

# News

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## PRODUCTIVITY AND COSTS Third Quarter 1990

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 third quarter of 1990. The data show that productivity advanced moderately in business and nonfarm business, while manufacturing showed a much larger increase. This pattern of faster productivity gains in manufacturing has occurred frequently in the past. The preliminary seasonally adjusted annual rates of productivity change in the third quarter were:

- 1.9 percent in the business sector,
- 1.6 percent in the nonfarm business sector,
- 5.6 percent in manufacturing,
- 7.3 percent in durable goods manufacturing, and
- 2.9 percent in nondurable goods manufacturing.

Third-quarter measures are summarized in table A and appear in detail in tables 1 through 5.

### Business

Productivity increased at a 1.9 percent annual rate during the third quarter of 1990 in the business sector, as output rose 1.5 percent and hours of all persons engaged in the sector decreased 0.4 percent (seasonally adjusted annual rates). This was the largest increase in business productivity since the third quarter of 1988 (when a 2.5 percent gain occurred). The hours decrease partly reflects a decline in farming during the July-September period. During the second quarter of 1990, productivity had increased 0.6 percent (table 1). In the third quarter of 1990, business employment fell 0.1 percent, the first employment decline since 1982, and average weekly hours decreased 0.3 percent. The length of the average work week has declined for the past 4 quarters.

These productivity and cost series are based on revised measures of labor input which reflect: Benchmarking of employment levels collected in the regular monthly BLS Current Employment Survey sample to March 1989 Unemployment Insurance levels, results of the 1989 Hours at Work Survey, the adoption of the 1987 Standard Industrial Classification (SIC), and new seasonal factors which take account of both the new SIC and benchmarks. Historical measures are available from the Office of Productivity and Technology, Division of Productivity Research, telephone (202) 523-9261, and on the BLS Major Sector Labor and Multifactor Productivity Data Diskette. Diskette ordering information is given on page 19.

Table A. Productivity and costs: Third-quarter 1990 measures  
(Seasonally adjusted annual rates)

Sector	Productivity	Output	Hours	Hourly compensation	Real hourly compensation	Unit labor costs
Percent change from preceding quarter						
Business	1.9	1.5	-0.4	4.4	-1.9	2.5
Nonfarm business	1.6	1.5	-0.1	4.5	-1.8	2.8
Manufacturing	5.6	3.6	-1.9	3.7	-2.6	-1.7
Durable	7.3	4.2	-2.9	4.3	-2.0	-2.8
Nondurable	2.9	2.5	-0.4	3.0	-3.2	0.1
Percent change from same quarter a year ago						
Business	-0.2	0.6	0.7	4.1	-1.4	4.3
Nonfarm business	-0.5	0.5	1.0	3.9	-1.5	4.4
Manufacturing	4.0	2.1	-1.9	3.3	-2.1	-0.7
Durable	4.6	2.2	-2.4	3.0	-2.4	-1.5
Nondurable	3.1	1.9	-1.1	3.8	-1.6	0.7

Hourly compensation increased at a 4.4 percent annual rate during the third quarter of 1990, compared with a 5.4 percent gain during the previous quarter. This measure includes wages and salaries, supplements, employer contributions to employee-benefit plans, and taxes. Unit labor costs, which reflect changes in hourly compensation and productivity, increased at a 2.5 percent annual rate during the third quarter, compared with a 4.7 percent increase during the second quarter.

Real hourly compensation, which takes into account changes in the Consumer Price Index for All Urban Consumers (CPI-U), decreased at a 1.9 percent annual rate during the third quarter, marking the seventh decline in the last 8 quarters. During the second quarter of 1990, it had increased at a 1.6 percent annual rate. With the third quarter decline, real hourly compensation stood at 101.7 (1982=100), the same as in 1976.

The implicit price deflator for business output, which reflects changes in unit labor costs and unit nonlabor payments, increased 2.8 percent in the third quarter, compared with 4.6 percent increases in both the first and second quarters.

### Nonfarm business

Productivity increased at a 1.6 percent annual rate in the nonfarm business sector during the third quarter of 1990, as output rose 1.5 percent and hours of all persons--employees, proprietors, and unpaid family workers--decreased 0.1 percent. During the second quarter of 1990, productivity had increased 0.3 percent in this sector. Quarterly output gains have been fairly steady during 1990, while hours have slowed in this sector (table 2). The third-quarter drop in hours was the first since the second quarter of 1986 (when hours fell 0.8 percent).

Hourly compensation increased 4.5 percent in the third quarter, but was down 1.8 percent when the increase in the CPI-U was taken into account. During the second quarter, the comparable changes were 5.0 percent and 1.2 percent, respectively. As in the more comprehensive business sector, the third-quarter decline in real hourly compensation was the seventh in the past 8 quarters. Unit labor costs increased 2.8 percent, compared with a 4.7 percent rise during the second quarter of 1990.

The implicit price deflator for nonfarm business output rose 3.0 percent in the third quarter, compared with a 4.8 percent increase one quarter earlier.

### Manufacturing

Productivity grew more rapidly in manufacturing than in the more comprehensive business and nonfarm business sectors. Output per hour of all persons--labor productivity--increased at a 5.6 percent seasonally adjusted annual rate in manufacturing in the third quarter of 1990, compared with a 3.1 percent gain during the second quarter. The third-quarter gain was the largest since 1987 (when it grew 6.5 percent in the second quarter). In the third quarter of 1990, output increased 3.6 percent and hours of all persons decreased 1.9 percent. Manufacturing hours have declined in 6 of the past 8 quarters. Productivity gains were larger among durable goods producers, as output increased more rapidly while hours declined more than in nondurables.

Hourly compensation of all manufacturing workers increased 3.7 percent during the third quarter, compared with a 4.7 percent rise during the second quarter. Real hourly compensation fell 2.6 percent in the third quarter when the increase in consumer prices was taken into account. Unit labor costs declined at a 1.7 percent annual rate in the third quarter, compared with a 1.6 percent increase during the second quarter of 1990.

### Revised measures

Previous and revised productivity and cost measures for the second quarter are compared in table B for business, nonfarm business, manufacturing, and nonfinancial corporations. The revised movements are based on more complete information than was available on September 6 when the previous values were announced.

**Table B. Previous and revised productivity and related measures,  
second-quarter 1990  
Quarterly percent change at seasonally adjusted annual rate**

Sector	Productivity	Output	Hours	Hourly compensation	Real hourly compensation	Unit labor costs
<b>Business:</b>						
Previous	1.7	1.4	-0.3	6.1	2.4	4.4
Current	0.6	1.2	0.5	5.4	1.6	4.7
<b>Nonfarm business:</b>						
Previous	1.5	1.5	0.0	5.8	2.0	4.3
Current	0.3	1.2	0.9	5.0	1.2	4.7
<b>Manufacturing:</b>						
Previous	4.0	4.0	0.1	6.3	2.5	2.2
Current	3.1	4.3	1.2	4.7	1.0	1.6
<b>Nonfinancial corporations:</b>						
Previous	1.7	1.6	-0.1	5.9	2.1	4.2
Current	1.9	2.8	0.9	6.6	2.8	4.6

In addition, appendix tables 1-6 show revisions in hours which reflect the incorporation of four changes in the labor input series: The incorporation of the 1987 benchmark to Unemployment Insurance levels, the adoption of the 1987 Standard Industrial Classification of Industries, the results of the 1989 Hours at Work Survey, and the adoption of new seasonal factors for the new monthly employment levels. Also affected are series which depend on the hours measure--productivity, hourly compensation, real hourly compensation, and, to a lesser extent, unit labor costs and unit nonlabor payments. The Bureau of Economic Analysis of the U.S. Department of Commerce recently noted that compensation of employees for 1988 was slightly misstated because the year contained 53 Fridays, which is the most common payday. Accordingly, 1988 compensation levels have been revised downward by 0.6 percent.

**Next release date**

The next release of productivity and cost measures is scheduled for 10:00 AM EST, Wednesday, December 5, 1990. Third-quarter measures for nonfinancial corporations will be released at that time.

## TECHNICAL NOTES

**Labor Input:** The primary source of hours and employment data is the BLS Current Employment Statistics (CES) program, which provides monthly survey data on total employment and average weekly hours of production and nonsupervisory workers in nonagricultural establishments. Jobs rather than persons are counted. Weekly hours are adjusted to the hours at work definition 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 of the Department of Commerce and the CPS are used to measure labor input for government enterprises, proprietors, unpaid family workers, and paid employees of private households.

**Output:** Business sector output is equal to gross national product (GNP) in constant 1982 dollars, less the rest-of-the-world sector, general government, output of nonprofit institutions, output of paid employees of private households, rental value of owner-occupied dwellings, and the statistical discrepancy in computing the NIPA. Corresponding exclusions also are made in labor inputs. Business output was about 81 percent of GNP in 1989. Nonfarm business, which also excludes farming, was about 79 percent of GNP in 1989.

Total manufacturing measures are computed by summing series prepared for the durable and nondurable goods sectors. Durables include the following 2-digit SIC industries: Primary metals; fabricated metal products; nonelectrical machinery; electrical machinery; transportation equipment; instruments; lumber and lumber products; furniture and fixtures; stone, clay, and glass products; and miscellaneous manufactures. Nondurables include: Textile mill products, apparel products, leather and leather products, printing and publishing, chemicals and chemical products, petroleum products, rubber and plastic products, food, and tobacco products. Manufacturing accounted for about 22 percent of GNP in 1989.

Nonfinancial corporate output is equal to GNP in constant 1982 dollars, less the rest-of-the-world sector, general government, output of nonprofit institutions, output of paid employees of private households, rental value of owner-occupied dwellings, unincorporated business, the output of corporations engaged in banking, finance, stock and commodity trading, and credit and insurance agencies, and the statistical discrepancy in computing the NIPA. Nonfinancial corporations accounted for about 60 percent of GNP in 1989.

**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; 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.

Table 1. Business sector: Productivity, hourly compensation, unit labor cost, and prices, seasonally adjusted

Year and quarter	Output per hour of all persons	Output	Hours of all persons	Compensation per hour (1)	Real compensation per hour (2)	Unit labor cost	Unit non-labor payments (3)	Implicit price deflator (4)	
Indexes 1982=100									
1989	I	r113.0	135.6	r120.0	r131.8	r104.3	116.7	r130.9	121.2
	II	r113.0	135.9	r120.2	r132.7	r103.5	117.4	r133.3	122.5
	III	r112.6	136.1	r120.9	r133.1	r103.1	118.2	r133.9	123.3
	IV	r111.9	135.5	r121.0	r133.8	r102.6	r119.5	r134.5	124.3
	ANNUAL	r112.6	135.8	r120.5	r132.9	r103.4	r117.9	133.1	122.8
1990	I	r111.7	136.0	r121.7	r135.3	r101.7	121.1	135.5	125.8
	II	r111.9	136.4	r121.9	r137.0	r102.1	r122.5	137.0	r127.2
	III	112.4	136.9	121.8	138.5	101.7	123.3	138.2	128.1
Percent change from previous quarter at annual rate (5)									
1989	I	r-0.5	3.5	r4.0	r3.3	r-2.0	r3.8	r1.9	3.1
	II	r0.1	0.9	r0.8	r2.6	r-3.2	2.5	7.7	4.3
	III	r-1.6	0.6	r2.2	r1.1	r-1.7	2.8	1.8	2.5
	IV	r-2.3	-1.8	r0.4	r2.2	r-1.8	4.6	r1.7	3.5
	ANNUAL	r-0.5	2.1	r2.6	r3.3	r-1.5	r3.8	r4.1	3.9
1990	I	r-0.9	1.4	r2.3	r4.5	r-3.3	r5.4	r3.1	4.6
	II	r0.6	r1.2	r0.5	r5.4	r1.6	r4.7	r4.5	r4.6
	III	1.9	1.5	-0.4	4.4	-1.9	2.5	3.4	2.8
Percent change from corresponding quarter of previous year									
1989	I	r-0.2	3.4	r3.6	r4.4	r-0.4	r4.6	r4.0	4.4
	II	r0.1	2.5	r2.3	r3.7	r-1.4	r3.6	r5.5	4.2
	III	r-0.9	1.7	r2.7	r2.6	r-2.0	r3.5	r4.0	3.7
	IV	r-1.1	0.8	r1.9	r2.3	r-2.2	r3.4	r3.2	3.4
	ANNUAL	r-0.5	2.1	r2.6	r3.3	r-1.5	r3.8	r4.1	3.9
1990	I	-1.2	0.3	r1.4	r2.6	r-2.5	3.8	3.6	3.7
	II	r-1.0	r0.3	r1.4	r3.3	r-1.3	r4.4	2.8	3.8
	III	-0.2	0.6	0.7	4.1	-1.4	4.3	3.2	3.9

See footnotes following table 6.  
r=revised

November 6, 1990  
Source: Bureau of Labor Statistics

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

Year and quarter	Output per hour of all persons	Output	Hours of all persons	Compensation per hour (1)	Real compensation per hour (2)	Unit labor cost	Unit non-labor payments (3)	Implicit price deflator (4)	
Indexes 1982=100									
1989	I	r112.1	136.4	r121.7	r131.0	r103.7	116.9	r131.0	121.4
	II	r112.0	136.8	r122.2	r131.6	r102.6	117.5	r134.0	122.7
	III	r111.7	137.1	r122.7	r132.1	r102.3	118.3	r134.8	123.5
	IV	r111.0	136.3	r122.8	r132.9	r101.9	r119.7	r135.4	124.7
	ANNUAL	r111.7	136.7	r122.3	r131.9	r102.7	118.1	r133.8	123.0
1990	I	r110.7	136.8	r123.7	r134.2	r100.9	121.3	135.7	125.8
	II	r110.7	r137.2	r123.9	r135.8	r101.2	r122.7	137.5	127.3
	III	111.2	137.7	123.9	137.3	100.8	123.5	138.6	128.3
Percent change from previous quarter at annual rate(5)									
1989	I	r-2.7	1.2	r4.0	r3.3	r-2.0	r6.1	r-3.3	2.8
	II	r-0.3	1.3	r1.6	r1.7	r-4.1	2.0	9.3	4.4
	III	r-1.0	0.6	r1.6	r1.6	r-1.2	r2.6	2.6	2.6
	IV	r-2.5	-2.1	r0.5	r2.3	r-1.6	r5.0	r1.7	3.9
	ANNUAL	r-0.7	2.0	r2.7	r3.2	r-1.5	r3.9	r3.9	3.9
1990	I	r-1.3	1.4	r2.8	r3.9	r-3.8	r5.3	r1.0	3.8
	II	r0.3	r1.2	r0.9	r5.0	r1.2	r4.7	r5.2	r4.8
	III	1.6	1.5	-0.1	4.5	-1.8	2.8	3.5	3.0
Percent change from corresponding quarter of previous year									
1989	I	r-0.1	3.6	r3.7	r4.4	r-0.4	r4.5	r3.3	4.1
	II	r0.0	2.6	r2.6	r3.5	r-1.6	r3.6	r5.3	4.1
	III	r-1.0	1.7	r2.7	r2.6	r-2.0	r3.6	r4.7	3.9
	IV	r-1.6	0.3	r1.9	r2.2	r-2.2	r3.9	r2.5	3.4
	ANNUAL	r-0.7	2.0	r2.7	r3.2	r-1.5	r3.9	r3.9	3.9
1990	I	r-1.3	0.3	r1.6	r2.4	r-2.7	3.7	3.6	3.7
	II	r-1.1	r0.3	r1.4	r3.2	r-1.4	r4.4	r2.6	r3.8
	III	-0.5	0.5	1.0	3.9	-1.5	4.4	2.8	3.9

See footnotes following table 6.  
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November 6, 1990  
Source: Bureau of Labor Statistics

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

Year and quarter		Output per hour of all persons	Output (6)	Hours of all persons	Compensation per hour(1)	Real compensation per hour(2)	Unit labor cost
Indexes 1982=100							
1989	I	r130.2	143.7	r110.4	r126.7	100.2	97.3
	II	r131.4	144.5	r110.0	r127.1	r99.1	96.7
	III	r131.1	144.0	r109.9	r128.2	r99.3	97.8
	IV	r131.9	143.5	r108.8	r128.9	r98.9	97.8
	ANNUAL	r131.1	144.0	r109.8	r127.7	r99.4	97.4
1990	I	r133.5	144.2	r108.0	r129.7	r97.5	97.1
	II	r134.5	r145.7	r108.3	131.2	97.8	r97.5
	III	136.3	147.0	107.8	132.4	97.1	97.1
Percent change from previous quarter at annual rate(5)							
1989	I	r2.7	3.1	r0.3	r5.2	r-0.2	r2.4
	II	r3.9	2.4	r-1.4	r1.3	r-4.5	-2.5
	III	r-1.0	-1.4	r-0.4	r3.6	r0.7	4.6
	IV	r2.5	-1.3	r-3.7	r2.4	r-1.6	-0.1
	ANNUAL	r2.6	2.9	r0.3	r3.9	r-0.9	r1.3
1990	I	r4.9	1.8	r-2.9	r2.3	r-5.4	-2.5
	II	r3.1	r4.3	r1.2	r4.7	r1.0	r1.6
	III	5.6	3.6	-1.9	3.7	-2.6	-1.7
Percent change from corresponding quarter of previous year							
1989	I	r3.1	4.9	r1.8	r4.6	r-0.2	r1.4
	II	r3.2	4.1	r0.8	r4.1	r-1.1	r0.8
	III	r1.7	2.1	r0.4	r3.7	r-0.9	r2.0
	IV	r2.0	0.7	r-1.3	r3.1	r-1.4	r1.1
	ANNUAL	r2.6	2.9	r0.3	r3.9	r-0.9	r1.3
1990	I	r2.5	0.4	r-2.1	r2.4	r-2.7	-0.2
	II	r2.4	r0.8	r-1.5	r3.2	r-1.3	r0.9
	III	4.0	2.1	-1.9	3.3	-2.1	-0.7

See footnotes following table 6.  
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November 6, 1990  
Source: Bureau of Labor Statistics



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

Year and quarter	Output per hour of all persons	Output (6)	Hours of all persons	Compensation per hour (1)	Real compensation per hour (2)	Unit labor cost	
Indexes 1982=100							
1989	I	r142.6	159.7	r112.0	r125.3	r99.2	87.9
	II	r145.0	160.8	r110.9	r125.7	r98.0	86.7
	III	r144.9	160.2	r110.5	r127.0	r98.4	87.6
	IV	r144.9	158.5	r109.3	r127.6	r97.9	88.0
	ANNUAL	r144.4	159.8	r110.7	r126.4	r98.4	87.5
1990	I	r146.7	159.1	108.5	r128.1	96.3	87.3
	II	r149.0	r161.9	r108.7	r129.5	r96.5	r86.9
	III	151.7	163.6	107.9	130.9	96.0	86.3
Percent change from previous quarter at annual rate (5)							
1989	I	r2.1	2.2	r0.1	r6.2	r0.8	r4.1
	II	r6.9	2.8	r-3.8	r1.2	r-4.5	-5.3
	III	r-0.2	-1.7	r-1.5	r4.3	r1.4	4.5
	IV	r0.0	-4.1	r-4.1	r1.8	r-2.1	1.8
	ANNUAL	r3.0	3.1	r0.0	r4.1	r-0.7	r1.1
1990	I	r4.8	1.6	r-3.1	r1.5	r-6.1	-3.1
	II	r6.6	r7.3	r0.7	r4.4	r0.7	r-2.0
	III	7.3	4.2	-2.9	4.3	-2.0	-2.8
Percent change from corresponding quarter of previous year							
1989	I	r3.0	5.9	r2.8	r4.0	r-0.7	r1.0
	II	r3.8	4.5	r0.6	r4.4	r-0.8	r0.5
	III	r2.8	2.3	r-0.4	r4.4	r-0.3	r1.6
	IV	r2.1	-0.2	r-2.3	r3.4	r-1.1	r1.2
	ANNUAL	r3.0	3.1	r0.0	r4.1	r-0.7	r1.1
1990	I	r2.8	-0.4	r-3.1	r2.2	r-2.9	-0.6
	II	r2.7	r0.7	r-2.0	r3.0	r-1.6	r0.3
	III	4.6	2.2	-2.4	3.0	-2.4	-1.5

See footnotes following table 6.  
r=revised

November 6, 1990  
Source: Bureau of Labor Statistics

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

Year and quarter	Output per hour of all persons	Output (6)	Hours of all persons	Compensation per hour(1)	Real compensation per hour(2)	Unit labor cost	
Indexes 1982=100							
1989	I	r113.1	122.3	r108.1	r128.5	r101.7	113.6
	II	r113.0	122.8	r108.7	r129.1	r100.7	114.3
	III	r112.4	122.5	r109.0	r130.0	r100.6	115.6
	IV	r114.4	123.7	r108.1	r131.1	r100.5	114.6
	ANNUAL	r113.2	122.8	r108.5	r129.6	r100.9	114.5
1990	I	r115.8	124.3	r107.4	r132.2	r99.4	114.2
	II	r115.1	124.2	r107.9	r134.0	r99.9	r116.4
	III	115.9	124.9	107.8	135.0	99.0	116.4
Percent change from previous quarter at annual rate(5)							
1989	I	r3.9	4.7	r0.7	r3.6	r-1.7	r-0.3
	II	r-0.5	1.8	r2.3	r1.9	r-3.9	2.4
	III	r-2.1	-1.0	r1.1	r2.6	r-0.3	r4.8
	IV	7.1	3.7	-3.2	3.4	-0.6	-3.4
	ANNUAL	r1.9	2.7	r0.8	r3.7	r-1.1	r1.7
1990	I	r5.2	2.3	r-2.7	r3.6	r-4.1	-1.5
	II	r-2.4	-0.6	r1.8	5.4	1.6	r8.0
	III	2.9	2.5	-0.4	3.0	-3.2	0.1
Percent change from corresponding quarter of previous year							
1989	I	r3.0	3.4	r0.3	r5.2	r0.4	r2.1
	II	r2.2	3.4	r1.2	r3.6	r-1.5	r1.4
	III	r0.2	1.8	r1.5	r2.9	r-1.7	r2.6
	IV	r2.1	2.3	r0.2	r2.9	r-1.6	r0.8
	ANNUAL	r1.9	2.7	r0.8	r3.7	r-1.1	r1.7
1990	I	r2.3	1.7	r-0.7	r2.9	r-2.2	0.5
	II	r1.9	1.1	r-0.8	3.7	-0.9	r1.9
	III	3.1	1.9	-1.1	3.8	-1.6	0.7

See footnotes following table 6  
r=revised

November 6, 1990  
Source: Bureau of Labor Statistics

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

Year and quarter	Output per all-employee hour	Output	Employee hours	Hourly compensation (1)	Real hourly compensation (2)	Unit labor cost	Unit non-labor cost (7)	Total unit cost (8)	Unit profits (9)	Implicit price deflator (4)	
Indexes 1982=100											
1989	I	r111.9	136.2	r121.7	r128.3	r101.5	114.6	108.0	112.7	162.3	115.9
	II	r111.6	136.4	r122.2	r128.8	r100.5	115.4	110.6	114.1	162.9	117.1
	III	r111.8	137.1	r122.7	r129.3	r100.2	115.7	113.3	115.0	159.3	117.8
	IV	r110.5	135.9	r123.0	r130.0	r99.7	117.6	115.2	117.0	147.2	118.9
ANNUAL	r111.6	136.4	r122.2	r129.3	r100.6	115.8	111.8	114.7	157.9	117.4	
1990	I	r110.1	136.0	r123.5	r130.9	r98.4	118.9	116.2	118.1	147.6	120.0
	II	r110.6	r136.9	r123.8	r133.0	r99.1	r120.2	r116.2	r119.1	r153.9	121.3
Percent change from previous quarter at annual rate(5)											
1989	I	r-3.6	-0.1	r3.6	r4.6	r-0.8	r8.4	r2.6	6.8	-32.5	2.4
	II	r-1.1	0.6	r1.7	r1.8	r-4.0	2.8	9.9	4.7	1.5	4.4
	III	r0.6	2.1	r1.5	r1.6	r-1.2	1.0	10.2	3.5	-8.5	2.4
	IV	r-4.6	-3.6	r1.1	r1.9	r-2.0	6.9	6.9	6.9	-27.1	3.6
ANNUAL	r-1.6	1.1	r2.8	r3.3	r-1.5	r5.0	r5.9	5.3	-10.4	3.7	
1990	I	r-1.5	0.2	r1.8	r2.8	r-4.9	4.4	3.3	4.1	1.2	3.9
	II	r1.9	r2.8	r0.9	r6.6	r2.8	r4.6	r0.2	r3.4	r18.2	4.5
Percent change from corresponding quarter of previous year											
1989	I	r-1.5	2.3	r3.8	r4.4	r-0.4	r6.0	r3.6	5.3	-8.1	4.0
	II	r-1.7	1.4	r3.1	r3.5	r-1.6	r5.3	r5.7	5.4	-8.5	4.0
	III	r-1.4	1.3	r2.7	r2.7	r-1.9	r4.1	r6.9	4.9	-7.0	3.8
	IV	r-2.2	-0.3	r2.0	r2.5	r-2.0	r4.8	r7.4	5.5	-17.8	3.2
ANNUAL	r-1.6	1.1	r2.8	r3.3	r-1.5	r5.0	r5.9	5.3	-10.4	3.7	
1990	I	r-1.7	-0.2	r1.5	r2.0	r-3.0	3.8	7.6	4.8	-9.0	3.6
	II	-1.0	r0.4	r1.3	r3.2	r-1.4	r4.2	r5.1	r4.4	r-5.5	3.6

See footnotes following table 6.  
r=revised

November 6, 1990  
Source: Bureau of Labor Statistics

**SOURCE:** Output data from the Bureau of Economic Analysis, U.S. Department of Commerce, and the Federal Reserve Board. Compensation and hours data from the Bureau of Labor Statistics, U.S. Department of Labor, 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 30 days after the close of the reference period; revisions appear 30 days later, and third revisions after an additional 60 days. In the business sector, the probability is 0.95 that the third publication (third revision) of a quarterly index of output per hour of all persons will differ from the initial value by between -1.8 and +2.1 index points. This interval is based on the performance of this measure between the second quarter of 1976 and the third quarter of 1989.

#### 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) Compensation per hour adjusted for changes in the Consumer Price Index for All Urban Consumers.
- (3) Unit nonlabor payments include profits, capital consumption allowances, interest, rental income of persons, and indirect taxes.
- (4) Current dollar gross product divided by constant dollar gross product.
- (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) Quarterly manufacturing output measures are based on the index of industrial production prepared monthly by the Board of Governors of the Federal Reserve adjusted by BLS to annual manufacturing output levels (gross product originating) from the National Income and Product Accounts prepared by the Bureau of Economic Analysis of the U.S. Department of Commerce.
- (7) Unit nonlabor cost includes capital consumption allowances, interest, rental income of persons, and indirect taxes. For nonfinancial corporations, rental income of persons is zero by definition.
- (8) Total unit cost is the sum of labor and nonlabor costs.
- (9) Unit profits include corporate profits with inventory valuation and capital consumption adjustments.

Appendix table 1.  
Business sector: Productivity, hourly compensation, unit labor cost, and prices, seasonally adjusted

Year and quarter	Output per hour of all persons	Output	Hours of all persons	Compensation per hour(1)	Real compensation per hour(2)	Unit labor cost	Unit non-labor payments(3)	Implicit price deflator(4)
Indexes 1982=100								
1987	I	109.5	123.5	112.8	121.5	104.7	111.0	113.7
	II	110.3	125.4	113.7	122.0	104.0	110.6	114.5
	III	111.1	127.2	114.5	123.2	104.0	110.9	115.3
	IV	112.0	129.4	115.6	125.5	105.0	112.1	115.7
	ANNUAL	110.7	126.4	114.1	123.1	104.5	111.2	114.8
1988	I	113.2	131.2	115.8	126.3	104.7	111.5	116.2
	II	112.9	132.6	117.5	127.9	104.9	113.3	117.5
	III	113.6	133.8	117.8	129.7	105.1	114.2	118.9
	IV	113.1	134.5	118.8	130.8	104.9	115.6	120.3
	ANNUAL	113.2	133.0	117.5	128.6	104.9	113.7	118.2
Percent change from previous quarter at annual rate(5)								
1987	I	0.2	4.3	4.1	2.3	-3.1	2.1	3.2
	II	3.1	6.1	3.0	1.7	-2.7	-1.3	2.8
	III	2.8	5.8	2.9	4.1	0.1	1.2	2.9
	IV	3.2	7.2	3.8	7.6	3.7	4.3	1.2
	ANNUAL	1.1	4.1	3.0	3.7	0.1	2.6	2.7
1988	I	4.6	5.7	1.0	2.5	-0.9	-2.0	1.7
	II	-1.1	4.6	5.8	5.3	0.8	6.5	4.8
	III	2.5	3.5	1.0	5.6	0.6	3.1	4.7
	IV	-1.6	2.0	3.6	3.4	-0.9	5.0	4.9
	ANNUAL	2.2	5.3	3.0	4.5	0.4	2.2	3.0
Percent change from corresponding quarter of previous year								
1987	I	-0.3	1.8	2.2	4.1	1.9	4.5	2.9
	II	0.6	3.8	3.2	3.4	-0.4	2.8	2.9
	III	1.8	5.1	3.2	3.4	-0.8	1.6	2.5
	IV	2.3	5.8	3.4	3.9	-0.5	1.5	2.5
	ANNUAL	1.1	4.1	3.0	3.7	0.1	2.6	2.7
1988	I	3.4	6.2	2.7	4.0	0.0	0.5	2.2
	II	2.4	5.8	3.4	4.9	0.9	2.4	2.6
	III	2.3	5.2	2.9	5.2	1.1	2.9	3.1
	IV	1.1	3.9	2.8	4.2	-0.1	3.1	4.0
	ANNUAL	2.2	5.3	3.0	4.5	0.4	2.2	3.0

See footnotes following table 6.

November 6, 1990  
Source: Bureau of Labor Statistics

Appendix table 2.  
Nonfarm business sector: Productivity, hourly compensation, unit labor cost, and prices, seasonally adjusted

Year and quarter	Output per hour of all persons	Output	Hours of all persons	Compensation per hour (1)	Real compensation per hour (2)	Unit labor cost	Unit non-labor payments (3)	Implicit price deflator (4)	
Indexes 1982=100									
1987	I	108.4	123.8	114.2	120.8	104.1	111.4	120.8	114.4
	II	109.5	125.9	115.0	121.4	103.4	110.9	123.7	114.9
	III	110.1	127.6	115.9	122.6	103.5	111.3	125.6	115.8
	IV	110.9	129.7	117.0	124.8	104.4	112.6	124.2	116.2
	ANNUAL	109.8	126.8	115.5	122.4	104.0	111.6	123.6	115.3
1988	I	112.2	131.6	117.3	125.5	104.1	111.9	126.9	116.6
	II	112.0	133.4	119.1	127.1	104.3	113.5	127.2	117.8
	III	112.8	134.8	119.5	128.8	104.4	114.2	128.8	118.8
	IV	112.9	136.0	120.5	130.0	104.2	115.2	132.1	120.5
	ANNUAL	112.5	134.0	119.1	127.8	104.3	113.7	128.8	118.4
Percent change from previous quarter at annual rate (5)									
1987	I	0.0	4.7	4.7	1.8	-3.6	1.7	6.9	3.4
	II	3.9	6.7	2.8	1.8	-2.7	-2.0	10.2	1.9
	III	2.4	5.6	3.1	4.1	0.1	1.6	6.1	3.1
	IV	2.8	6.9	4.0	7.4	3.5	4.5	-4.5	1.4
	ANNUAL	1.0	4.2	3.2	3.6	-0.1	2.5	3.0	2.7
1988	I	4.7	5.9	1.1	2.4	-1.0	-2.2	9.0	1.4
	II	-0.5	5.6	6.1	5.1	0.7	5.7	1.1	4.1
	III	2.8	4.1	1.3	5.3	0.4	2.5	5.1	3.4
	IV	0.2	3.6	3.4	3.8	-0.5	3.6	10.6	5.9
	ANNUAL	2.5	5.7	3.1	4.4	0.3	1.9	4.2	2.7
Percent change from corresponding quarter of previous year									
1987	I	-0.6	1.8	2.5	3.9	1.7	4.5	0.1	3.0
	II	0.6	3.9	3.4	3.3	-0.6	2.7	3.1	2.9
	III	1.7	5.2	3.4	3.3	-0.9	1.5	4.1	2.4
	IV	2.3	6.0	3.6	3.7	-0.7	1.4	4.5	2.5
	ANNUAL	1.0	4.2	3.2	3.6	-0.1	2.5	3.0	2.7
1988	I	3.5	6.3	2.8	3.9	0.0	0.4	5.0	2.0
	II	2.4	6.0	3.6	4.7	0.8	2.3	2.8	2.5
	III	2.4	5.6	3.1	5.1	0.9	2.6	2.6	2.6
	IV	1.8	4.8	3.0	4.2	-0.1	2.3	6.4	3.7
	ANNUAL	2.5	5.7	3.1	4.4	0.3	1.9	4.2	2.7

See footnotes following table 6.

November 6, 1990  
Source: Bureau of Labor Statistics

Appendix table 3.  
 Manufacturing sector: Productivity, hourly compensation, and unit labor cost,  
 seasonally adjusted

Year and quarter	Output per hour of all persons	Output (6)	Hours of all persons	Compensation per hour(1)	Real compensation per hour(2)	Unit labor cost	
Indexes 1982=100							
1987	I	122.7	129.2	105.3	118.5	102.2	96.6
	II	124.6	131.2	105.3	118.3	100.8	94.9
	III	125.2	133.2	106.4	118.8	100.3	94.9
	IV	125.6	135.5	107.9	119.9	100.3	95.5
	ANNUAL	124.5	132.3	106.2	118.9	101.0	95.5
1988	I	126.2	136.9	108.5	121.1	100.5	96.0
	II	127.3	138.9	109.1	122.1	100.2	95.9
	III	128.8	141.1	109.5	123.6	100.1	95.9
	IV	129.3	142.6	110.3	125.0	100.3	96.7
	ANNUAL	127.8	139.9	109.4	122.9	100.2	96.1
Percent change from previous quarter at annual rate(5)							
1987	I	3.0	3.2	0.2	2.1	-3.2	-0.8
	II	6.5	6.6	0.1	-1.0	-5.3	-7.0
	III	1.9	6.2	4.2	2.0	-1.9	0.1
	IV	1.3	6.9	5.6	3.7	0.0	2.5
	ANNUAL	3.6	4.3	0.7	2.3	-1.3	-1.2
1988	I	2.0	4.4	2.3	4.1	0.6	2.0
	II	3.5	6.0	2.4	3.2	-1.1	-0.3
	III	4.8	6.4	1.5	4.8	-0.1	0.0
	IV	1.4	4.4	2.9	4.9	0.6	3.5
	ANNUAL	2.6	5.7	3.0	3.3	-0.8	0.7
Percent change from corresponding quarter of previous year							
1987	I	3.0	2.2	-0.7	3.4	1.1	0.4
	II	4.2	4.1	-0.1	2.4	-1.4	-1.7
	III	3.9	5.2	1.3	1.9	-2.3	-1.9
	IV	3.1	5.7	2.5	1.7	-2.6	-1.4
	ANNUAL	3.6	4.3	0.7	2.3	-1.3	-1.2
1988	I	2.9	6.0	3.0	2.2	-1.7	-0.7
	II	2.2	5.8	3.6	3.3	-0.6	1.1
	III	2.9	5.9	2.9	4.0	-0.2	1.0
	IV	2.9	5.3	2.3	4.3	0.0	1.3
	ANNUAL	2.6	5.7	3.0	3.3	-0.8	0.7

See footnotes following table 6.

November 6, 1990  
 Source: Bureau of Labor Statistics

Appendix table 4.  
Durable manufacturing sector: Productivity, hourly compensation, and unit labor cost,  
seasonally adjusted

Year and quarter	Output per hour of all persons	Output (6)	Hours of all persons	Compensation per hour(1)	Real compensation per hour(2)	Unit labor cost	
Indexes 1982=100							
1987	I	133.9	141.5	105.7	118.5	102.2	88.5
	II	136.4	143.6	105.3	117.9	100.5	86.4
	III	136.4	145.3	106.5	118.2	99.8	86.6
	IV	137.5	149.0	108.4	119.1	99.6	86.6
	ANNUAL	136.1	144.9	106.5	118.4	100.6	87.0
1988	I	138.5	150.8	108.9	120.5	99.9	87.0
	II	139.7	154.0	110.2	120.5	98.8	86.2
	III	141.1	156.6	111.0	121.7	98.6	86.3
	IV	141.9	158.9	112.0	123.4	99.0	87.0
	ANNUAL	140.2	155.1	110.6	121.4	99.0	86.6
Percent change from previous quarter at annual rate(5)							
1987	I	3.7	3.0	-0.7	2.6	-2.8	-1.1
	II	7.7	6.0	-1.6	-2.0	-6.4	-9.1
	III	0.0	4.8	4.7	1.0	-2.8	1.0
	IV	3.0	10.5	7.2	2.9	-0.9	-0.2
	ANNUAL	4.2	4.0	-0.2	2.2	-1.4	-1.9
1988	I	2.9	5.1	2.1	4.8	1.4	1.8
	II	3.5	8.5	4.8	-0.1	-4.3	-3.5
	III	4.0	6.9	2.8	4.2	-0.7	0.2
	IV	2.4	6.0	3.5	5.8	1.4	3.3
	ANNUAL	3.0	7.0	3.9	2.5	-1.6	-0.5
Percent change from corresponding quarter of previous year							
1987	I	3.8	1.7	-2.1	3.6	1.4	-0.2
	II	5.4	3.8	-1.4	2.6	-1.2	-2.6
	III	4.1	4.4	0.4	1.8	-2.3	-2.2
	IV	3.6	6.0	2.3	1.1	-3.2	-2.4
	ANNUAL	4.2	4.0	-0.2	2.2	-1.4	-1.9
1988	I	3.4	6.6	3.1	1.6	-2.2	-1.7
	II	2.4	7.2	4.7	2.1	-1.7	-0.2
	III	3.4	7.7	4.2	2.9	-1.2	-0.4
	IV	3.2	6.6	3.3	3.7	-0.6	0.4
	ANNUAL	3.0	7.0	3.9	2.5	-1.6	-0.5

See footnotes following table 6.

November 6, 1990  
Source: Bureau of Labor Statistics



Appendix table 5.  
Nondurable manufacturing sector: Productivity, hourly compensation, and unit labor cost,  
seasonally adjusted

Year and quarter	Output per hour of all persons	Output (6)	Hours of all persons	Compensation per hour (1)	Real compensation per hour (2)	Unit labor cost	
----- Indexes 1982=100 -----							
1987	I	107.6	112.7	104.7	118.4	102.1	110.1
	II	108.9	114.7	105.4	118.8	101.3	109.1
	III	110.2	117.1	106.3	119.9	101.2	108.8
	IV	109.6	117.5	107.1	121.3	101.4	110.6
	ANNUAL	109.1	115.5	105.9	119.6	101.6	109.6
1988	I	109.8	118.3	107.8	122.1	101.3	111.2
	II	110.6	118.8	107.5	124.6	102.2	112.7
	III	112.2	120.4	107.4	126.3	102.4	112.6
	IV	112.1	120.9	107.9	127.4	102.2	113.7
	ANNUAL	111.1	119.6	107.7	125.0	102.0	112.6
----- Percent change from previous quarter at annual rate(5) -----							
1987	I	1.9	3.6	1.6	1.6	-3.7	-0.3
	II	4.9	7.6	2.6	1.3	-3.1	-3.4
	III	4.9	8.5	3.4	3.5	-0.4	-1.4
	IV	-2.0	1.2	3.3	4.8	1.0	7.0
	ANNUAL	2.7	4.9	2.1	2.8	-0.9	0.0
1988	I	0.5	3.1	2.5	2.8	-0.6	2.2
	II	2.9	1.7	-1.2	8.5	3.9	5.4
	III	5.9	5.4	-0.4	5.6	0.6	-0.2
	IV	-0.4	1.7	2.1	3.3	-1.0	3.7
	ANNUAL	1.8	3.6	1.8	4.5	0.4	2.7
----- Percent change from corresponding quarter of previous year -----							
1987	I	1.9	3.2	1.3	3.4	1.1	1.5
	II	2.7	4.7	1.9	2.5	-1.4	-0.2
	III	3.7	6.5	2.7	2.2	-1.9	-1.5
	IV	2.4	5.2	2.7	2.8	-1.6	0.4
	ANNUAL	2.7	4.9	2.1	2.8	-0.9	0.0
1988	I	2.0	5.0	2.9	3.1	-0.8	1.0
	II	1.6	3.6	2.0	4.9	1.0	3.3
	III	1.8	2.8	1.0	5.4	1.2	3.6
	IV	2.2	2.9	0.7	5.0	0.7	2.8
	ANNUAL	1.8	3.6	1.8	4.5	0.4	2.7

See footnotes following table 6.

November 6, 1990  
Source: Bureau of Labor Statistics

Appendix table 6.  
Nonfinancial corporations: Productivity, hourly compensation, unit labor cost, unit profits, and prices,  
seasonally adjusted

Year and quarter	Output per all-employee hour	Output	Employee hours	Hourly compensation (1)	Real hourly compensation (2)	Unit labor cost	Unit non-labor cost (7)	Total unit cost (8)	Unit profits (9)	Implicit price deflator (4)	
Indexes 1982=100											
1987	I	110.6	125.4	113.4	118.7	102.3	107.4	103.2	106.2	157.5	109.4
	II	111.6	127.6	114.3	119.2	101.6	106.9	102.8	105.8	171.4	109.9
	III	112.3	129.7	115.5	120.5	101.7	107.3	102.4	105.9	181.0	110.6
	IV	112.6	131.3	116.6	122.3	102.3	108.6	102.2	106.8	174.0	111.0
	ANNUAL	111.9	128.5	114.8	120.4	102.2	107.5	102.7	106.2	171.1	110.2
1988	I	113.6	133.2	117.2	122.9	101.9	108.1	104.2	107.1	176.6	111.4
	II	113.6	134.6	118.5	124.4	102.1	109.6	104.6	108.2	178.1	112.6
	III	113.4	135.4	119.4	125.9	102.1	111.1	106.0	109.7	171.4	113.5
	IV	113.0	136.3	120.6	126.9	101.7	112.3	107.3	110.9	179.1	115.2
	ANNUAL	113.5	134.9	118.8	125.2	102.1	110.3	105.5	109.0	176.3	113.2
Percent change from previous quarter at annual rate (5)											
1987	I	2.0	6.9	4.8	1.1	-4.2	-0.9	-3.7	-1.6	11.1	-0.6
	II	3.5	7.0	3.3	1.7	-2.7	-1.7	-1.3	-1.6	40.3	1.7
	III	2.7	7.0	4.1	4.2	0.3	1.5	-1.5	0.6	24.4	2.8
	IV	1.0	4.8	3.8	6.1	2.2	5.0	-0.9	3.4	-14.5	1.4
	ANNUAL	2.4	5.3	2.9	3.2	-0.4	0.8	-0.3	0.5	9.1	1.2
1988	I	3.7	6.0	2.2	2.0	-1.3	-1.6	8.2	0.9	6.0	1.4
	II	-0.2	4.3	4.5	5.1	0.7	5.3	1.5	4.3	3.4	4.2
	III	-0.8	2.4	3.2	4.9	0.0	5.7	5.2	5.6	-14.2	3.5
	IV	-1.4	2.6	4.0	2.9	-1.3	4.4	5.2	4.6	19.2	5.9
	ANNUAL	1.4	5.0	3.5	4.0	-0.1	2.6	2.8	2.6	3.0	2.7
Percent change from corresponding quarter of previous year											
1987	I	1.6	3.0	1.4	3.5	1.3	1.9	1.7	1.9	-2.5	1.4
	II	2.5	5.2	2.7	2.9	-0.9	0.4	1.0	0.6	9.4	1.4
	III	3.2	6.8	3.5	3.0	-1.2	-0.2	-2.0	-0.7	16.2	0.8
	IV	2.3	6.4	4.0	3.3	-1.1	0.9	-1.9	0.2	13.5	1.3
	ANNUAL	2.4	5.3	2.9	3.2	-0.4	0.8	-0.3	0.5	9.1	1.2
1988	I	2.7	6.2	3.4	3.5	-0.4	0.7	1.0	0.8	12.1	1.8
	II	1.8	5.5	3.6	4.4	0.4	2.5	1.8	2.3	3.9	2.5
	III	0.9	4.4	3.4	4.5	0.4	3.6	3.4	3.5	-5.3	2.6
	IV	0.3	3.8	3.5	3.7	-0.5	3.4	5.0	3.8	2.9	3.7
	ANNUAL	1.4	5.0	3.5	4.0	-0.1	2.6	2.8	2.6	3.0	2.7

See footnotes following table 6.

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Source: Bureau of Labor Statistics