IV	121.1 r	134.8	111.3 r	107.6 r	97.4 r	88.9 r
III	121.2 r	134.2	110.7 r	106.5 r	96.3 r	87.9 r
II	121.0 r	132.9	109.9 r	105.7 r	95.7 r	87.3 r
I	120.6 r	130.7	108.4 r	106.6 r	97.0 r	88.4 r

See footnotes following Table 6.
r=revised

March 8, 2017
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)						
2016 ANNUAL	-0.4 r	0.1 r	0.5 r	2.7 r	1.4 r	3.1 r
2016 IV	2.7 r	1.7 r	-1.0	4.8 r	1.3 r	2.0 r
III	-2.7	-1.2 r	1.5 r	3.8 r	2.1 r	6.6 r
II	-5.3 r	-2.9	2.5 r	3.6 r	1.1 r	9.4
I	3.3 r	1.4	-1.7 r	-2.6 r	-2.3 r	-5.7
2015 ANNUAL	0.2 r	1.9	1.7 r	1.5 r	1.4 r	1.3
2015 IV	-0.8 r	0.6	1.4 r	5.1 r	4.3 r	5.9 r
III	1.1 r	1.4	0.3 r	5.2 r	3.8 r	4.0
II	-0.3 r	0.7	1.0 r	5.5 r	2.9 r	5.8
I	1.1 r	1.8	0.7 r	-4.6 r	-1.7 r	-5.6
2014 ANNUAL	0.1 r	0.6	0.5 r	3.6 r	1.9 r	3.5
2014 IV	-3.1 r	3.7	7.1 r	2.5 r	2.8 r	5.8
III	3.1 r	1.9	-1.1 r	3.4 r	2.5 r	0.3
II	2.3 r	3.3	1.0 r	-2.8 r	-4.8 r	-5.0
I	0.6 r	-1.0	-1.6 r	10.3 r	7.9 r	9.7

Percent change from corresponding quarter of previous year						
2016 ANNUAL	-0.4 r	0.1 r	0.5 r	2.7 r	1.4 r	3.1 r
2016 IV	-0.6 r	-0.2 r	0.3 r	2.4 r	0.5	2.9 r
III	-1.4 r	-0.5 r	0.9 r	2.4 r	1.3 r	3.9 r
II	-0.5 r	0.1	0.6 r	2.8 r	1.7 r	3.3
I	0.8 r	1.0	0.2 r	3.2 r	2.1 r	2.4
2015 ANNUAL	0.2 r	1.9	1.7 r	1.5 r	1.4 r	1.3
2015 IV	0.3 r	1.1	0.8 r	2.7 r	2.3 r	2.4
III	-0.3 r	1.9	2.2 r	2.1 r	1.9 r	2.4
II	0.2 r	2.0	1.9 r	1.6 r	1.6 r	1.5
I	0.8	2.7	1.9 r	-0.4	-0.3	-1.2
2014 ANNUAL	0.1 r	0.6	0.5 r	3.6 r	1.9 r	3.5
2014 IV	0.7	2.0	1.3	3.3 r	2.0	2.6
III	1.0 r	1.0	0.0 r	3.7 r	2.0 r	2.8
II	-0.6 r	0.2	0.7 r	2.7 r	0.6 r	3.3
I	-0.8 r	-0.7	0.1 r	4.5 r	3.0 r	5.3

Indexes 2009=100						
2016 ANNUAL	112.5 r	116.8 r	103.8 r	114.7 r	102.5 r	101.9 r
2016 IV	112.3 r	116.7 r	103.9 r	116.5 r	103.1 r	103.7 r
III	111.6 r	116.2 r	104.2 r	115.1 r	102.7 r	103.2 r
II	112.3 r	116.6	103.8 r	114.0 r	102.2 r	101.5 r
I	113.9 r	117.5	103.2 r	113.0 r	101.9 r	99.3 r
2015 ANNUAL	113.0 r	116.6	103.2 r	111.7 r	101.1 r	98.8
2015 IV	112.9 r	117.0	103.6 r	113.8 r	102.5 r	100.7 r
III	113.2 r	116.8	103.2 r	112.4 r	101.4 r	99.3
II	112.9 r	116.4	103.2 r	111.0 r	100.5 r	98.3 r
I	112.9 r	116.2	102.9 r	109.5 r	99.8 r	96.9 r
2014 ANNUAL	112.7 r	114.4	101.5 r	110.0 r	99.7 r	97.6 r
2014 IV	112.6 r	115.7	102.7 r	110.8 r	100.2 r	98.3 r
III	113.5 r	114.7	101.0 r	110.1 r	99.5 r	97.0 r
II	112.7 r	114.1	101.3 r	109.2 r	98.9 r	96.9 r
I	112.0 r	113.2	101.0 r	109.9 r	100.1 r	98.1 r

See footnotes following Table 6.
r=revised

March 8, 2017
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)										
2016 III	6.3 r	7.8	1.5 r	3.9 r	2.2 r	-2.2	-4.5	-3.0	15.6	-0.7
II	-1.2	0.2	1.4	5.7	3.1	7.0	1.0	5.0	-17.2	1.8
I	1.3	1.9	0.6	-1.9	-1.6	-3.2	-12.1	-6.1	30.7	-2.0
2015 ANNUAL	0.8 r	3.0	2.2	2.9	2.8	2.2	0.8	1.7	-6.4	0.5
2015 IV	-1.4 r	1.6	3.0 r	2.5 r	1.6 r	3.9	14.9	7.3	-36.4	0.1
III	1.2 r	3.0	1.8 r	1.7 r	0.3 r	0.5	0.3	0.4	-0.4	0.3
II	-2.3 r	-1.3	1.1 r	3.7 r	1.2 r	6.2	3.8	5.4	-13.9	2.4
I	2.2 r	3.5	1.3 r	5.9 r	9.0 r	3.6	-2.0	1.8	-14.4	-0.8
2014 ANNUAL	0.3	3.0	2.7	2.5	0.8	2.2	0.5	1.6	2.4	1.7
2014 IV	1.1 r	4.3	3.2 r	1.9 r	2.2 r	0.8	-0.6	0.3	-4.9	-0.5
III	3.0 r	5.9	2.8 r	2.0 r	1.2 r	-1.0	-1.1	-1.0	16.2	1.4
II	0.3 r	5.8	5.5 r	-3.0 r	-4.9 r	-3.3	-1.0	-2.6	37.8	2.4
I	0.6	2.3	1.6	9.2 r	6.8 r	8.6	0.7	6.0	-19.6	1.9

Percent change from corresponding quarter of previous year										
2016 III	1.2 r	2.8	1.6 r	2.5 r	1.3 r	1.3	-0.6	0.7	-5.6	-0.2
II	0.0 r	1.7	1.7 r	1.9	0.9 r	2.0	0.6	1.5	-9.0	0.0
I	-0.3	1.3	1.6	1.5 r	0.4	1.8	1.3	1.6	-8.1	0.2
2015 ANNUAL	0.8 r	3.0	2.2	2.9	2.8	2.2	0.8	1.7	-6.4	0.5
2015 IV	-0.1 r	1.7	1.8	3.4	3.0 r	3.5	4.1	3.7	-17.3	0.5
III	0.5	2.4	1.8	3.3	3.1 r	2.7	0.4	2.0	-8.6	0.3
II	1.0 r	3.1	2.1	3.4 r	3.4 r	2.4	0.0	1.6	-5.0	0.6
I	1.6 r	4.9	3.2 r	1.7	1.8	0.0	-1.2	-0.4	6.8	0.6
2014 ANNUAL	0.3	3.0	2.7	2.5	0.8	2.2	0.5	1.6	2.4	1.7
2014 IV	1.3	4.5	3.2	2.5	1.2 r	1.2	-0.5	0.6	5.2	1.3
III	0.9	3.8	2.9	2.3	0.5 r	1.4	0.2	1.0	7.2	1.9
II	-0.7	2.1	2.9 r	1.7 r	-0.3	2.5	1.2	2.1	2.8	2.2
I	-0.2 r	1.6	1.9	3.5 r	2.0 r	3.7	1.0	2.8	-5.9	1.5

Indexes 2009=100										
2016 III	107.5 r	123.5	114.9 r	117.0 r	104.5 r	108.9	100.3	106.0	139.4	109.5
II	105.9 r	121.2	114.5 r	115.9 r	103.9 r	109.5	101.4	106.8	134.5	109.7
I	106.2 r	121.2	114.1 r	114.3 r	103.1 r	107.7	101.2	105.5	141.0	109.2
2015 ANNUAL	106.1 r	119.9	113.0 r	113.9 r	103.1 r	107.3	101.5	105.4	145.1	109.5
2015 IV	105.9 r	120.6	113.9 r	114.9 r	103.5 r	108.5	104.5	107.2	131.8	109.8
III	106.2 r	120.1	113.1 r	114.2 r	103.1 r	107.5	100.9	105.3	147.6	109.7
II	105.9 r	119.3	112.6 r	113.7 r	103.0 r	107.4	100.8	105.2	147.8	109.6
I	106.5 r	119.6	112.3 r	112.7 r	102.7 r	105.8	99.9	103.8	153.4	109.0
2014 ANNUAL	105.3 r	116.4	110.5 r	110.6 r	100.3 r	105.0	100.7	103.6	155.1	109.0
2014 IV	106.0 r	118.6	111.9 r	111.1 r	100.5 r	104.8	100.4	103.3	159.5	109.2
III	105.7 r	117.4	111.1 r	110.6 r	100.0 r	104.6	100.5	103.3	161.5	109.4
II	104.9 r	115.7	110.3 r	110.0 r	99.7 r	104.9	100.8	103.5	155.5	109.0
I	104.8 r	114.1	108.9 r	110.8 r	100.9 r	105.8	101.1	104.2	143.6	108.3

See footnotes following Table 6.
r=revised

March 8, 2017
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 -1.6 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 2016.

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 1978-2015 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.