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

PRODUCTIVITY AND COSTS
 First Quarter 2023, Preliminary

Nonfarm business sector labor productivity decreased 2.7 percent in the first quarter of 2023, the U.S. Bureau of Labor Statistics reported today, as output increased 0.2 percent and hours worked increased 3.0 percent. (All quarterly percent changes in this release are seasonally adjusted annual rates.) From the same quarter a year ago, nonfarm business sector labor productivity decreased 0.9 percent, reflecting a 1.3-percent increase in output and a 2.3-percent increase in hours worked. (See chart 1 and table A1.) The 0.9-percent productivity decline is the first time the four-quarter change series has remained negative for five consecutive quarters; this series begins in the first quarter of 1948.

Chart 1. Labor productivity, nonfarm business, 2019Q1 – 2023Q1

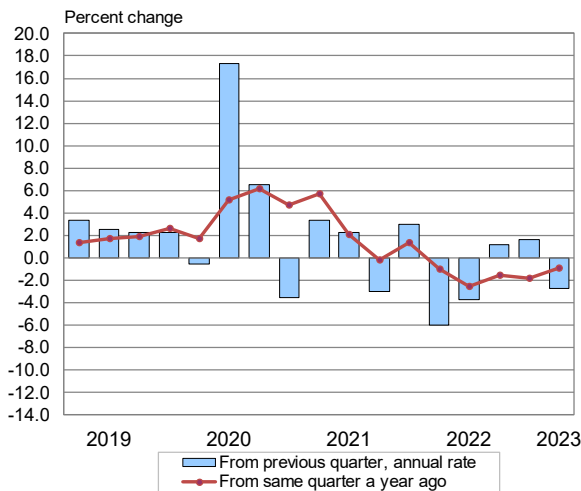
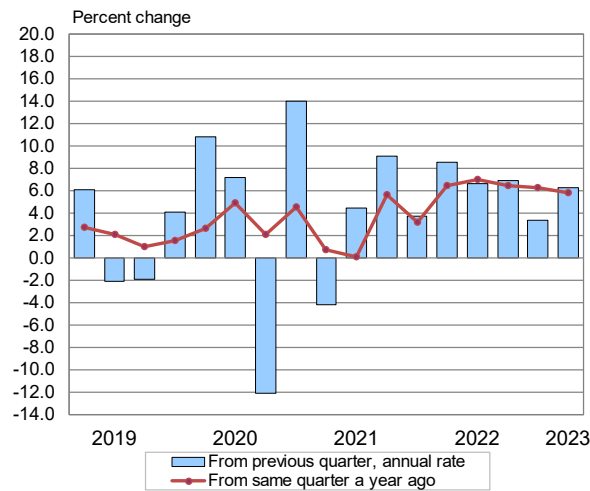


Chart 2. Unit labor costs, nonfarm business, 2019Q1 – 2023Q1



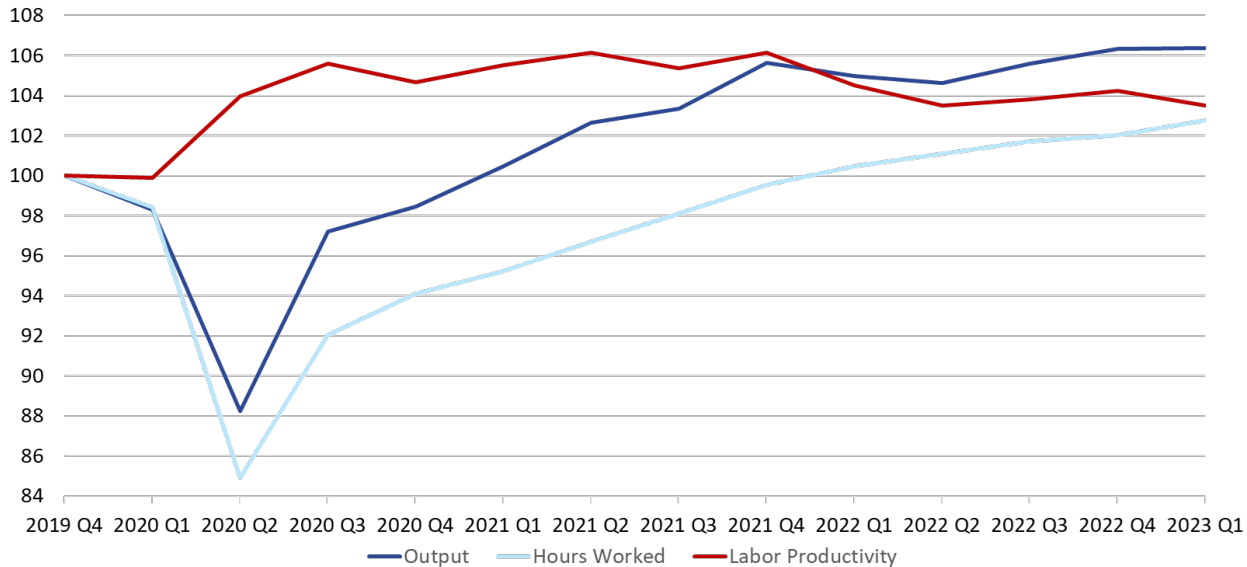
Unit labor costs in the nonfarm business sector increased 6.3 percent in the first quarter of 2023, reflecting a 3.4-percent increase in hourly compensation and a 2.7-percent decrease in productivity. Unit labor costs increased 5.8 percent over the last four quarters. (See chart 2 and tables A1 and 2.)

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 productivity tend to reduce them. Real hourly compensation, which takes into account consumer prices, decreased 0.3 percent in the first quarter of 2023, and declined 1.0 percent over the last four quarters.

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. During the current business cycle, starting in the fourth quarter of 2019, labor productivity has grown at an annual rate of 1.1 percent, reflecting a 1.9-percent rate of growth in output and a 0.8-percent rate of growth in

hours worked during the business cycle. (See chart 3.) The 1.1-percent rate of productivity growth in the current business cycle thus far is a historically low productivity growth rate; no other previous business cycle had lower productivity growth, except for the brief six-quarter cycle from 1980 Q1 to 1981 Q3, which exhibited 1.0 percent growth.

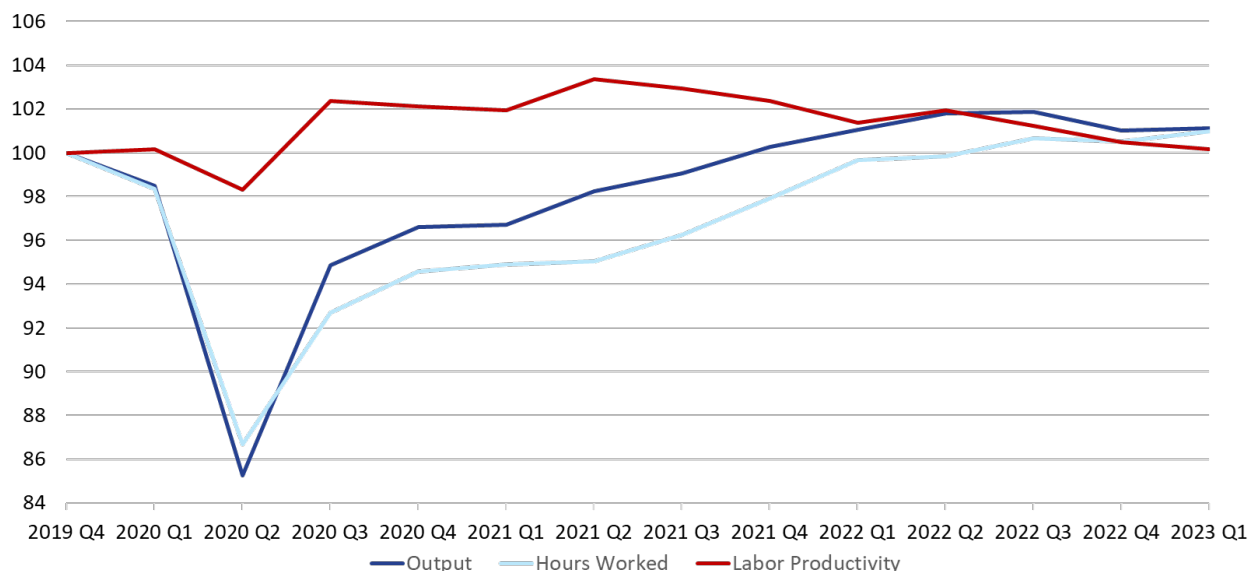
Chart 3. Labor Productivity, Output, and Hours Worked index series, nonfarm business, 2019 Q4 – 2023 Q1



Manufacturing sector labor productivity decreased 1.3 percent in the first quarter of 2023, as output increased 0.5 percent and hours worked increased 1.8 percent. In the durable manufacturing sector, productivity decreased 4.4 percent, with a 1.8-percent decrease in output and a 2.7-percent increase in hours worked. Nondurable manufacturing sector productivity increased 2.7 percent, as output increased 2.8 percent and hours worked increased 0.1 percent. Total manufacturing sector productivity decreased 1.2 percent from the same quarter a year ago. (See tables A1, 3, 4, and 5.)

Unit labor costs in the total manufacturing sector increased 3.4 percent in the first quarter of 2023, reflecting a 2.1-percent increase in hourly compensation and a 1.3-percent decrease in productivity. Manufacturing unit labor costs increased 5.8 percent from the same quarter a year ago. (See tables A1 and 3.)

Chart 4. Labor Productivity, Output, and Hours Worked index series, manufacturing, 2019 Q4 – 2023 Q1



Manufacturing sector output and hours worked both grew at an annual rate of 0.3 percent since the fourth quarter of 2019, and labor productivity has had no growth since the start of the business cycle. (See chart 4.) This is a historically low productivity growth rate and matches the 0.0-percent annual rate of the last business cycle from fourth-quarter 2007 through fourth-quarter 2019.

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.)

Preliminary fourth-quarter and annual 2022 measures were announced today for the **nonfinancial corporate sector**. Productivity increased 0.7 percent in the fourth quarter of 2022, as output increased 1.9 percent and hours worked increased 1.2 percent. From the fourth quarter of 2021 to the fourth quarter of 2022, nonfinancial corporate sector productivity decreased 1.6 percent.

Table C1 presents **annual average changes** for the most recent 5 years for the nonfinancial corporate sector. **Nonfinancial corporate sector** productivity fell 2.0 percent in 2022, as output increased 2.1 percent and hours worked increased 4.2 percent. This is the largest annual decrease in productivity for the nonfinancial corporate sector since 1974, when the measure also decreased 2.0 percent (See tables A2, C1, and 6.)

Revised measures

Hours and related measures—including labor productivity and hourly compensation—for all sectors were revised to incorporate updated ratios of hours worked to hours paid by detailed industry, provided by the BLS National Compensation Survey; indexes were subject to revision back to 2006. Measures of real hourly compensation for all sectors were subject to revision from 1984 forward due to the incorporation of the revised Consumer Price Index Retroactive Series. Measures of output for the manufacturing sectors incorporate revised annual benchmark data from 1987 to 2021 released March 23 by BLS, as well as annual revisions from the Federal Reserve Board released March 28.

Table B1 presents previous and revised productivity and related measures for the business, nonfarm business, and manufacturing sectors for the fourth quarter of 2022.

In the **fourth quarter of 2022**, nonfarm business sector productivity was revised down 0.1 percentage point to an increase of 1.6 percent, reflecting a 0.2-percentage point downward revision to output and a 0.1-percentage point downward revision to hours worked. Nonfarm business unit labor costs were revised up 0.1 percentage point to an increase of 3.3 percent. Total manufacturing sector productivity was revised down 0.3 percentage point to a decrease of 3.0 percent in the fourth quarter of 2022, reflecting a 0.4-percentage point downward revision to output and a 0.1-percentage point downward revision to hours worked. Unit labor costs in the manufacturing sector were revised up 0.3 percentage point to an increase of 8.0 percent during the fourth quarter of 2022. Labor productivity was revised up 1.0 percentage point in the durable manufacturing sector to a decrease of 2.1 percent. In the nondurable manufacturing sector, labor productivity was revised down 1.7 percentage points to a decrease of 3.9 percent. (See table B1.)

The **annual average rate** of productivity growth in the nonfarm business sector in 2022 was revised up 0.1-percentage point to a decrease of 1.6 percent. For the manufacturing sector, annual average productivity growth in 2022 was revised down 0.3-percentage point to a decrease of 1.3 percent, reflecting a 0.2-percentage point downward revision to output. (See tables 2 and 3.)

Quarterly and annual data for all sectors for recent years appear in tables 1-6. Full historical annual and quarterly measures can be found at www.bls.gov/productivity/data-overview.htm.

The revised Productivity and Costs news release for first-quarter 2023 is scheduled to be released on Thursday, June 1, 2023, at 8:30 a.m. (ET).

Table A1. Labor productivity growth and related measures - preliminary first-quarter 2023

(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	-2.7	0.2	3.0	3.4	-0.3	6.3
	A year ago	-0.9	1.3	2.3	4.8	-1.0	5.8
Business	Previous quarter	-2.3	0.6	3.0	3.5	-0.3	5.9
	A year ago	-0.7	1.4	2.1	5.0	-0.8	5.7
Manufacturing	Previous quarter	-1.3	0.5	1.8	2.1	-1.6	3.4
	A year ago	-1.2	0.1	1.3	4.5	-1.2	5.8
Durable manufacturing	Previous quarter	-4.4	-1.8	2.7	0.6	-3.1	5.2
	A year ago	-1.7	0.7	2.4	4.1	-1.6	5.8
Nondurable manufacturing	Previous quarter	2.7	2.8	0.1	5.0	1.2	2.3
	A year ago	0.0	-0.5	-0.5	5.1	-0.7	5.1

Table A2. Labor productivity growth and related measures - preliminary fourth-quarter 2022

(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
Nonfinancial corporate	Previous quarter	0.7	1.9	1.2	5.8	1.6	5.1
	A year ago	-1.6	1.1	2.8	5.3	-1.7	7.1

Table B1. Labor productivity growth and related measures - revised fourth-quarter 2022

(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	1.6	2.9	1.3	4.9	0.7	3.3
	Previously published	1.7	3.1	1.4	4.9	0.7	3.2
Business	Revised	1.9	2.8	0.9	5.4	1.1	3.4
	Previously published	2.0	3.0	1.0	5.3	1.1	3.3
Manufacturing	Revised	-3.0	-3.4	-0.5	4.8	0.6	8.0
	Previously published	-2.7	-3.0	-0.4	4.8	0.6	7.7
Durable manufacturing	Revised	-2.1	-2.6	-0.5	4.1	-0.1	6.3
	Previously published	-3.1	-3.5	-0.4	4.0	-0.1	7.4
Nondurable manufacturing	Revised	-3.9	-4.2	-0.4	6.1	1.8	10.3
	Previously published	-2.2	-2.5	-0.3	6.2	2.0	8.6

Sector	Year	Labor productivity	Output	Hours worked	Hourly compensation	Real hourly compensation	Unit labor costs
Nonfinancial corporate	2022	-2.0	2.1	4.2	5.7	-2.2	7.8
	2021	3.0	8.3	5.2	4.5	-0.3	1.5
	2020	3.6	-4.0	-7.4	8.1	6.7	4.4
	2019	1.6	2.5	0.9	3.9	2.1	2.3
	2018	1.3	3.3	2.0	3.6	1.1	2.2

TECHNICAL NOTES

Labor Hours

Hours worked 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 and hours paid to wage and salary workers in nonfarm establishments, counting a person who is employed by two or more establishments at each place of employment. As of the February 3, 2023 Employment Situation release, the CES program has updated the national nonfarm payroll series to the 2022 North American Industry Classification System (NAICS). The BLS Major Sector Productivity program will be remaining on a NAICS 2017 basis for the time being by converting NAICS 2022 data from CES back to a NAICS 2017 basis using ratios published on the CES website and based on the Quarterly Census of Employment and Wages (QCEW). Hours of paid time off are removed from hours paid 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, hours of paid time off are removed using a combination of NCS and Hours at Work survey data. Off-the-clock hours are added, yielding hours worked, using data from the Current Population Survey (CPS).

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.

Detailed hours data are presented in the table “Hours Worked in Total U.S. Economy and Subsectors” on the BLS website (www.bls.gov/productivity/tables/total-economy-hours-employment.xlsx).

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 households (including owner-occupied housing). Corresponding exclusions also are made in labor hours worked. Business output accounted for about 77 percent of the value of GDP in 2022. Nonfarm business, which excludes farming, accounted for about 76 percent of GDP in 2022.

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 intrasectoral 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; 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 52 percent of the value of GDP in 2022.

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 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 the Handbook of Methods at www.bls.gov/pub/hom/msp/home.htm.

If you are deaf, hard of hearing, or have a speech disability, please dial 7-1-1 to access telecommunications relay services.

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)	Value-added output price deflator (4)

Percent change from previous quarter at annual rate (5)								
2023 I	-2.3	0.6	3.0	3.5	-0.3	5.9	1.2	3.9
2022 ANNUAL	-1.6	2.2	3.9	4.9	-3.0 r	6.6	8.4	7.4
2022 IV	1.9 r	2.8 r	0.9 r	5.4 r	1.1	3.4 r	3.4	3.4 r
III	1.0	3.5	2.5	8.0	2.3	7.0	-0.1	3.8
II	-3.5	-1.4	2.1 r	3.0	-6.1	6.8 r	15.4	10.4
I	-6.2 r	-2.4	4.0 r	1.7	-7.0 r	8.5	8.6	8.5
2021 ANNUAL	2.2	7.7	5.4	4.8	0.0 r	2.6	8.3	4.9
2021 IV	3.1 r	9.0	5.8	7.0 r	-1.6 r	3.8	12.1	7.3
III	-2.6 r	2.6	5.4	6.4	-0.2 r	9.3	2.9	6.5
II	2.5	8.7	6.0	7.2	-0.7 r	4.5 r	11.1	7.3
I	3.3	8.1	4.7 r	-0.8 r	-4.9 r	-3.9	22.4	6.3

Percent change from corresponding quarter of previous year								
2023 I	-0.7	1.4	2.1	5.0	-0.8	5.7	4.8	5.3
2022 ANNUAL	-1.6	2.2	3.9	4.9	-3.0 r	6.6	8.4	7.4
2022 IV	-1.8	0.6	2.4 r	4.5	-2.5 r	6.4	6.7	6.5
III	-1.5	2.1	3.6 r	4.9	-3.2 r	6.5	8.8	7.5
II	-2.4	1.8	4.3 r	4.5	-3.8 r	7.1	9.6 r	8.2
I	-0.9	4.4	5.3	5.5	-2.4 r	6.5	8.6	7.4
2021 ANNUAL	2.2	7.7	5.4	4.8	0.0 r	2.6	8.3	4.9
2021 IV	1.5	7.1	5.5	4.9	-1.9 r	3.3	11.9	6.8
III	-0.3	6.1	6.5	5.4	0.0 r	5.8	5.4	5.6
II	2.2	16.1	13.7 r	2.4	-2.4 r	0.2	12.5	5.1
I	5.4	2.1	-3.1	6.4	4.3 r	0.9	3.8	2.1

Indexes 2012=100								
2023 I	112.8	130.1	115.3	147.5	111.8	130.7	124.5	128.0
2022 ANNUAL	113.3 r	128.8 r	113.6 r	143.3 r	111.9 r	126.5 r	122.3 r	124.6 r
2022 IV	113.5 r	129.9 r	114.4 r	146.2 r	111.9 r	128.8 r	124.2 r	126.8 r
III	113.0 r	129.0	114.2 r	144.3 r	111.6 r	127.8 r	123.1 r	125.7
II	112.7 r	127.9	113.5 r	141.6 r	111.0 r	125.6 r	123.2 r	124.5
I	113.7 r	128.3	112.9 r	140.5 r	112.7 r	123.6 r	118.8 r	121.5
2021 ANNUAL	115.1 r	126.0	109.4 r	136.6 r	115.3 r	118.7 r	112.9 r	116.1
2021 IV	115.5 r	129.1	111.8 r	139.9 r	114.8 r	121.1 r	116.4 r	119.0
III	114.7 r	126.4	110.2 r	137.6 r	115.3 r	120.0 r	113.1 r	117.0
II	115.4 r	125.5	108.8 r	135.5 r	115.3 r	117.3 r	112.3 r	115.1
I	114.7 r	123.0	107.2 r	133.1 r	115.5 r	116.1 r	109.4 r	113.1

See footnotes following Table 6.
r=revised

May 4, 2023
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)	Value-added output price deflator (4)

Percent change from previous quarter at annual rate (5)								
2023 I	-2.7	0.2	3.0	3.4	-0.3	6.3	2.1	4.5
2022 ANNUAL	-1.6 r	2.3	4.0	4.8 r	-3.1 r	6.5	7.5	6.9
2022 IV	1.6 r	2.9 r	1.3 r	4.9	0.7	3.3 r	3.3	3.3 r
III	1.2	3.6	2.4	8.2	2.5	6.9	-0.3 r	3.8
II	-3.7 r	-1.2	2.6	2.7 r	-6.5 r	6.6	13.9 r	9.7
I	-6.0 r	-2.5	3.8 r	2.0 r	-6.8 r	8.5	6.4	7.6
2021 ANNUAL	2.2	7.8	5.5	4.7	-0.1 r	2.4	7.7	4.6
2021 IV	3.0	9.1	5.9 r	6.8 r	-1.8 r	3.7	12.8	7.5
III	-3.0	2.7	5.9	5.9	-0.7 r	9.1	2.5	6.3
II	2.3 r	8.9	6.4	6.9	-1.0 r	4.4	8.7	6.2
I	3.4	8.5	4.9	-0.9	-5.0 r	-4.2	22.7	6.2

Percent change from corresponding quarter of previous year								
2023 I	-0.9	1.3	2.3	4.8	-1.0	5.8	4.6	5.3
2022 ANNUAL	-1.6 r	2.3	4.0	4.8 r	-3.1 r	6.5	7.5	6.9
2022 IV	-1.8	0.7	2.5 r	4.4	-2.6 r	6.3	5.7	6.1 r
III	-1.5	2.2	3.7	4.9 r	-3.2 r	6.4	8.1	7.1
II	-2.5	1.9	4.5 r	4.3	-4.0 r	7.0	8.8	7.8
I	-1.0	4.5	5.5	5.4 r	-2.6 r	6.4	7.5	6.9
2021 ANNUAL	2.2	7.8	5.5	4.7	-0.1 r	2.4	7.7	4.6
2021 IV	1.4	7.3	5.8	4.6	-2.1 r	3.2	11.4	6.5
III	-0.2	6.3	6.6	5.4	0.0 r	5.6	4.5	5.1
II	2.1	16.3	13.9	2.2	-2.6 r	0.1	11.4	4.6
I	5.7 r	2.2	-3.2	6.4	4.3 r	0.7	3.8 r	2.0

Indexes 2012=100								
2023 I	112.5	130.1	115.6	147.4	111.8	131.0	124.1	127.9
2022 ANNUAL	113.2 r	128.9 r	113.9 r	143.3 r	111.9 r	126.6 r	121.7 r	124.5 r
2022 IV	113.3 r	130.0 r	114.8 r	146.1 r	111.8 r	129.0 r	123.4 r	126.6 r
III	112.9 r	129.1	114.4 r	144.4 r	111.6 r	127.9 r	122.4 r	125.5
II	112.5 r	128.0	113.7 r	141.6 r	111.0 r	125.8 r	122.5 r	124.4
I	113.6 r	128.4	113.0 r	140.6 r	112.8 r	123.8 r	118.6 r	121.5
2021 ANNUAL	115.1 r	126.0	109.5 r	136.8 r	115.5 r	118.9 r	113.3 r	116.4
2021 IV	115.4 r	129.2	111.9 r	140.0 r	114.8 r	121.3 r	116.8 r	119.3
III	114.5 r	126.4	110.3 r	137.7 r	115.4 r	120.2 r	113.3 r	117.2
II	115.4 r	125.5	108.8 r	135.7 r	115.6 r	117.6 r	112.6 r	115.4
I	114.7 r	122.9	107.1 r	133.5 r	115.9 r	116.3 r	110.3 r	113.7

See footnotes following Table 6.
r=revised

May 4, 2023
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)						
2023 I	-1.3	0.5	1.8	2.1	-1.6	3.4
2022 ANNUAL	-1.3 r	2.9 r	4.2	4.1	-3.7 r	5.4 r
2022 IV	-3.0 r	-3.4 r	-0.5 r	4.8	0.6	8.0 r
III	-2.8 r	0.4 r	3.3 r	7.7	2.0	10.8 r
II	2.2 r	3.0 r	0.7	3.4 r	-5.8 r	1.2 r
I	-3.9 r	3.1 r	7.3 r	1.4	-7.2 r	5.5 r
2021 ANNUAL	1.8 r	5.1 r	3.2	2.7	-2.1 r	0.8 r
2021 IV	-2.1 r	4.9 r	7.2	8.2	-0.6 r	10.5 r
III	-1.7 r	3.4 r	5.2	-1.4	-7.5 r	0.3 r
II	5.8 r	6.4 r	0.6	6.6	-1.3 r	0.8 r
I	-0.7 r	0.5 r	1.3	-1.0	-5.1 r	-0.2 r

Percent change from corresponding quarter of previous year						
2023 I	-1.2	0.1	1.3	4.5	-1.2	5.8
2022 ANNUAL	-1.3 r	2.9 r	4.2	4.1	-3.7 r	5.4 r
2022 IV	-1.9	0.7	2.7	4.3	-2.7 r	6.3
III	-1.7 r	2.8 r	4.6	5.1 r	-3.0 r	6.9 r
II	-1.4 r	3.6 r	5.1	2.8 r	-5.3 r	4.3 r
I	-0.6 r	4.5 r	5.0	3.6	-4.2 r	4.2 r
2021 ANNUAL	1.8 r	5.1 r	3.2	2.7	-2.1 r	0.8 r
2021 IV	0.2 r	3.8 r	3.5	3.0	-3.7 r	2.8 r
III	0.6 r	4.4 r	3.8	2.9	-2.4 r	2.3 r
II	5.1 r	15.2 r	9.6	-0.2	-4.9 r	-5.1 r
I	1.8 r	-1.8 r	-3.5	4.7	2.7 r	2.9 r

Indexes 2012=100						
2023 I	95.0	101.4	106.7	135.1	102.5	142.2
2022 ANNUAL	96.2 r	101.7 r	105.7 r	132.0 r	103.1 r	137.2 r
2022 IV	95.3 r	101.3 r	106.3 r	134.4 r	102.9 r	141.0 r
III	96.0 r	102.1 r	106.4 r	132.8 r	102.7 r	138.3 r
II	96.7 r	102.0 r	105.5 r	130.4 r	102.2 r	134.9 r
I	96.2 r	101.3 r	105.3 r	129.3 r	103.7 r	134.5 r
2021 ANNUAL	97.4 r	98.8 r	101.4 r	126.8 r	107.0 r	130.1 r
2021 IV	97.1 r	100.5 r	103.5 r	128.8 r	105.7 r	132.7 r
III	97.6 r	99.3 r	101.7	126.3	105.9 r	129.4 r
II	98.1 r	98.5 r	100.4 r	126.8 r	107.9 r	129.3 r
I	96.7 r	97.0 r	100.3 r	124.8 r	108.3 r	129.0 r

See footnotes following Table 6.
r=revised

May 4, 2023
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)						
2023 I	-4.4	-1.8	2.7	0.6	-3.1	5.2
2022 ANNUAL	-1.0 r	3.7 r	4.7	3.4	-4.3 r	4.4 r
2022 IV	-2.1 r	-2.6 r	-0.5 r	4.1 r	-0.1	6.3 r
III	-3.7 r	2.0 r	5.9	7.7	2.0	11.8 r
II	3.7 r	5.4 r	1.6	4.0	-5.2 r	0.3 r
I	-3.0	5.6 r	8.9	-0.7	-9.2 r	2.4 r
2021 ANNUAL	1.0 r	4.1 r	3.1	3.4	-1.4 r	2.4 r
2021 IV	0.3 r	5.4 r	5.1	9.9	1.0 r	9.6 r
III	-2.8 r	2.9 r	5.9	-7.0	-12.8 r	-4.4 r
II	-2.3 r	-2.6 r	-0.3	9.4	1.4 r	12.0 r
I	-3.9 r	-0.2 r	3.9	0.7	-3.5 r	4.8 r

Percent change from corresponding quarter of previous year						
2023 I	-1.7	0.7	2.4	4.1	-1.6	5.8
2022 ANNUAL	-1.0 r	3.7 r	4.7	3.4	-4.3 r	4.4 r
2022 IV	-1.3 r	2.5 r	3.9	3.7	-3.2 r	5.1 r
III	-0.7 r	4.6 r	5.3	5.2	-2.9 r	5.9 r
II	-0.5 r	4.8 r	5.3	1.4	-6.7 r	1.9 r
I	-2.0 r	2.8 r	4.8	2.7	-5.1 r	4.7 r
2021 ANNUAL	1.0 r	4.1 r	3.1	3.4	-1.4 r	2.4 r
2021 IV	-2.2 r	1.3 r	3.6	3.0	-3.7 r	5.3 r
III	-2.4 r	1.3 r	3.8	3.6 r	-1.7 r	6.1 r
II	7.0 r	18.4 r	10.7	0.8	-3.9 r	-5.8 r
I	2.5 r	-2.1 r	-4.5	5.8 r	3.8 r	3.2 r

Indexes 2012=100						
2023 I	95.3	101.3	106.3	135.2	102.5	141.9
2022 ANNUAL	97.2 r	101.7 r	104.6	132.8 r	103.6 r	136.6 r
2022 IV	96.4 r	101.8 r	105.6 r	135.0 r	103.3 r	140.1 r
III	96.9 r	102.4 r	105.7 r	133.7 r	103.4 r	138.0 r
II	97.8 r	101.9 r	104.2 r	131.2 r	102.8 r	134.2 r
I	96.9 r	100.6 r	103.8 r	129.9 r	104.2 r	134.0 r
2021 ANNUAL	98.2 r	98.1 r	99.9 r	128.4 r	108.4 r	130.8 r
2021 IV	97.7 r	99.2 r	101.6 r	130.1 r	106.8 r	133.2 r
III	97.6 r	98.0 r	100.4 r	127.1 r	106.5 r	130.2 r
II	98.3 r	97.2 r	98.9 r	129.4 r	110.2 r	131.7 r
I	98.9 r	97.9 r	99.0 r	126.6 r	109.8 r	128.0 r

See footnotes following Table 6.
r=revised

May 4, 2023
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)						
2023 I	2.7	2.8	0.1	5.0	1.2	2.3
2022 ANNUAL	-1.6 r	1.7 r	3.4	5.4	-2.5 r	7.1 r
2022 IV	-3.9 r	-4.2 r	-0.4 r	6.1 r	1.8 r	10.3 r
III	-0.2 r	-1.2 r	-1.1	7.1	1.4	7.2 r
II	1.3 r	0.6 r	-0.7	2.2	-6.9 r	0.8 r
I	-3.9 r	0.6 r	4.7	5.1	-3.9 r	9.3 r
2021 ANNUAL	1.2 r	4.5 r	3.3	1.3	-3.3 r	0.1 r
2021 IV	-6.2 r	3.8 r	10.7 r	5.5	-3.0 r	12.5 r
III	-1.4 r	2.7 r	4.2	10.2	3.3	11.8 r
II	12.2 r	14.6 r	2.1	1.6	-5.9 r	-9.4 r
I	1.8 r	-1.1 r	-2.9	-4.7	-8.7 r	-6.4 r

Percent change from corresponding quarter of previous year						
2023 I	0.0	-0.5	-0.5	5.1	-0.7	5.1
2022 ANNUAL	-1.6 r	1.7 r	3.4	5.4	-2.5 r	7.1 r
2022 IV	-1.7 r	-1.1 r	0.6	5.1	-2.0 r	6.9 r
III	-2.3 r	0.9 r	3.3	4.9 r	-3.2 r	7.4 r
II	-2.6 r	1.9 r	4.6	5.7	-2.7 r	8.5 r
I	-0.1 r	5.3 r	5.4 r	5.5 r	-2.4 r	5.6 r
2021 ANNUAL	1.2 r	4.5 r	3.3	1.3	-3.3 r	0.1 r
2021 IV	1.4 r	4.8 r	3.4	3.0	-3.7 r	1.6 r
III	1.9 r	6.0 r	4.0	1.7	-3.5 r	-0.2 r
II	2.3 r	10.4 r	7.9	-2.4	-7.0 r	-4.6 r
I	-0.7 r	-2.5 r	-1.8	2.9	0.8 r	3.6 r

Indexes 2012=100						
2023 I	97.0	104.2	107.4	135.0	102.4	139.2
2022 ANNUAL	97.1 r	104.4 r	107.5 r	130.9 r	102.2 r	134.7 r
2022 IV	96.3 r	103.4 r	107.4 r	133.4 r	102.1 r	138.5 r
III	97.3 r	104.6 r	107.5 r	131.5 r	101.7 r	135.1 r
II	97.3 r	104.9 r	107.8 r	129.2 r	101.3 r	132.8 r
I	97.0 r	104.7 r	107.9 r	128.5 r	103.1 r	132.5 r
2021 ANNUAL	98.7 r	102.6 r	104.0 r	124.2 r	104.8 r	125.8 r
2021 IV	98.0 r	104.6 r	106.7 r	127.0 r	104.2 r	129.6 r
III	99.6 r	103.6 r	104.0 r	125.3 r	105.0 r	125.8 r
II	99.9 r	102.9 r	103.0 r	122.3 r	104.1 r	122.4 r
I	97.1 r	99.5 r	102.4 r	121.8 r	105.7 r	125.5 r

See footnotes following Table 6.
r=revised

May 4, 2023
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	Value-added output price deflator (4)	Unit nonlabor costs (6)	Unit combined input costs (7)	Unit profits (8)

Percent change from previous quarter at annual rate (5)										
2022 ANNUAL	-2.0	2.1	4.2	5.7	-2.2	7.8	9.1	12.9	9.3	8.1
2022 IV	0.7	1.9	1.2	5.8	1.6	5.1	1.9	-0.3	3.4	-6.1
III	0.7 r	4.3	3.6	7.8 r	2.1	7.1	4.3	1.6	5.3	-1.1
II	-2.8	-0.6	2.3	4.2 r	-5.1 r	7.2	12.6	12.0	8.6	36.4
I	-5.0 r	-1.2	4.0	3.6	-5.2 r	9.1	12.2	24.7	13.6	4.8
2021 ANNUAL	3.0	8.3	5.2 r	4.5	-0.3 r	1.5	5.0	4.1	2.3	22.9
2021 IV	-2.4 r	5.3	8.0	5.4	-3.1 r	8.1	8.6	17.7	10.9	-3.1
III	1.2 r	5.4	4.2 r	9.4 r	2.6 r	8.1	8.2	17.0	10.7	-4.0
II	-1.1	4.7	5.8	6.9	-1.0 r	8.0	8.2	-10.8	2.0	48.2
I	3.0	7.3	4.2	-1.2	-5.3 r	-4.1	4.4	3.3	-1.9	51.6
2020 ANNUAL	3.6	-4.0	-7.4 r	8.1	6.7	4.4	1.4	-7.5	0.6	6.6
2020 IV	13.0	24.3	10.0	7.5	4.7 r	-4.9	1.3	59.3	10.3	-38.3
III	0.2	34.5	34.2	-7.0	-11.2 r	-7.2	3.2	-22.9	-11.9	177.2
II	3.2	-41.0	-42.9	28.6	33.3 r	24.6	2.9	-35.4	2.3	7.0
I	3.3 r	-2.3	-5.4 r	9.1 r	7.6	5.6	-0.6	2.5	4.6	-30.6

Percent change from corresponding quarter of previous year										
2022 ANNUAL	-2.0	2.1	4.2	5.7	-2.2	7.8	9.1	12.9	9.3	8.1
2022 IV	-1.6	1.1	2.8	5.3	-1.7	7.1	7.6	9.1	7.7	7.3
III	-2.4 r	1.9	4.4 r	5.2	-2.9 r	7.8	9.4	13.7	9.6	8.2
II	-2.3	2.2	4.6	5.6	-2.8 r	8.1	10.4	17.8	10.9	7.4
I	-1.9	3.5	5.5	6.3	-1.7 r	8.3	9.3	11.3	9.2	9.6
2021 ANNUAL	3.0	8.3	5.2 r	4.5	-0.3 r	1.5	5.0	4.1	2.3	22.9
2021 IV	0.1	5.7	5.5	5.0	-1.7 r	4.9	7.3	6.1	5.3	20.3
III	3.9	10.2	6.0	5.6	0.2 r	1.6	5.5	14.5	5.1	7.4
II	3.7	17.1	12.9	1.4	-3.4 r	-2.2	4.3	3.1	-0.7	40.0
I	4.8	1.4	-3.2	6.2	4.1 r	1.3	3.0	-4.8	-0.6	29.1
2020 ANNUAL	3.6	-4.0	-7.4 r	8.1	6.7	4.4	1.4	-7.5	0.6	6.6
2020 IV	4.8	-0.9	-5.5	8.8	7.4 r	3.8	1.7	-5.0	1.0	6.2
III	2.7	-5.3	-7.9 r	8.4 r	6.9 r	5.5	1.6	-16.4	-1.6	23.7
II	3.3	-11.4	-14.3 r	10.6	10.0 r	7.1	1.1	-9.9	1.7	-3.0
I	2.7	1.6	-1.1	4.2	2.0 r	1.5	1.0	0.9	1.3	-1.2

Indexes 2012=100										
2022 ANNUAL	111.5	126.4	113.3	146.7	114.5	131.5	128.8	117.9	126.9	140.0
2022 IV	111.5	127.5	114.4	149.8	114.7	134.4	130.9	118.9	129.2	140.8
III	111.3 r	126.9	114.0 r	147.7 r	114.2 r	132.7	130.3	118.9	128.2	143.0
II	111.1 r	125.5	113.0 r	145.0 r	113.6 r	130.5	128.9	118.5	126.5	143.4
I	111.9 r	125.7	112.4 r	143.5 r	115.1 r	128.3	125.2	115.2	123.9	132.7
2021 ANNUAL	113.8 r	123.8	108.8 r	138.8 r	117.1 r	121.9	118.0	104.4	116.1	129.5
2021 IV	113.3 r	126.1	111.3 r	142.2 r	116.7 r	125.5	121.6	109.0	120.0	131.2
III	114.0 r	124.5	109.2 r	140.4 r	117.6 r	123.1	119.1	104.6	117.0	132.2
II	113.7 r	122.9	108.1 r	137.3 r	116.9 r	120.7	116.8	100.6	114.0	133.5
I	114.0 r	121.5	106.5 r	135.0 r	117.2 r	118.4	114.5	103.5	113.5	121.0
2020 ANNUAL	110.5 r	114.3	103.4 r	132.8 r	117.5 r	120.2	112.4	100.3	113.6	105.4
2020 IV	113.2 r	119.3	105.5 r	135.4 r	118.8 r	119.7	113.3	102.7	114.0	109.1
III	109.8 r	113.0	103.0 r	133.0 r	117.4 r	121.2	112.9	91.4	111.3	123.1
II	109.7 r	104.9	95.7 r	135.4 r	121.0 r	123.5	112.0	97.5	114.8	95.4
I	108.8 r	119.8	110.1 r	127.2 r	112.6 r	116.9	111.2	108.8	114.2	93.8

See footnotes following Table 6.
r=revised

May 4, 2023
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.

SIZE OF REVISIONS: Productivity and cost measures are revised on a regular schedule as more complete data become available. The first estimate is published within 40 days of the close of the reference quarter, the second estimate approximately 30 days later, and the third estimate approximately 60 days after the second estimate. Based on past revisions, the third estimate of nonfarm business sector quarterly labor productivity growth has differed from the first estimate by -1.1 to +1.3 percentage point about 80 percent of the time. This interval is based on estimates for reference quarters from the first quarter of 2001 to the fourth quarter of 2022. For more about revisions to labor productivity growth see “Revisions to BLS quarterly labor productivity estimates: How large are they?” at www.bls.gov/opub/mlr/2022/article/revisions-to-bls-quarterly-labor-productivity-estimates-how-large-are-they.htm.

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 1978-2022 is based on the Consumer Price Index Retroactive series (CPI-URS).
- (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 adjustment.