

# United States Department of Labor



## **Bureau of Labor Statistics**

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#### PRODUCTIVITY AND COSTS

Preliminary Fourth Quarter and Annual Averages for 2002

The Bureau of Labor Statistics of the U.S. Department of Labor today reported preliminary productivity data—as measured by output per hour of all persons—for the fourth quarter and for the full year 2002. The seasonally adjusted annual rates of productivity change in the fourth quarter and the annual average changes were:

	Fourth quarter	Annual averages 2001-2002
Business sector	-0.7	4.7
Nonfarm business sector	-0.2	4.7

In the fourth quarter, productivity dipped 0.7 percent in the business sector as output increased 0.9 percent but hours at work increased more, 1.5 percent (seasonally adjusted annual rates). A similar pattern of growth occurred in the nonfarm business sector where output rose 0.8 percent, hours increased by 1.0 percent, and productivity fell 0.2 percent. On an annual average basis, productivity in both the business and nonfarm business sectors rose 4.7 percent in 2002. Fourth-quarter productivity and related measures are summarized in table A and annual average data in table B. Detailed information is presented in tables 1 through 5.

In the manufacturing sector, increases in productivity were:

	Fourth quarter	Annual averages 2001-2002
Manufacturing sector	0.7	4.6
Durable goods manufacturing	3.4	5.7
Nondurable goods manufacturing	-2.5	2.8

Manufacturing productivity grew 0.7 percent in the fourth quarter, reflecting a drop in output of 2.4 percent and a larger decline, 3.0 percent, in hours of all persons. On an annual average basis, output per hour in the manufacturing sector posted a 4.6-percent increase in 2002. Output and hours in manufacturing, which includes about 15 percent of U.S. business-sector employment, tend to vary more from quarter to quarter than data for the aggregate business and nonfarm business sectors.

Table A. Productivity and costs: Preliminary fourth-quarter 2002 measures
(Seasonally adjusted annual rates)

Sector	Produc- tivity	Output	Hours	Hourly compensation	Real hourly compen- sation	Unit labor costs
	Percer	nt change fro	om precedir	ng quarter		
Business	-0.7	0.9	1.5	4.3	1.8	5.0
Nonfarm business	-0.2	0.8	1.0	4.6	2.2	4.8
Manufacturing	0.7	-2.4	-3.0	5.3	2.9	4.6
Durable	3.4	-1.6	-4.8	6.2	3.7	2.7
Nondurable	-2.5	-2.9	-0.4	4.3	1.9	7.0
	Percer	nt change fro	om same qu	arter a year a	go	
Business	3.8	3.1	-0.6	4.3	2.0	0.5
Nonfarm business	3.8	3.3	-0.6	4.2	1.9	0.3
Manufacturing	4.5	1.3	-3.1	4.9	2.6	0.4
Durable	6.8	2.3	-4.2	5.4	3.1	-1.3
Nondurable	1.7	0.4	-1.3	4.4	2.0	2.6

The data sources and methods used in the preparation of the manufacturing series differ from those used in preparing the business and nonfarm business series, and these measures are not directly comparable. Output measures for business and nonfarm business are based on measures of gross domestic product prepared by the Bureau of Economic Analysis of the U.S. Department of Commerce. Quarterly output measures for manufacturing reflect indexes of industrial production independently prepared by the Board of Governors of the Federal Reserve System. See Technical Notes (page 9) for further information on data sources.

## THIRD-TO-FOURTH QUARTER CHANGES, 2002

#### **Business**

Productivity in the business sector declined by 0.7 percent in the fourth quarter of 2002, reflecting modest increases of 0.9 percent in output and 1.5 percent in hours of all persons (seasonally adjusted annual rates). Although business sector output has increased for five consecutive quarters, this was the first increase in hours since the first quarter of 2001, when they rose 0.4 percent. Revised data for the third quarter of 2002 show that output per hour rose 5.8 percent, reflecting an output increase of 5.3 percent and a decline of 0.5 percent in hours.

Hourly compensation increased 4.3 percent in the fourth quarter of 2002, following a 5.7-percent increase one quarter earlier. This measure includes wages and salaries, supplements, employer contributions to employee-benefit plans, and taxes. Real hourly compensation, which takes into account changes in consumer prices, grew at an annual rate of 1.8 percent during the fourth quarter of 2002. This measure rose 3.8 percent in the third quarter.

The unit labor cost measure, which relates hourly compensation to output, rose 5.0 percent in the fourth quarter. During the third quarter of 2002, unit labor costs were unchanged. The implicit price deflator for business output, which reflects changes in both unit labor costs and unit nonlabor payments, increased 1.5 percent in fourth quarter 2002.

#### **Nonfarm business**

In the nonfarm business sector, productivity declined by 0.2 percent in the fourth quarter of 2002. Output grew 0.8 percent and hours of all persons grew slightly faster, 1.0 percent (seasonally adjusted annual rates). Productivity increased 5.5 percent in the third quarter of 2002 (as revised), when output increased 5.2 percent and hours dropped 0.2 percent (table 2).

Hourly compensation in the nonfarm business sector rose 4.6 percent in the fourth quarter of 2002, down somewhat from the 5.4-percent rise of the third quarter. When the changes in consumer prices were taken into account, real hourly compensation increased 2.2 percent during the fourth quarter of 2002 and 3.4 percent one quarter earlier.

Unit labor costs rose 4.8 percent in the fourth quarter, after falling 0.1 percent in the third quarter of 2002. The implicit price deflator for nonfarm business output increased 1.3 percent in the fourth quarter of 2002, after increasing 0.1 percent one quarter earlier.

## **Manufacturing**

Manufacturing productivity grew 0.7 percent (seasonally adjusted annual rate) in the fourth quarter of 2002 as output fell 2.4 percent and hours fell further, 3.0 percent (table 3). This was the first drop in manufacturing output in a year. Hours of all persons in manufacturing fell in each of the last 10 quarters and have dropped in 16 quarters over the past five years. In the third quarter, total manufacturing productivity increased 5.5 percent (as revised), reflecting a 3.0-percent rise in output and a 2.4-percent decrease in hours. In durable goods manufacturing, productivity rose 3.4 percent in the fourth quarter as output fell 1.6 percent and hours dropped 4.8 percent (table 4). Among nondurable goods manufacturers, productivity dropped 2.5 percent in the fourth quarter as output declined 2.9 percent but hours at work in the sector fell only 0.4 percent (table 5).

Average hourly compensation of manufacturing workers increased 5.3 percent in the fourth quarter of 2002, reflecting increases in hourly compensation of 6.2 percent in durable goods manufacturing and 4.3 percent in nondurable goods manufacturing. When the increase in consumer prices was taken into account, real hourly compensation in total manufacturing rose 2.9 percent.

Unit labor costs for the manufacturing sector rose 4.6 percent in fourth quarter 2002. In durable goods manufacturing, unit labor costs rose 2.7 percent. By contrast, unit labor costs of nondurable goods manufacturers rose 7.0 percent in the fourth quarter of 2002.

## **ANNUAL AVERAGE CHANGES, 2001-2002**

#### Business

Business sector productivity increased 4.7 percent when the annual average for 2002 was compared with the annual average for 2001 (table B). Output increased 2.6 percent and hours of all persons engaged in the sector dropped 2.0 percent. Productivity had increased 1.1 percent in 2001, when output fell 0.2 percent and hours fell 1.3 percent. The 4.7-percent increase in 2002 is larger than the sharp increases of 1992 (3.9 percent) and 1983 (3.6 percent)—each two years following the last two business cycle peaks, when labor productivity frequently shows a rapid rise. In fact, the 4.7-percent increase in 2002 was the largest since 1950, when productivity rose 8.5 percent.

Table B. Annual average ch	Table B. Annual average changes in productivity and related measures, 1993-2002									
Measure	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Business:										
Productivity	0.5	1.3	0.7	2.8	2.3	2.6	2.6	3.0	1.1	4.7
Output	3.1	4.9	3.1	4.4	5.2	4.9	4.7	4.1	-0.2	2.6
Hours	2.6	3.5	2.4	1.6	2.9	2.2	2.0	1.0	-1.3	-2.0
Hourly compensation	2.5	2.0	2.1	3.2	3.1	5.5	4.6	6.8	2.9	2.9
Real hourly compensation	0.0	-0.1	-0.3	0.5	0.9	4.0	2.4	3.4	0.2	1.3
Unit labor costs	1.9	0.7	1.4	0.4	0.8	2.8	1.9	3.7	1.8	-1.7
Nonfarm Business:										
Productivity	0.5	1.3	0.9	2.5	2.0	2.6	2.4	2.9	1.1	4.7
Output	3.3	4.7	3.4	4.3	5.1	5.0	4.6	4.0	-0.1	2.7
Hours	2.9	3.3	2.4	1.7	3.1	2.4	2.2	1.0	-1.2	-2.0
Hourly compensation	2.2	2.1	2.1	3.1	3.0	5.4	4.4	7.0	2.7	2.8
Real hourly compensation	-0.3	0.0	-0.3	0.4	0.8	3.9	2.2	3.5	-0.1	1.2
Unit labor costs	1.7	0.8	1.2	0.5	0.9	2.7	2.0	3.9	1.6	-1.8
Manufacturing:										
Productivity	1.9	3.0	3.8	3.5	4.2	4.9	5.1	4.1	0.8	4.6
Output	3.3	5.3	4.3	3.1	6.0	4.7	4.3	2.5	-4.9	-1.0
Hours	1.4	2.2	0.4	-0.4	1.7	-0.2	-0.8	-1.5	-5.6	-5.4
Hourly compensation	2.7	2.8	2.1	1.4	1.9	5.3	4.0	7.4	1.5	3.8
Real hourly compensation	0.2	0.7	-0.3	-1.3	-0.2	3.9	1.8	3.9	-1.2	2.1
Unit labor costs	0.8	-0.2	-1.7	-2.1	-2.2	0.4	-1.1	3.2	0.8	-0.7

Hourly compensation in the business sector increased 2.9 percent in 2002, the same as the increase in 2001. However, because consumer prices rose less in 2002 than they had in the previous year, real hourly compensation increased more in 2002, 1.3 percent, than it had in 2001, when it rose 0.2 percent. Unit labor costs in the business sector fell 1.7 percent in 2002, the first annual decline in these costs since the early 1960s. (Unit labor costs fell 0.2 percent in 1963, and 0.1 percent in 1962.) The implicit price deflator for the business sector rose 0.4 percent in 2002 and 2.0 percent in 2001.

#### Nonfarm business

Productivity increased 4.7 percent in the nonfarm business sector during 2002, reflecting a 2.7-percent rise in output and a 2.0-percent decline in hours. During 2001, productivity had increased 1.1 percent in nonfarm business, as output dropped 0.1 percent and hours of all persons fell 1.2 percent. As in the larger business sector, the 2002 productivity increase was the largest since 1950, when productivity rose 6.9 percent. It also was higher than the increases of 1992, when nonfarm business productivity rose 3.7 percent, and 1983, when nonfarm business productivity rose 4.5 percent.

In 2002, hourly compensation increased 2.8 percent, similar to the 2.7-percent rise in 2001. When the increase in consumer prices was taken into account, real hourly compensation rose 1.2 percent in 2002 and declined 0.1 percent in the previous year.

Unit labor costs in the nonfarm business sector dropped 1.8 percent in 2002, compared with a 1.6-percent increase in 2001. The last time annual unit labor costs fell in the nonfarm business sector was in 1983, when they dropped 0.2 percent. The implicit price deflator for nonfarm business rose 0.5 percent in 2002, less than it had in 2001, when it rose 1.9 percent.

## **Manufacturing**

In manufacturing, labor productivity rose 4.6 percent in 2002, faster than it had grown in 2001, when it rose 0.8 percent. The 2002 increase occurred as output fell 1.0 percent and hours of all persons fell more sharply, 5.4 percent (table B). There was a 5.7-percent increase in durable goods manufacturing productivity, where output fell 1.4 percent and hours fell 6.6 percent. Nondurable goods manufacturing posted a more modest increase in productivity, 2.8 percent, as output decreased 0.6 percent and hours fell 3.4 percent.

Hourly compensation of manufacturing workers increased 3.8 percent in 2002, more than it increased in 2001, when hourly compensation rose 1.5 percent. In 2002, hourly compensation rose 4.1 percent in durable goods manufacturing and 3.5 percent in nondurable good manufacturing. Taking into account the rise in consumer prices, real hourly compensation in manufacturing rose 2.1 percent in 2002 after falling 1.2 percent one year earlier.

Unit labor costs in manufacturing fell in 2002, by 0.7 percent. This was the first annual drop in unit labor costs since 1999, when they decreased 1.1 percent. Unit labor costs in durable goods manufacturing declined 1.5 percent in 2002, compared with a 0.6-percent rise in unit labor costs in nondurable goods manufacturing.

#### **Revised Measures**

Current and previous measures for the third and second quarters of 2002 for the business, nonfarm business, and manufacturing sectors are compared in table C. In the business and nonfarm business sectors, productivity growth in the third quarter was higher than reported on Dec. 4, due to small upward revisions in output and slightly larger downward revisions to hours. In both sectors, hourly compensation in the third quarter grew more than reported in December. The upward revisions to productivity and hourly compensation nearly offset each other, and movements in unit labor costs were similar to those reported two months ago. In the second quarter of 2002, hourly compensation measures in the business and nonfarm business sectors were revised up by 0.1 percentage-point; unit labor costs in nonfarm businesses were revised up by the same amount.

Table C. Previous and revised productivity and related measures Quarterly percent change at seasonally adjusted annual rate									
Sector	Produc- tivity	Output	Hours	Hourly compensation	Real hourly compen- sation	Unit labor costs			
		Third quart	er 2002						
Business:		1							
Previous	5.4	5.2	-0.2	5.3	3.4	-0.1			
Current	5.8	5.3	-0.5	5.7	3.8	0.0			
Nonfarm business:		- 12	0.00						
Previous	5.1	5.1	0.0	4.9	3.0	-0.2			
Current	5.5	5.2	-0.2	5.4	3.4	-0.1			
Manufacturing:						***			
Previous	5.5	3.2	-2.2	4.4	2.5	-1.0			
Current	5.5	3.0	-2.4	5.6	3.7	0.1			
	9	Second quar	rter 2002						
Business:									
Previous	1.8	0.6	-1.2	4.2	0.8	2.4			
Current	1.8	0.6	-1.2	4.3	0.8	2.4			
Nonfarm business:									
Previous	1.7	0.9	-0.7	3.9	0.5	2.2			
Current	1.7	0.9	-0.7	4.0	0.5	2.3			
Manufacturing:									
Previous	4.2	3.5	-0.7	3.2	-0.2	-1.0			
Current	4.2	3.5	-0.7	5.0	1.5	0.7			

In addition, corrections made to average weekly hours in the BLS Current Employment Statistics (CES) have caused some small revisions to the productivity and hourly compensation series beginning with the first quarter of 2000. (See http://stats.bls.gov/web/cesspec.htm for details of the CES corrections.)

Third-quarter productivity growth in the manufacturing sector was the same as reported on Dec. 4, as downward revisions to output and hours were the same. Hourly compensation grew 5.6 percent in the third quarter, more than the 4.4-percent figure reported in December. As a result, unit labor costs in the manufacturing sector grew 0.1 percent in the third quarter rather than falling 1.0 percent. A larger upward revision to second-quarter hourly compensation also changed the direction of the unit labor cost measure for that quarter. Manufacturing unit labor costs for the second quarter now show an increase of 0.7 percent.

In addition, quarterly measures of productivity, output, and unit labor costs for manufacturing were revised back to first quarter 2001 due to the incorporation of revised indexes of industrial production. The annual measures for 2001 also were affected; annual average productivity was revised to show an increase of 0.8 percent for the year, down from the 0.9-percent figure previously published. The output measures, based on those published by the Board of Governors of the Federal Reserve System, were changed to incorporate additional and revised source data, updated information on seasonal trends, and some improvements in measurement of real output. (See Federal Reserve statistical release G.17 (419), "Industrial Production and Capacity Utilization," Dec. 5, 2002.)

Although the Federal Reserve has revised and reclassified its indexes of industrial production (IIP) back to 1972, the Bureau of Labor Statistics has not yet incorporated these changes into its historical quarterly measures for years before 2001. Later in 2003, the BLS intends to adopt the 2002 North American Industry Classification System (NAICS) for its major sector productivity measures. At that time, the updated information from the IIP will be incorporated into the quarterly measures. Persons wishing information on the methods used to extend the output measures on the 1987 Standard Industrial Classification (SIC) basis beginning with first quarter 2001 may contact the Division of Major Sector Productivity at 202-691-5606 or email their question to dprweb@bls.gov.

## **Revised measures: Nonfinancial Corporations**

Revised productivity and output measures for the third and second quarters for nonfinancial corporations also were announced today. In the third quarter, output and productivity increased less and hours fell more than reported on Dec. 4. Hourly compensation was revised up. This, combined with the downward revision to productivity, led to a rise in unit labor costs (table D). There was a small upward revision to hourly compensation data in the second quarter 2002.

Table D. Nonfinancial corporations: Previous and revised productivity and cost measures  Quarterly percent changes at seasonally adjusted annual rates										
	Produc- tivity	Output	Hours	Hourly compensation	Real hourly compen- sation	Unit labor costs	Unit profits	Implicit price deflator		
			Third q	uarter 2002						
Previous	5.7	4.3	-1.3	5.7	3.7	0.0	-10.4	-0.6		
Current	5.5	3.8	-1.6	6.1	4.2	0.6	-13.0	-0.5		
Second quarter 2002										
Previous	5.8	5.2	-0.5	4.4	1.0	-1.3	0.9	-0.3		
Current	5.8	5.3	-0.5	4.5	1.0	-1.3	0.9	-0.3		

#### Next release date

The next release of **Productivity and Costs** is scheduled for **8:30 A.M. EST, Thursday, March 6, 2003**. Revised fourth-quarter and annual average measures for business, nonfarm business, and manufacturing will be released at that time.

#### Upcoming change to productivity and cost data

The Bureau of Labor Statistics discontinued the Hours at Work Survey (HWS), used to adjust the paid hours of wage and salary employees to their hours at the workplace, following the 2000 survey. The survey will be replaced with a comparable set of measures derived from information on scheduled hours of work and paid leave collected from employers participating in the National Compensation Survey.

The new ratios of hours worked to hours paid will be incorporated into the measures of employee hours beginning with the release of the second quarter 2003 data on Aug. 7. These ratios will be adjusted to levels from the HWS and will cover the period following 2000.

#### **TECHNICAL NOTES**

Labor Hours: Hours data for the labor productivity and cost measures include hours 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. The CES also provides average weekly paid hours of production and nonsupervisory workers in these establishments. The Office of Productivity and Technology estimates average weekly paid hours of nonproduction and supervisory workers. Weekly paid hours are adjusted to hours at work using the BLS Hours at Work survey, conducted for this purpose.

Data from the BLS Current Population Survey (CPS) are used for farm labor; in the nonfarm sector, the National Income and Product Accounts (NIPA) prepared by the Bureau of Economic Analysis (BEA) of the Department of Commerce and the CPS are used to measure labor input for government enterprises, proprietors, and unpaid family workers.

**Output:** Business sector output is an annual-weighted index constructed after excluding from gross domestic product (GDP) the following outputs: General government, nonprofit institutions, paid employees of private households, and the rental value of owner-occupied dwellings. Corresponding exclusions also are made in labor inputs. Business output accounted for about 77 percent of the value of GDP in 1996. Nonfarm business, which also excludes farming, accounted for about 76 percent of GDP in 1996.

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 BEA. These deflators are based on data from the BLS producer price program and other sources. The industry shipments are aggregated using annual weights, intrasector transactions are removed. Ouarterly manufacturing output measures are based on the index 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. Durables include the following 2-digit SIC industries: Primary industries; fabricated metal products; nonelectrical machinery; industrial commercial machinery and computer equipment; electronic and other electrical equipment; transportation equipment; instruments; lumber and lumber products; furniture and fixtures; stone, clay, and glass and concrete products; and miscellaneous manufactures. **Nondurables** include: Food and kindred products, tobacco products, textile mill products, apparel products, paper and allied products, printing and publishing, chemicals and chemical products, petroleum refining and related industries, rubber and plastic products, and leather and leather products.

Nonfinancial corporate output 1S annual-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; employees of private households; the rental value of owner-occupied dwellings; unincorporated business; and those corporations which are depository institutions, nondepository institutions, security commodity brokers, insurance carriers, regulated investment offices, small business investment and real estate investment trusts. Nonfinancial corporations accounted for about 53 percent of the value of GDP in 1996.

**Productivity:** These productivity measures describe the relationship between real output and the labor time involved in its production. They show the changes from period to period in the amount of goods and services produced per hour. Although these measures relate output to hours at work of all persons engaged in a sector, they do not measure the specific contribution of labor, capital, or any other factor of production. Rather, they reflect the joint effects of many influences, including changes in technology; 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.

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: Productivity, hourly compensation, unit labor costs, and prices, seasonally adjusted  $\ensuremath{\mathsf{N}}$ 

an qu	arter	Output per hour of all persons	Output	persons	hour (1)	hour (2)	costs	ments (3)	Implicit price deflator (4)
		<del>_</del>			xes 1992=100				
2000	I II III		138.4 140.3 140.4	120.1 119.7 119.7	131.4 132.4 135.0	110.5 110.5 111.7	114.0 113.0 115.1	110.7 114.1 111.2	112.8 113.4 113.7
	IV								
0001	ANNUAL								
2001	IV III I	117.9	140.4 139.4 139.1 140.3	119.5 118.7 117.9 116.8	137.3 137.5 137.8 138.3	111.8 111.0 111.1 111.6	116.9 117.1 116.8 115.1	112.3 113.6 115.5 117.2	115.2 115.8 116.4 115.9
	ANNUAL	118.2	139.8	118.2	137.7	111.4	116.5	114.7	115.8
2002	I III IV	122.5 123.1 r124.8 124.6	142.3 142.5 r144.4 144.7	116.1 115.8 r115.6 116.1	139.3 140.8 r142.7 144.2	112.0 112.2 r113.3 113.8	113.7 114.4 114.3 115.7	119.9 119.3 119.7 118.5	116.0 116.2 116.3 116.7
	ANNUAL	123.8	143.5	115.9	141.8	112.8	114.5	119.4	116.3
		Perce			ious quarter				
2000		0.3	2.2	1.9	14.7	10.3	14.4	-15.1	
	II IV	6.7 0.4 2.1	5.4 0.4 0.9	-1.2 0.0 -1.2	3.0 8.3 3.7	r0.1 4.6 0.7	-3.5 7.8 1.6	12.9 -9.6 2.6	2.2 1.1 1.9
	ANNUAL	3.0	4.1	1.0	6.8	3.4	3.7	-1.7	1.7
2001	I II IV	-1.5 -0.2 1.8 7.6	-1.0 -2.8 -0.9 3.5	0.4 -2.6 -2.6 r-3.8	3.1 0.5 0.9 1.4	-0.6 -2.6 0.2 1.7	4.7 0.7 -0.9 -5.8	1.1 4.9 6.8 6.1	2.2 1.8
	ANNUAL								2.0
2002	I II III IV ANNUAL	1.8 r5.8 -0.7	0.6 r5.3 0.9	-1.2 r-0.5 1.5	r4.3 r5.7 4.3	0.8 r3.8 1.8	2.4 r0.0 5.0	r9.5 r-2.1 1.3 -4.0	0.7 r0.5 1.5
		Percen			sponding qua				
2000	I II IV	4.1 3.3	4.6 5.4 4.1 2.2	0.7	5.9 6.5 7.7 7.3	3.1 4.1	3.5 2.3 4.3 4.9	0.8 -2.5	1.4 1.7 1.7
	ANNUAL	3.0	4.1	1.0	6.8	3.4	3.7	-1.7	1.7
2001	I II III IV	0.2 0.5	1.4 -0.7 -1.0 -0.3	-0.9 -1.5	4.5 3.9 2.0 1.5	0.5 -0.6	2.6 3.6 1.5 -0.4	-0.4 3.8	2.2 2.1 2.3 1.4
	ANNUAL	1.1	-0.2	-1.3	2.9	0.2	1.8	2.4	2.0
2002	II III IV	4.8 r5.9	1.4 2.3 3.8 3.1	-2.5 -1.9		0.2 1.1 r2.0 2.0		5.0 3.6	0.7 0.3 0.0 0.7
	ANNUAL	4.7	2.6	-2.0	2.9	1.3	-1.7	4.1	0.4

\_\_\_\_\_\_ See footnotes following Table 6. r=revised

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

an	arter	Output per hour of all persons	Output	persons	hour (1)	hour (2)	labor costs		price
		<del>_</del>			xes 1992=100				
2000	II III IV	116.4 116.6	140.5 140.6		131.5 134.3	110.0 109.8 111.1 111.2	113.0 115.2	115.6	113.9 114.3
	ANNUAL	116.2	140.2	120.6	133.0	110.6	114.4	113.5	114.1
2001	II III IV	116.6 117.2	139.7 139.4	119.8 118.9	136.3 136.7	110.9 110.1 110.2 110.7	116.9 116.6	117.2	116.3 116.8
	ANNUAL	117.5	140.1	119.2	136.6	110.5	116.3	116.4	116.3
2002	II III	121.8 122.3 r123.9 123.9	142.5 142.9 144.7 145.0	117.0 116.8 116.8 117.0	r138.1 139.5 r141.3 142.9	111.1 111.2 r112.2 112.8	113.4 r114.1 114.0 115.4	121.7 121.7 r121.8 120.6	116.4 116.8 116.9 117.3
	ANNUAL	123.0	143.8	116.9	140.5	111.8	114.2	121.5	116.9
						at annual r			
2000	II III IV	0.2 6.0 0.6 1.7	1.9 5.4 0.2 1.1	1.7 -0.6 -0.4 -0.6	15.2 2.2 8.7 3.1	10.7 -0.7 4.9 0.2	14.9 -3.6 8.0 1.4	-15.3 12.2 -9.1 2.1	2.7 1.9 1.4 1.6
	ANNUAL	2.9	4.0	1.0	7.0	3.5	3.9	-1.7	1.8
2001	II III IV	-0.1 2.1	-2.7 -0.8	0.5 -2.6 -2.9 r-4.0	2.8 0.1 1.0 1.5	-0.9 -2.9 0.3 1.8	4.3 0.3 -1.1 -5.4	5.1 6.8	1.7
	ANNUAL	1.1	-0.1	-1.2	2.7	-0.1	1.6	2.5	1.9
2002	IV III I	1.7 r5.5	0.9 r5.2	0.7	r4.0 r5.4	r1.5 0.5 r3.4 2.2	r2.3	8.8 0.1 0.4 -4.1	1.4 0.1
	ANNUAL	4.7	2.7	-2.0	2.8	1.2	-1.8	4.4	0.5
		Percer				rter of prev			
2000	II III IV	4.0 3.3	4.5 5.4 3.9 2.2	2.1 1.3 r0.7 0.0	6.2 6.6 7.9 7.2	2.8 3.2 4.3 3.7	3.7 2.5 4.5 4.9		1.7 1.8 1.8
	ANNUAL	2.9	4.0	1.0	7.0	3.5	3.9	-1.7	1.8
2001	III III IV	0.2 r0.6	1.4 -0.6 -0.8 -0.4	-1.4	4.2 r3.7 1.8 1.4	0.9 0.3 -0.8 -0.4	2.4 3.5 1.2 -0.5	1.4 -0.3 r3.8 5.1	2.1 2.1 2.2 1.5
	ANNUAL	1.1	-0.1	-1.2	2.7	-0.1	1.6	2.5	1.9
2002	IV III I	4.9 r5.7	1.3 2.3 3.8 3.3	-2.9 -2.5 -1.8 -0.6	1.4 2.3 r3.4 4.2	0.1 1.0 r1.8 1.9	-2.9 -2.4 -2.2 0.3	6.9 5.6 4.0 1.2	0.6 0.5 0.1 0.7
	ANNUAL	4.7	2.7	-2.0	2.8	1.2	-1.8	4.4	0.5

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See footnotes following Table 6. r=revised

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

	nally adjus					Real	
	Year and quarter	Output per hour of all persons	Output		Compensa- tion per hour (1)	compensa- tion per hour (2)	labor
		all persons		ndexes 1992=1			
2000	I	133.6	138.3	103.5	131.4	110.5	98.4
	II III	134.9 135.4	139.8 139.3	103.6 102.9	129.3 132.2	107.9 109.4	95.9 97.7
	IV	135.9	137.6	101.3	131.5	108.0	96.7
	ANNUAL	134.9	138.7	102.8	131.1	109.0	97.2
2001	I	r135.2		99.8	132.0	107.4	r97.6
	II III	r135.2 r136.2	r132.8 r131.1	98.2 96.3	133.0 133.3	107.4 107.5	r98.4 r97.9
	IV	r137.5	r129.1	93.9	134.3	108.3	r97.7
	ANNUAL	r136.0	r132.0	97.1	133.1	107.7	r97.9
2002	I	r140.1			135.6		r96.8
	II III	r141.5 r143.4	r130.6 r131.6	92.3 r91.7	r137.2 r139.1	r109.4 r110.4	r96.9 r97.0
	IV	143.7	130.8	91.0	140.9	111.2	98.1
	ANNUAL	142.2	130.6	91.9	138.2	110.0	97.2
		Percent ch			er at annual ra		
2000	I	4.5	2.7	-1.7	25.3	20.5	
	II III	3.8 1.6	4.4 -1.3	0.5 -2.8	-6.3 9.5	-9.0 5.8	-9.7 7.8
	IV	1.6	-4.8	-6.3	-2.3	-5.1	-3.8
	ANNUAL	4.1	2.5	-1.5	7.4	3.9	3.2
2001		r-2.1	r-7.6	-5.6	1.6	-2.1	r3.7
	II III	0.0 r3.0	-6.2 -4.9	-6.2 -7.6	3.1 1.0	-0.1 0.3	3.1 -1.9
	IV	r3.9	r-6.1	-9.7	2.9	3.2	r-1.0
	ANNUAL	r0.8	r-4.9	-5.6	1.5	-1.2	r0.8
2002	I	r7.8	r1.2	-6.1	3.8	2.4	r-3.7
	II III	4.2 5.5	3.5 r3.0	-0.7 r-2.4	r5.0 r5.6	r1.5 r3.7	r0.7 r0.1
	IV	0.7	-2.4	-3.0	5.3	2.9	4.6
	ANNUAL	4.6	-1.0	-5.4	3.8	2.1	-0.7
					ter of previous	year	
2000	I	4.4	3.6	-0.8	8.9	5.5	4.3
	II III	4.7 4.3	3.8 2.6	-0.8 -1.7	6.9 7.9	3.5 4.3	2.1
	IV	2.9	0.2	-2.6	5.9	2.4	2.9
	ANNUAL	4.1	2.5	-1.5	7.4	3.9	3.2
2001	I	r1.2	r-2.4	-3.6	0.5	-2.7	r-0.7
	II III	r0.2 r0.6	r-5.0 r-5.9	-5.2 -6.4	2.9 0.8	-0.5 -1.8	r2.6 r0.2
	IV	r1.2	r-6.2	-7.3	2.1	0.3	r1.0
	ANNUAL	r0.8	r-4.9	-5.6	1.5	-1.2	r0.8
2002	I	r3.6	r-4.0	-7.4	2.7	1.4	r-0.9
	II III	r4.7 r5.3	r-1.7 r0.3	-6.1 r-4.8	r3.2 r4.3	r1.8 r2.7	r-1.5 r-1.0
	IV	4.5	1.3	-3.1	4.9	2.6	0.4
	ANNUAL	4.6	-1.0	-5.4	3.8	2.1	-0.7

See footnotes following Table 6. r=revised

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

	Year and	Output per hour of		Hours of all	Compensa- tion per	Real compensa- tion per	Unit labor
	quarter	all persons	Output	persons	hour (1)	hour (2)	costs
			Ir	ndexes 1992=10	00		
2000	I	148.6	162.9	109.7	130.8	109.9	88.0
	II III	150.0 150.3	165.2 164.6	110.2 109.5	127.5 130.6	106.4 108.0	85.0 86.9
	IV	150.1	162.0	107.9	128.4	105.5	85.5
	ANNUAL	149.7	163.7	109.3	129.3	107.5	86.4
2001	I	r149.3	r158.3	106.0	129.4	105.3	r86.7
	II III	r148.8 r149.6	r154.9 r151.8	104.1 101.4	130.5 130.2	105.4 105.0	r87.7 r87.0
	IV	r151.0	148.6	98.5	131.8	106.3	87.3
	ANNUAL	r149.6	r153.4	102.5	130.4	105.5	r87.2
2002	I	r154.7	r149.4	96.5	132.7	106.7	r85.8
	II III	r156.8 r159.8	r151.2 r152.6	96.4 95.5	r134.8 r136.9	r107.5 r108.6	r86.0 r85.6
	IV	161.2	152.0	94.3	138.9	109.6	86.2
	ANNUAL	158.1	151.3	95.7	135.8	108.1	85.9
		Percent ch		evious quarte	er at annual ra	te(5)	
2000	I	7.6	6.3	-1.2	29.7	24.6	20.5
	II	3.9	5.8	1.8	-9.6	-12.1	-13.0
	III V	0.8 -0.6	-1.6 -6.2	-2.3 -5.7	9.9 -6.5	6.1 -9.2	9.1 -6.0
	ANNUAL	4.4	3.6	-0.7	7.7	4.2	3.2
2001	I	r-2.1	r-8.9	-6.9	3.1	-0.6	r5.3
	II	r-1.4	r-8.2	-6.9	3.6	0.4	r5.1
	III	r2.4 r3.5	r-7.9 r-8.0	-10.0 -11.2	-1.0 5.0	-1.7 5.4	r-3.3 r1.5
	ANNUAL	r-0.1	r-6.3	-6.2	0.9	-1.9	r0.9
2002	I	r10.4	r2.1	-7.5	2.8	1.3	r-6.9
	II	r5.5	r4.9	-0.5	r6.7	r3.1	r1.1
	III	r7.9 3.4	r3.8 -1.6	r-3.8 -4.8	r6.1 6.2	r4.2 3.7	r-1.7 2.7
	ANNUAL	5.7	-1.4	-6.6	4.1	2.5	-1.5
		Percent change			 ter of previous		
2000	I	5.2	5.1	-0.1	10.5	7.0	5.0
2000	II	5.1	5.3	0.2	7.4	4.0	2.2
	III V	4.3 2.9	3.2 1.0	-1.1 -1.9	8.1 4.8	4.5 1.4	3.6 1.8
	ANNUAL	4.4	3.6	-0.7	7.7	4.2	3.2
2001	I	r0.5	r-2.9	-3.3	-1.1	-4.2	r-1.6
2001	II	r-0.8	r-6.3	-5.5	2.3	-1.0	r3.2
	III	r-0.4 0.6	r-7.8 -8.2	-7.4 -8.8	-0.3 2.6	-2.8 0.8	r0.1 2.1
	ANNUAL	r-0.1	r-6.3	-6.2	0.9	-1.9	r0.9
2002	I	r3.6	r-5.6	-8.9	2.6	1.3	r-1.0
	II	r5.4	r-2.4	-7.4 ~ 5.0	r3.3	r2.0	r-2.0
	III IV	r6.8 6.8	r0.5 2.3	r-5.9 -4.2	r5.1 5.4	r3.5 3.1	r-1.6 -1.3
	ANNUAL	5.7	-1.4	-6.6	4.1	2.5	-1.5

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See footnotes following Table 6. r=revised

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

	Year	Output per hour of	Outro	Hours of all	Compensa- tion per	Real compensa- tion per	Unit labor
	quarter 	all persons		persons	hour (1)	hour (2)	costs
			Ιr	ndexes 1992=10	00		
2000	I	120.6	114.9	95.3	130.6	109.8	108.3
	II III	121.8 122.6	115.6 115.4	95.0 94.1	130.4 133.2	108.9 110.2	107.1 108.7
	IV	123.9	114.5	92.4	135.0	110.9	108.9
	ANNUAL	122.2	115.1	94.2	132.3	110.0	108.3
2001	I	r123.1	r112.7	91.6	134.7	109.7	r109.4
	II	123.6	111.7	90.4	135.5	109.4	r109.7
	III V	r124.3 r125.5	111.3 r110.1	89.5 87.8	137.2 137.1	110.6 110.6	110.3 r109.2
	ANNUAL	r124.1	r111.5	89.8	136.1	110.1	r109.7
2002	I II	r126.8 r127.7	r110.2 r110.8	86.9 86.7	139.1 r139.8	111.8 r111.5	r109.7 109.5
	III	r128.4	r111.4	86.7	r141.5	r112.3	r110.2
	VI	127.6	110.6	86.6	143.0	112.8	112.1
	ANNUAL	127.6	110.7	86.8	140.8	112.1	110.3
					er at annual ra		
2000	I	0.8	-1.8	-2.5	17.8	13.3	17.0
	II	3.8	2.4	-1.4	-0.5	-3.4	-4.2
	III	2.6 4.6	-0.9 -3.0	-3.5 -7.2	8.7 5.6	4.9 2.5	5.9 0.9
	ANNUAL	3.8	1.1	-2.6	6.7	3.3	2.9
0001							
2001	I II	r-2.5 r1.3	r-6.0 r-3.8	-3.6 -5.0	-0.8 2.3	-4.4 -0.8	r1.8 r0.9
	III	r2.6	r-1.4	-3.8	5.1	4.4	r2.4
	IV	r3.6	r-4.0	-7.4	-0.3	0.0	r-3.8
	ANNUAL	r1.6	r-3.2	-4.7	2.9	0.1	r1.3
2002	I	r4.3	r0.3	-3.9	6.0	4.5	r1.6
	II	r2.9	r1.9	-0.9	r2.2	r-1.2	r-0.7
	III	r2.4 -2.5	r2.3 -2.9	-0.1 -0.4	r5.0 4.3	r3.1 1.9	r2.6 7.0
	ANNUAL	2.8	-0.6	-3.4	3.5	1.8	0.6
		Percent change	from corres	sponding quar	ter of previous	-	
2000	I II	3.4 4.4	1.6 1.8	-1.8 -2.5	6.1 5.8	2.8 2.5	2.6 1.4
	III	4.4	1.7	-2.5	7.4	3.8	2.9
	VI	2.9	-0.8	-3.7	7.7	4.2	4.6
	ANNUAL	3.8	1.1	-2.6	6.7	3.3	2.9
2001	I	r2.1	r-1.9	-3.9	3.1	-0.1	r1.0
	II III	1.5 1.5	-3.4 -3.5	-4.8 -4.9	3.9 3.0	0.5 0.4	r2.4 1.5
	IV	r1.2	r-3.8	-5.0	1.5	-0.3	r0.3
	ANNUAL	r1.6	r-3.2	-4.7	2.9	0.1	r1.3
2002	I	r3.0	r-2.2	-5.0	3.2	2.0	r0.2
-	II	r3.4	r-0.8	-4.0	r3.2	r1.9	r-0.2
	III IV	r3.3 1.7	r0.1 0.4	-3.1 -1.3	r3.2 4.4	r1.6 2.0	r-0.1 2.6
	ANNUAL	2.8	-0.6	-3.4	3.5	1.8	0.6

See footnotes following Table 6. r=revised

Table 6. Nonfinancial corporations: Productivity, hourly compensation, unit labor costs, unit profits, and prices, seasonally adjusted

ā	lear and quarter	Output per all- employee hour	Output	Employee hours	compen-		labor	Unit non- labor costs(6)	costs	pro-	Implicit price deflator (4)
Indexes 1992=100											
2000	I II IV	r117.7 118.3 119.5 119.5	147.3 147.9 149.4 149.2	125.1 125.0 125.0 124.8	126.9 127.8 130.4 131.7	106.7 106.6 107.9 108.2	107.8 108.0 109.1 110.2	104.5 106.3 107.1 108.9	106.9 107.5 108.6 109.8	119.5 118.8 109.5 98.6	108.5 108.6
	ANNUAL	118.8	148.4	125.0	129.2	107.4	108.8	106.7	108.2	111.6	108.5
2001	I II IV	118.8 119.4 120.4 123.5	147.9 147.8 147.7 149.6	124.6 123.7 122.7 121.2	131.3 131.9 132.7 133.6	106.9 106.5 107.0 107.8	110.6 110.4 110.3 108.2	111.6 113.5 115.5 114.1	110.8 111.3 111.7 109.8	93.1 95.4 97.9 107.6	109.9 110.5
	ANNUAL	120.5	148.2	123.0	132.4	107.0	109.9	113.7	110.9	98.5	109.8
2002	II III		150.8 152.8 r154.2	120.8 120.6 r120.1	134.7 136.2 r138.2	108.3 108.6 r109.7		114.0 114.5 114.8	109.5 109.4 r109.6	107.6 107.8 r104.1	109.3
	Percent change from previous quarter at annual rate(5)										
2000	I II III IV	7.1 2.0 r4.0 0.1	9.5 1.6 4.0 -0.4	2.3 -0.4 0.0 -0.5	14.2 2.8 8.5 4.1	9.8 -0.1 4.7 1.1	6.7 0.8 4.2 4.0	-0.4 7.0 3.0 6.9	4.7 2.4 3.9 4.8	-19.0 -2.2 -27.8 -34.5	2.0 0.6
	ANNUAL	3.5	5.0	1.5	6.7	3.2	3.1	3.3	3.1	-15.2	1.2
2001	I II IV	2.2 3.2	-3.3 -0.5 -0.3 5.4	-0.7 -2.7 -3.4 -4.8	-1.2 1.8 2.5 r2.6	-4.8 -1.3 1.9 r2.9	-0.4 -0.6	10.1 7.1 7.2 -4.9	1.6 1.5	-20.2 10.0 10.8 46.1	2.2 2.2
	ANNUAL	1.4	-0.1	-1.5	2.5	-0.3	1.0	6.5	2.5	-11.7	1.2
2002	I II III	r4.7 5.8 r5.5	3.3 r5.3 r3.8	-0.5	r3.5 r4.5 r6.1	2.0 1.0 r4.2	-1.3 r0.6	1.7	-0.5 r0.7		-0.3
			Percent	change fr	om corres	ponding quar	ter of p	revious ye	ar		
2000	I II III IV ANNUAL	3.0 3.5 4.2 3.3	5.7 5.4 5.4 3.6	2.6 1.9 1.2 0.3	5.6 r6.1 7.6 7.3	2.3 2.8 4.0 3.8	2.5 2.6 3.3 3.9	2.9 3.5 2.5 4.1	2.6 2.8 3.1 4.0	-12.9 -12.4 -14.2 -21.8	1.2 1.3 1.4
2001	I II III IV ANNUAL	0.9	0.4 -0.1 -1.1 0.3	-0.4 -1.0 -1.8 -2.9	3.5 3.2 1.8 1.4	0.2 -0.1 -0.8 -0.4	2.6 2.3 1.1 -1.8	6.7 6.8 7.8 4.7	3.7 3.5 2.9 0.0	-22.0 -19.7 -10.6 9.2	1.3 1.7 0.7
2002	I II III		1.9 3.4 r4.4	-2.5 r-2.1	2.6 3.3 r4.2	1.4 1.9 r2.5	-2.4 -2.6 r-2.3	2.2 0.9 -0.6 	-1.2 -1.7 r-1.9	15.5 13.0 r6.4	-0.6

See footnotes following Table 6. r=revised

**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. Compensation and hours 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 +1.7 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 2002.

### Footnotes, Tables 1-6

- (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 1978-2001 is based on the Consumer Price Index research series (CPI-U-RS).
- (3) Unit nonlabor payments include profits, capital consumption allowances, interest, rental income of persons, and indirect taxes.
- (4) Current dollar output divided by the output index.
- (5) Quarterly changes: Percent change compounded at annual rate from the original data rather than index numbers. Annual changes: Percent change between annual average levels.
- (6) Unit nonlabor costs include capital consumption allowances, interest, rental income of persons, and indirect taxes. For nonfinancial corporations, rental income of persons is zero by definition.
- (7) Total unit costs are the sum of unit labor and nonlabor costs.
- (8) Unit profits include corporate profits with inventory valuation and capital consumption adjustments.