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PRODUCTIVITY AND COSTS
Preliminary Fourth-Quarter Measures and Annual Averages, 1998

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 1998. In the fourth quarter, productivity advanced 3.9 percent in the business sector as output grew 6.6 percent and hours worked rose less--2.6 percent (seasonally adjusted annual rates). In the nonfarm business sector, productivity rose 3.7 percent as output increased 6.8 percent and hours grew 3.0 percent.

|  | Fourth <br> quarter | Annual averages |
| :--- | :---: | :---: |
| Business sector | 3.9 | 2.3 |
| Nonfarm business sector | 3.7 | 2.2 |

For the year 1998, the increases in productivity were higher than those posted in 1997 (as revised) in both the business and nonfarm business sectors. Fourth-quarter productivity and related measures are summarized in table A and annual data in table B. Detailed information is presented in tables 1 through 5.

In the manufacturing sector, increases in productivity were:

|  | Fourth <br> quarter | Annual averages |
| :---: | :---: | :---: |
| Manufacturing sector | 5.6 | $4.397-1998$ |

Manufacturing productivity grew at a 5.6 percent annual rate in the fourth quarter, reflecting an 8.4-percent increase in durable goods manufacturing and a 2.2-percent increase in nondurable goods. On an annual basis, manufacturing productivity increased 4.3 percent in 1998--the third consecutive increase of more than four percent. (Output and hours in manufacturing, which includes about 17 percent of U.S. business-sector employment, tend to vary more from quarter to quarter than data for the more aggregate business and nonfarm business sectors.)

Table A. Productivity and costs: Preliminary fourth-quarter 1998 measures
(Seasonally adjusted annual rates)

| Sector | Produc- <br> tivity | Output | Hours | Hourly <br> compen- <br> sation | Real <br> hourly <br> compen- <br> sation | Unit labor costs |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Percent change from preceding quarter |  |  |  |  |  |  |
| Business | 3.9 | 6.6 | 2.6 | 3.9 | 2.0 | 0.1 |
| Nonfarm business | 3.7 | 6.8 | 3.0 | 3.5 | 1.5 | -0.2 |
| Manufacturing | 5.6 | 5.1 | -0.5 | 3.2 | 1.3 | -2.2 |
| Durable | 8.4 | 8.4 | 0.0 | 3.2 | 1.3 | -4.8 |
| Nondurable | 2.2 | 0.9 | -1.2 | 3.1 | 1.2 | 0.9 |


|  | Percent change from same quarter a year ago |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Business | 2.7 | 4.8 | 2.1 | 4.2 | 2.6 | 1.5 |
| Nonfarm business | 2.5 | 4.8 | 2.3 | 4.0 | 2.5 | 1.5 |
| Manufacturing | 3.9 | 2.6 | -1.3 | 3.2 | 1.7 | -0.7 |
| Durable | 6.3 | 5.3 | -1.0 | 2.2 | 0.7 | -3.8 |
| Nondurable | 1.1 | -0.7 | -1.8 | 4.9 | 3.3 | 3.7 |

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 for further information on data sources.

THIRD-TO-FOURTH QUARTER CHANGES, 1998

## Business

Productivity in the business sector grew 3.9 percent in the fourth quarter of 1998, reflecting an increase of 6.6 percent in output combined with a 2.6 percent rise in the hours of all persons engaged in the sector. In the third quarter of 1998, productivity rose 2.6 percent (as revised) as output grew 4.0 percent and hours 1.4 percent (seasonally adjusted annual rates).

Hourly compensation increased at a 3.9 percent annual rate in the fourth quarter of 1998 , similar to the 3.7 percent growth during the third quarter. This measure includes wages and salaries, supplements, employer contributions to employee-benefit plans, and taxes. Unit labor costs, which reflect changes in both hourly compensation and productivity, increased at just a 0.1 percent annual rate during the fourth quarter. During the third quarter of 1998, unit labor costs rose 1.0 percent.

Real hourly compensation, which takes into account changes in the Consumer Price Index for All Urban Consumers (CPI-U), rose at a 2.0 percent annual rate for persons in the business sector. This measure rose 1.8 percent during the third quarter.

The implicit price deflator for business output, which reflects changes in both unit labor costs and unit nonlabor payments, increased at an annual rate of 0.3 percent in the fourth quarter of 1998 . This measure increased 0.5 percent in the third quarter.

## Nonfarm business

In the nonfarm business sector, productivity increased 3.7 percent in the fourth quarter as output rose 6.8 percent and hours of all persons-employees, proprietors, and unpaid family workers--rose 3.0 percent (seasonally adjusted annual rates). As in the larger business sector, productivity grew faster in the fourth quarter than it had in the previous quarter. During the third quarter of 1998 , nonfarm productivity rose 2.5 percent as output and hours increased 4.0 and 1.4 percent, respectively (table 2).

Hourly compensation in the nonfarm business sector rose 3.5 percent in the fourth quarter, and real hourly compensation increased 1.5 percent when the increase in the CPI-U was taken into account. During the third quarter, hourly compensation had increased by 3.9 percent, and real hourly compensation had risen 2.1 percent.

Unit labor costs fell 0.2 percent in the fourth quarter, after rising 1.4 percent in the previous quarter. The implicit price deflator for nonfarm business output rose 0.3 percent in the fourth quarter of 1998 , reflecting both the drop in unit labor costs and an increase in unit nonlabor payments.

## Manufacturing

Manufacturing productivity grew at a 5.6 percent seasonally adjusted annual rate in the fourth quarter of 1998 as output rose 5.1 percent and hours fell 0.5 percent (table 3). A large productivity increase occurred in durable goods manufacturing, where productivity and output both rose 8.4 percent and hours were unchanged (table 4). Among nondurable goods manufacturers, productivity rose 2.2 percent in the fourth quarter as output increased 0.9 percent while hours dropped 1.2 percent (table 5). In the third quarter, total manufacturing productivity had risen 4.7 percent (as revised), reflecting a 0.4 -percent rise in output and a 4.1 percent fall in hours of all persons working in the sector.

The average hourly compensation of manufacturing workers increased 3.2 percent in both the third and fourth quarters. When the increase in consumer prices was taken into account, real hourly compensation in both quarters rose 1.3 percent.

Since the fourth-quarter increase in manufacturing productivity outpaced the increase in hourly compensation, unit labor costs for the manufacturing sector fell 2.2 percent. Unit labor costs in manufacturing also had fallen in the previous quarter, 1.5 percent. Unit labor costs in the fourth quarter of 1998 fell 4.8 percent in durable goods manufacturing but rose 0.9 percent in nondurable goods manufacturing. Unit labor costs in durable goods manufacturing have risen in only 2 of the last 21 quarters (the fourth quarter of 1997 , by 2.2 percent, and the first quarter of 1998 , by 0.6 percent).

ANNUAL AVERAGE CHANGES, 1997-1998

## Business

Business sector productivity increased 2.3 percent when the annual average for 1998 is compared with the annual average for 1997 (table B). Output rose 4.6 percent in 1998 , and hours of all persons engaged in the sector grew 2.2 percent. The 1998 productivity increase was larger than the 1.5-percent rise posted in 1997 (as revised). Output increased 4.6 percent in both years, but business sector hours increased less in 1998 than in 1997, when hours rose 3.1 percent.

Table B. Annual changes in productivity and related measures, 1989-1998

| Measure | 19891990 |  | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Business: |  |  |  |  |  |  |  |  |  |  |
| Productivity | 0.8 | 0.7 | 0.6 | 3.4 | 0.1 | 0.6 | 0.3 | 2.7 | 1.5 | 2.3 |
| Output | 3.4 | 0.8 | -1.7 | 3.2 | 2.7 | 4.1 | 2.7 | 4.2 | 4.6 | 4.6 |
| Hours | 2.5 | 0.2 | -2.3 | -0.2 | 2.6 | 3.5 | 2.4 | 1.5 | 3.1 | 2.2 |
| Hourly compensation | 2.8 | 5.7 | 4.8 | 5.2 | 2.5 | 1.8 | 2.3 | 3.6 | 3.6 | 4.3 |
| Real hourly compensation | -1.9 | 0.3 | 0.5 | 2.1 | -0.5 | -0.7 | -0.5 | 0.7 | 1.2 | 2.7 |
| Unit labor costs | 1.9 | 5.0 | 4.1 | 1.7 | 2.4 | 1.2 | 2.0 | 0.9 | 2.1 | 2.0 |
| Nonfarm Business: |  |  |  |  |  |  |  |  |  |  |
| Productivity | 0.6 | 0.5 | 0.7 | 3.1 | 0.1 | 0.5 | 0.6 | 2.4 | 1.2 | 2.2 |
| Output | 3.2 | 0.7 | -1.8 | 3.0 | 3.0 | 3.9 | 3.0 | 4.1 | 4.5 | 4.6 |
| Hours | 2.6 | 0.3 | -2.4 | -0.1 | 2.9 | 3.3 | 2.4 | 1.6 | 3.2 | 2.4 |
| Hourly compensation | 2.7 | 5.5 | 4.9 | 5.1 | 2.2 | 1.9 | 2.4 | 3.5 | 3.5 | 4.2 |
| Real hourly compensation | -2.0 | 0.1 | 0.7 | 2.1 | -0.7 | -0.6 | -0.5 | 0.6 | 1.2 | 2.6 |
| Unit labor costs | 2.1 | 5.0 | 4.2 | 1.9 | 2.2 | 1.4 | 1.8 | 1.1 | 2.3 | 2.0 |
| Manufacturing: |  |  |  |  |  |  |  |  |  |  |
| Productivity | 0.2 | 2.5 | 2.3 | 5.1 | 2.2 | 3.0 | 3.9 | 4.1 | 4.9 | 4.3 |
| Output | 0.7 | 0.4 | -2.0 | 4.7 | 3.6 | 5.3 | 4.3 | 3.7 | 6.5 | 4.2 |
| Hours | 0.5 | -2.1 | -4.2 | -0.4 | 1.4 | 2.2 | 0.4 | -0.4 | 1.6 | -0.1 |
| Hourly compensation | 3.2 | 4.7 | 5.3 | 4.3 | 2.9 | 2.8 | 2.4 | 2.2 | 4.2 | 4.5 |
| Real hourly compensation | -1.6 | -0.6 | 1.1 | 1.3 | -0.1 | 0.2 | -0.4 | -0.8 | 1.8 | 2.9 |
| Unit labor costs | 3.0 | 2.2 | 2.9 | -0.7 | 0.7 | -0.3 | -1.4 | $-1.8$ | -0.7 | 0.2 |

Hourly compensation in the business sector rose 4.3 percent in 1998 , and real hourly compensation grew 2.7 percent. The increase in real hourly compensation was the largest since 1986 , when it grew 3.3 percent. Unit labor costs rose 2.0 percent in 1998 , about the same as the 2.1 percent increase in the previous year. The implicit price deflator rose 0.6 percent in 1998.

Nonfarm business

Productivity increased 2.2 percent in the nonfarm business sector during 1998 as output rose 4.6 percent and hours of all persons increased 2.4 percent. The increase in labor productivity in 1997, 1.2 percent, occurred as output and hours rose 4.5 and 3.2 percent, respectively.

In 1998, hourly compensation rose 4.2 percent, compared with a 3.5 percent increase in 1997. Real hourly compensation increased 2.6 percent in 1998. Unit labor costs in the nonfarm business sector grew 2.0 percent in 1998, slightly less than the 2.3-percent increase in 1997. The implicit price deflator for nonfarm business rose 0.7 percent.

## Manufacturing

Manufacturing productivity grew 4.3 percent in 1998 as output rose 4.2 percent and hours of all persons fell slightly, 0.1 percent (table B). In durable goods manufacturing, productivity increased 6.8 percent in 1998, reflecting an output increase of 7.0 percent and an increase in hours of all persons of 0.2 percent. The 6.8 -percent increase in labor productivity in durable goods was the largest recorded since 1971, when productivity rose 8.6 percent. A smaller increase in labor productivity in nondurable goods manufacturing in 1998, 1.2 percent, was the result of a 0.7 percent rise in output coupled with a drop, 0.5 percent, in hours of all persons.

Hourly compensation of manufacturing workers increased 4.5 percent in 1998, the largest increase since the 5.3 -percent rise in 1991. Taking into account the rise in the CPI-U, real hourly compensation in manufacturing rose 2.9 percent in 1998. This increase was the largest since 1982, when real hourly compensation rose 3.3 percent. Average hourly compensation in nondurable goods manufacturing rose 5.1 percent in 1998 , more than the 4.1 percent rise in durable goods manufacturing.

Unit labor costs in manufacturing rose 0.2 percent in 1998. This was the first annual increase in unit labor costs since 1993, when they rose 0.7 percent. Unit labor costs in durable goods manufacturing fell 2.5 percent in 1998. This marks the seventh consecutive drop in unit labor costs in this sector. In contrast, unit labor costs in nondurable goods have increased every year since 1992, when they fell 0.2 percent. In 1998, these costs rose 3.8 percent.

## Revised Measures

Current and previous measures for the third quarter of 1998 for the business, nonfarm business, and manufacturing sectors are compared in table C. Productivity growth is lower, and unit labor costs correspondingly higher, than the figures published on Dec. 3, based on the information then available. For all three sectors, output trends were revised downward and hours trends were revised upward.

| Sector | Productivity | Output | Hours | Hourly <br> compen- <br> sation | Real <br> hourly <br> compen- <br> sation | Unit labor costs |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Third quarter 1998 |  |  |  |  |  |
| Business: |  |  |  |  |  |  |
| Previous | 3.1 | 4.3 | 1.1 | 3.8 | 2.0 | 0.7 |
| Current | 2.6 | 4.0 | 1.4 | 3.7 | 1.8 | 1.0 |
| Nonfarm business: |  |  |  |  |  |  |
| Previous | 3.0 | 4.2 | 1.2 | 4.1 | 2.2 | 1.1 |
| Current | 2.5 | 4.0 | 1.4 | 3.9 | 2.1 | 1.4 |
| Manufacturing: |  |  |  |  |  |  |
| Previous | 5.2 | 0.7 | -4.3 | 3.3 | 1.4 | -1.8 |
| Current | 4.7 | 0.4 | -4.1 | 3.2 | 1.3 | -1.5 |

Productivity and cost measures were revised to reflect the results of the 1997 Hours at Work Survey, which are now available. This survey is used to adjust the number of hours for which private nonfarm employees are paid (as reported in the BLS Current Establishment Survey) to hours at the workplace. For 1997, these new results show that hours of all persons increased more than had originally been reported. In the nonfarm business sector, hours of all persons grew 3.2 percent in 1997 rather than 3.0 percent, as previously reported. All of the increase in the ratio of hours at work to hours paid occurred outside of the manufacturing sector, where hours of all persons rose 1.6 percent in the calendar year. This is down slightly from the 1.7-percent rise previously reported.

In manufacturing, rates of growth in productivity for 1994-96 were revised downward due to revisions in the output measures. Unit labor costs have been revised upward by comparable amounts. (See appendix tables 1-3.) Measures of productivity, output, and unit labor costs for manufacturing were revised back to 1988 to incorporate data from the 1992 input-output table released by the Bureau of Economic Analysis, U.S. Department of Commerce. There also are small revisions to the manufacturing data for years prior to 1988. Data for all years now reflect more detailed benchmark input-output tables developed by the Office of Employment Projections of the BLS.

Revised measures: Nonfinancial Corporations
Revised productivity and cost measures for the third quarter for nonfinancial corporations also were announced today. Productivity growth was revised down as employee hours grew faster and output grew more slowly than originally reported on Dec. 3 (table D).

| Table D. Nonfinancial corporations: Previous and revised productivity and cost measures <br> Quarterly percent changes at seasonally adjusted annual rates |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Produc- <br> tivity | Output | Hours | Hourly compensation | Real <br> hourly <br> compen- <br> sation | Unit <br> labor <br> costs | Unit profits | Implicit <br> price <br> deflator |
| Third quarter 1998 |  |  |  |  |  |  |  |  |
| Previous | 4.6 | 6.2 | 1.5 | 4.2 | 2.3 | -0.4 | 3.1 | -0.1 |
| Current | 4.4 | 6.1 | 1.7 | 4.0 | 2.2 | -0.3 | 3.6 | 0.1 |

Next release date

The next release of Productivity and Costs is scheduled for 10:00 A.M. EST, Tuesday, March 9, 1999. Revised fourth-quarter measures and annual measures for business, nonfarm business, and manufacturing will be released at that time.

## TECHNICAL NOTES

Labor Hours: Hours data for the labor productivity and costs 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. Average weekly paid hours of nonproduction and supervisory workers are estimated by the Office of Productivity and Technology. 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 76 percent of the value of GDP in 1992. Nonfarm business, which also excludes farming, accounted for about 75 percent of GDP in 1992.

Annual manufacturing indexes 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, and intrasector transactions are removed. Quarterly 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 metal industries; fabricated metal products; nonelectrical machinery; industrial and 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 is an annual-weighted index constructed by excluding from GDP the following outputs: General government; nonprofit institutions; employees of private households; the rental value of owneroccupied dwellings; unincorporated business; and those corporations which are depository institutions, nondepository institutions, security and commodity brokers, insurance carriers, regulated investment offices, small business investment offices, and real estate investment trusts. Nonfinancial corporations accounted for about 52 percent of the value of GDP in 1992.

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.

Information in this release will be made available to sensory-impaired individuals upon request. Voice phone: 202-606-STAT; TDD phone: 202-606-5897; TDD message referral phone number: 1-800-326-2577.

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

| Year <br> and <br> quarter |  | Output per hour of all persons | Output | Hours <br> of all <br> persons | Compensation per hour (1) | Real <br> compensa- <br> tion per <br> hour (2) | Unit labor costs | Unit nonlabor payments (3) | Implicit price deflator <br> (4) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Indexes 1992=100 |  |  |  |  |  |  |  |  |  |
| 1996 | I | r103.0 | 112.5 | r109.2 | r108.9 | r98.5 | 105.7 | 111.9 | 107.9 |
|  | II | 103.8 | 114.2 | 110.0 | r110.4 | 98.9 | 106.3 | 112.1 | 108.4 |
|  | III | 103.8 | 114.9 | 110.7 | 111.4 | 99.3 | 107.3 | 111.5 | 108.8 |
|  | IV | 104.2 | 116.4 | r111.7 | 112.3 | r99.2 | 107.8 | 111.8 | 109.2 |
|  | ANNUAL | 103.7 | 114.5 | 110.4 | 110.7 | 99.0 | 106.8 | 111.8 | 108.6 |
| 1997 | I | r104.4 | 117.8 | r112.9 | r113.2 | r99.5 | 108.5 | 112.4 | 109.9 |
|  | II | r104.8 | 119.1 | r113.6 | r113.9 | r99.8 | 108.7 | r113.2 | 110.3 |
|  | III | r105.8 | 120.6 | r114.0 | r115.0 | r100.3 | 108.8 | 113.8 | 110.6 |
|  | IV | r106.0 | 121.7 | r114.8 | r116.5 | r101.0 | r109.9 | 112.4 | 110.8 |
| 1998 | ANNUAL | r105.2 | 119.8 | r113.8 | r114.7 | r100.3 | 109.0 | 112.9 | 110.4 |
|  | I | r107.1 | 123.7 | r115.6 | r117.9 | r102.2 | 110.2 | 112.2 | 110.9 |
|  | II | r107.1 | 124.3 | r116.1 | r119.1 | r102.7 | r111.2 | 110.5 | 111.0 |
|  | III | r107.8 | r125.5 | r116.4 | r120.2 | r103.2 | 111.5 | 110.4 | 111.1 |
|  | IV | 108.8 | 127.5 | 117.2 | 121.4 | 103.7 | 111.5 | 110.6 | 111.2 |
|  | ANNUAL | 107.7 | 125.3 | 116.3 | 119.7 | 103.0 | 111.1 | 110.9 | 111.0 |

Percent change from previous quarter at annual rate(5)

| 1996 | I | r4. 5 | 4.5 | r0.0 | r2. 6 | r-0.6 | r-1.8 | 8.5 | 1.9 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | II | r3.4 | 6.4 | 2.9 | 5.6 | 1.8 | 2.1 | 0.9 | 1.7 |
|  | III | ro. 0 | 2.5 | r2. 5 | r3.8 | r1.4 | 3.8 | -2.2 | 1.6 |
|  | IV | r1.3 | 5.1 | r3.7 | r3.1 | r-0.2 | 1.8 | 1.0 | 1.5 |
|  | ANNUAL | 2.7 | 4.2 | 1.5 | 3.6 | 0.7 | 0.9 | 2.8 | 1.6 |
| 1997 | I | r0.7 | 4.9 | r4.2 | r3. 5 | r1.3 | 2.8 | r2.1 | 2.5 |
|  | II | r1. 8 | 4.7 | r2. 8 | r2.4 | r1.1 | 0.6 | 2.8 | 1.4 |
|  | III | r3.6 | 4.9 | r1. 3 | r4.0 | r2.0 | 0.4 | r2.3 | 1.1 |
|  | IV | r0. 8 | 3.6 | 2.7 | r5. 2 | 3.1 | 4.4 | -4.8 | 0.9 |
|  | ANNUAL | r1. 5 | 4.6 | r3.1 | r3.6 | r1. 2 | 2.1 | 1.0 | 1.7 |
| 1998 | I | 4.1 | 7.1 | r2. 8 | r5.0 | 4.4 | 0.8 | -0.7 | 0.2 |
|  | II | 0.1 | 1.7 | r1.6 | 4.1 | r2.1 | 4.0 | -6.0 | 0.3 |
|  | III | r2.6 | r4.0 | r1.4 | r3.7 | r1.8 | r1.0 | -0.4 | r0. 5 |
|  | IV | 3.9 | 6.6 | 2.6 | 3.9 | 2.0 | 0.1 | 0.8 | 0.3 |
|  | ANNUAL | 2.3 | 4.6 | 2.2 | 4.3 | 2.7 | 2.0 | -1.8 | 0.6 |

Percent change from corresponding quarter of previous year

| 1996 | I | 2.5 | 3.2 | 0.7 | r3.1 | ro. 3 | 0.6 | 3.3 | 1.6 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | II | 3.1 | 4.7 | 1.6 | 3.7 | 0.8 | 0.6 | 3.4 | 1.6 |
|  | III | 2.8 | 4.2 | 1.4 | 4.0 | 1.0 | 1.1 | 2.4 | 1.6 |
|  | IV | r2.3 | 4.6 | r2.3 | r3.8 | r0.6 | r1.4 | 2.0 | 1.7 |
|  | ANNUAL | 2.7 | 4.2 | 1.5 | 3.6 | 0.7 | 0.9 | 2.8 | 1.6 |
| 1997 | I | r1.4 | 4.7 | r3. 3 | r4.0 | r1.1 | 2.6 | ro. 5 | 1.8 |
|  | II | r1.0 | 4.3 | r3.3 | r3.2 | r0.9 | r2. 2 | 0.9 | 1.8 |
|  | III | r1. 8 | 4.9 | r3.0 | r3.3 | r1.0 | 1.4 | 2.0 | 1.6 |
|  | IV | r1.7 | 4.5 | r2. 8 | r3.8 | r1.9 | 2.0 | r0.6 | 1.5 |
|  | ANNUAL | r1. 5 | 4.6 | r3.1 | r3.6 | r1.2 | 2.1 | 1.0 | 1.7 |
| 1998 | I | 2.6 | 5.1 | r2.4 | r4.1 | r2.6 | 1.5 | -0.2 | 0.9 |
|  | II | 2.1 | 4.3 | 2.1 | 4.6 | 2.9 | 2.4 | -2.4 | 0.6 |
|  | III | r1.9 | 4.1 | 2.1 | 4.5 | 2.9 | 2.5 | -3.0 | r0. 5 |
|  | IV | 2.7 | 4.8 | 2.1 | 4.2 | 2.6 | 1.5 | -1.6 | 0.3 |
|  | ANNUAL | 2.3 | 4.6 | 2.2 | 4.3 | 2.7 | 2.0 | -1.8 | 0.6 |

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

| Year <br> and <br> quarter |  | Output per hour of all persons | Output | Hours of all persons | Compensation per hour (1) | Real <br> compensa- <br> tion per <br> hour (2) | Unit labor costs | Unit nonlabor payments (3) | Implicit price deflator |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Indexes 1992=100 |  |  |  |  |  |  |  |  |  |
| 1996 | I | r103.1 | 112.8 | 109.4 | r108.7 | 98.3 | 105.4 | 112.3 | 107.9 |
|  | II | 103.8 | 114.5 | 110.3 | r110.1 | r98.7 | 106.0 | 112.3 | 108.2 |
|  | III | 103.8 | 115.2 | 111.0 | 111.0 | 98.9 | 107.0 | 111.6 | 108.6 |
|  | IV | r104.0 | 116.6 | r112.1 | r111.9 | 98.9 | 107.5 | 112.2 | 109.2 |
|  | ANNUAL | 103.7 | 114.8 | 110.7 | 110.4 | 98.7 | 106.5 | 112.1 | 108.5 |
| 1997 | I | r104.1 | 117.9 | r113.3 | r112.9 | r99.2 | 108.5 | r112.9 | 110.0 |
|  | II | r104.5 | 119.2 | r114.1 | r113.6 | r99.5 | 108.7 | r113.7 | 110.4 |
|  | III | r105.4 | 120.6 | r114.5 | r114.6 | r99.9 | 108.8 | r114.6 | 110.8 |
|  | IV | r105.6 | 121.8 | r115.3 | r116.0 | r100.6 | r109.8 | 113.3 | 111.1 |
| 1998 | ANNUAL | r104.9 | 119.9 | r114.3 | r114.3 | r99.9 | r108.9 | 113.6 | 110.6 |
|  | I | r106.6 | 123.9 | r116.3 | r117.4 | r101.7 | r110.1 | 113.2 | 111.2 |
|  | II | r106.6 | 124.4 | r116.7 | r118.5 | r102.2 | r111.1 | r111.6 | 111.3 |
|  | III | r107.3 | r125.6 | r117.1 | r119.7 | r102.7 | 111.5 | 111.4 | r111.5 |
|  | IV | 108.3 | 127.7 | 117.9 | 120.7 | 103.1 | 111.5 | 111.7 | 111.6 |
|  | ANNUAL | 107.2 | 125.4 | 117.0 | 119.1 | 102.5 | 111.1 | 112.0 | 111.4 |

Percent change from previous quarter at annual rate(5)

| 1996 | I | r4.2 | 4.2 | 0.0 | r2.7 | -0.5 | -1.5 | 7.4 | 1.7 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | II | 3.0 | 6.4 | 3.3 | 5.2 | 1.4 | 2.2 | -0.1 | 1.3 |
|  | III | r-0.1 | 2.5 | r2.6 | r3.6 | r1.2 | 3.7 | -2.3 | 1.4 |
|  | IV | r1.0 | 5.0 | r4.0 | r3.1 | r-0.3 | 2.1 | 2.3 | 2.2 |
|  | ANNUAL | 2.4 | 4.1 | 1.6 | 3.5 | 0.6 | 1.1 | 2.0 | 1.4 |
| 1997 | I | r0.1 | 4.5 | r4.4 | r3.7 | r1.4 | r3. 5 | r2.3 | 3.1 |
|  | II | r1.6 | 4.5 | r2.8 | r2.4 | r1.0 | 0.7 | 2.8 | 1.5 |
|  | III | r3.4 | 4.8 | r1.3 | r3.8 | r1.8 | 0.3 | 3.1 | 1.4 |
|  | IV | 0.9 | 4.0 | 3.0 | 4.9 | 2.8 | 4.0 | -4.3 | 0.9 |
|  | ANNUAL | r1.2 | 4.5 | r3. 2 | r3. 5 | r1. 2 | 2.3 | 1.3 | 1.9 |
| 1998 | I | r3.6 | 7.0 | r3. 3 | r4.7 | r4.2 | 1.1 | -0.3 | 0.6 |
|  | II | 0.3 | 1.7 | r1.4 | r4.1 | 2.0 | 3.7 | -5.7 | 0.2 |
|  | III | r2. 5 | r4.0 | r1.4 | r3.9 | r2.1 | r1.4 | r-0.5 | r0.7 |
|  | IV | 3.7 | 6.8 | 3.0 | 3.5 | 1.5 | -0.2 | 1.1 | 0.3 |
|  | ANNUAL | 2.2 | 4.6 | 2.4 | 4.2 | 2.6 | 2.0 | -1.4 | 0.7 |

Percent change from corresponding quarter of previous year

| 1996 | I | 2.4 | 3.2 | 0.8 | 3.0 | 0.2 | 0.6 | 2.7 | 1.4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | II | 2.9 | 4.7 | r1.7 | 3.6 | 0.7 | 0.7 | r2.3 | 1.3 |
|  | III | 2.4 | 4.1 | 1.6 | 3.8 | 0.8 | 1.3 | 1.4 | 1.3 |
|  | IV | r2.0 | 4.5 | 2.4 | r3.6 | 0.5 | 1.6 | r1.8 | 1.7 |
|  | ANNUAL | 2.4 | 4.1 | 1.6 | 3.5 | 0.6 | 1.1 | 2.0 | 1.4 |
| 1997 | I | r1.0 | 4.6 | r3. 5 | r3.9 | r0.9 | 2.9 | 0.5 | 2.0 |
|  | II | r0.7 | 4.1 | r3.4 | r3.2 | r0.8 | 2.5 | r1.3 | 2.0 |
|  | III | r1. 5 | 4.7 | r3.1 | r3.2 | r1.0 | 1.7 | 2.6 | 2.0 |
|  | IV | r1. 5 | 4.4 | r2.9 | r3.7 | r1.8 | 2.1 | 0.9 | 1.7 |
|  | ANNUAL | r1. 2 | 4.5 | r3.2 | r3. 5 | r1. 2 | 2.3 | 1.3 | 1.9 |
| 1998 | I | 2.4 | 5.1 | 2.6 | r3.9 | r2.4 | 1.5 | 0.3 | 1.1 |
|  | II | 2.0 | 4.4 | 2.3 | 4.4 | 2.7 | 2.3 | -1.9 | 0.8 |
|  | III | r1.8 | r4.1 | 2.3 | 4.4 | 2.8 | r2. 6 | -2.7 | 0.6 |
|  | IV | 2.5 | 4.8 | 2.3 | 4.0 | 2.5 | 1.5 | -1.4 | 0.5 |
|  | ANNUAL | 2.2 | 4.6 | 2.4 | 4.2 | 2.6 | 2.0 | -1.4 | 0.7 |

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


Percent change from previous quarter at annual rate(5)

| 1996 | I | r4.2 | r0. 8 | -3.3 | r-0.2 | r-3.3 | r-4.3 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | II | r4.5 | r9.6 | 4.9 | 4.1 | 0.4 | r-0.4 |
|  | III | r5.3 | r6. 4 | r1.0 | r3.2 | r0. 8 | r-2.0 |
|  | IV | 3.1 | r3. 6 | r0. 5 | r2. 6 | r-0.7 | r-0.4 |
|  | ANNUAL | r4.1 | r3.7 | -0.4 | 2.2 | -0.8 | r-1.8 |
| 1997 | I | r4.1 | 7.2 | r3.0 | r4.4 | r2.2 | 0.4 |
|  | II | r5.0 | 6.6 | r1. 5 | r3.7 | r2.3 | -1.3 |
|  | III | r9.0 | 7.7 | r-1.2 | r5.7 | r3.7 | -3.1 |
|  | IV | 4.3 | 7.5 | 3.1 | 8.0 | 5.8 | 3.6 |
|  | ANNUAL | r4.9 | r6. 5 | r1.6 | r4.2 | r1. 8 | r-0.7 |
| 1998 | I | 1.6 | 2.4 | 0.8 | r4.0 | r3. 5 | 2.4 |
|  | II | r3.9 | 2.5 | -1.4 | 2.6 | 0.6 | -1.3 |
|  | III | r4.7 | r0.4 | r-4.1 | r3.2 | r1.3 | r-1.5 |
|  | IV | 5.6 | 5.1 | -0.5 | 3.2 | 1.3 | -2.2 |
|  | ANNUAL | 4.3 | 4.2 | -0.1 | 4.5 | 2.9 | 0.2 |

Percent change from corresponding quarter of previous year

| 1996 | I | r3.7 | r1. 3 | -2.4 | r1. 8 | -0.9 | r-1.8 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | II | r3.7 | r3.6 | -0.1 | 2.1 | -0.7 | r-1.6 |
|  | III | r4.4 | r4.8 | 0.4 | 2.2 | -0.7 | r-2.1 |
|  | IV | r4.3 | r5.0 | r0.7 | 2.4 | r-0.7 | r-1.8 |
|  | ANNUAL | r4.1 | r3.7 | -0.4 | 2.2 | -0.8 | r-1.8 |
| 1997 | I | r4.2 | r6.7 | r2.3 | r3.6 | r0.7 | r-0.6 |
|  | II | r4.4 | r5.9 | r1. 5 | r3.5 | r1.1 | r-0.8 |
|  | III | r5.3 | 6.3 | r1.0 | r4.1 | r1.8 | r-1.1 |
|  | IV | r5.6 | 7.3 | r1. 6 | r5.4 | r3. 5 | -0.1 |
|  | ANNUAL | r4.9 | r6. 5 | r1. 6 | r4.2 | r1. 8 | r-0.7 |
| 1998 | I | 4.9 | 6.0 | 1.1 | 5.3 | 3.8 | 0.4 |
|  | II | 4.7 | 5.0 | 0.3 | r5.1 | 3.4 | 0.4 |
|  | III | r3.6 | 3.2 | r-0.4 | r4.4 | 2.8 | r0. 8 |
|  | IV | 3.9 | 2.6 | -1.3 | 3.2 | 1.7 | -0.7 |
|  | ANNUAL | 4.3 | 4.2 | -0.1 | 4.5 | 2.9 | 0.2 |

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


Percent change from previous quarter at annual rate(5)

| 1996 | I | r6.9 | r4.1 | -2.7 | r-2.9 | -5.8 | r-9.2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | II | r7.4 | r15.5 | 7.5 | 3.8 | 0.1 | $r-3.3$ |
|  | III | r6. 2 | r7. 7 | r1.4 | r2.7 | 0.2 | r-3.3 |
|  | IV | 3.3 | r3.9 | r0.6 | r1. 5 | r-1.8 | r-1.8 |
|  | ANNUAL | r5.9 | r6. 8 | 0.9 | 0.8 | -2.1 | $r-4.8$ |
| 1997 | I | r4.6 | 10.4 | r5. 5 | r4.0 | r1. 8 | -0.6 |
|  | II | r7.9 | 10.4 | r2.3 | r3. 5 | r2.2 | -4.1 |
|  | III | 13.0 | 12.8 | -0.2 | 5.5 | 3.5 | -6.6 |
|  | IV | 7.8 | 10.7 | 2.7 | 10.2 | r8.0 | 2.2 |
|  | ANNUAL | 6.6 | r9.4 | r2. 7 | r3.9 | r1. 5 | -2.6 |
| 1998 | I | 2.0 | 3.5 | r1. 5 | 2.6 | 2.1 | 0.6 |
|  | II | 6.6 | 4.6 | -1.8 | r1. 5 | -0.4 | -4.7 |
|  | III | r8.5 | r4.8 | -3.5 | 1.6 | r-0.2 | r-6.4 |
|  | IV | 8.4 | 8.4 | 0.0 | 3.2 | 1.3 | -4.8 |
|  | ANNUAL | 6.8 | 7.0 | 0.2 | 4.1 | 2.5 | -2.5 |

Percent change from corresponding quarter of previous year

| 1996 | I | r4.9 | r3.7 | r-1.1 | r0.3 | -2.4 | r-4.4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | II | r6.0 | r7. 5 | r1. 5 | 0.7 | -2.1 | r-5.0 |
|  | III | r6. 5 | r8. 3 | 1.7 | 0.9 | -2.0 | r-5.3 |
|  | IV | r6.0 | r7. 7 | 1.7 | r1.3 | -1.9 | r-4.4 |
|  | ANNUAL | r5.9 | r6. 8 | 0.9 | 0.8 | -2.1 | r-4.8 |
| 1997 | I | 5.4 | r9.3 | r3.7 | r3.0 | r0.1 | r-2.3 |
|  | II | 5.5 | 8.1 | r2.4 | r2.9 | r0.6 | r-2.4 |
|  | III | r7. 2 | 9.3 | r2.0 | r3.6 | r1.4 | -3.3 |
|  | IV | r8.3 | 11.1 | r2.5 | r5.8 | r3.8 | -2.3 |
|  | ANNUAL | 6.6 | r9.4 | r2.7 | r3.9 | r1. 5 | -2.6 |
| 1998 | I | 7.6 | 9.3 | r1. 5 | 5.4 | 3.9 | -2.0 |
|  | II | 7.3 | 7.8 | 0.5 | 4.9 | 3.2 | -2.2 |
|  | III | r6. 2 | r5.9 | -0.3 | 3.9 | 2.3 | -2.1 |
|  | IV | 6.3 | 5.3 | -1.0 | 2.2 | 0.7 | -3.8 |
|  | ANNUAL | 6.8 | 7.0 | 0.2 | 4.1 | 2.5 | -2.5 |

Table 5. Nondurable manufacturing sector: seasonally adjusted


Percent change from previous quarter at annual rate(5)

| 1996 | I | r1.7 | r-2.5 | r-4.1 | r4.1 | r0.9 | r2.3 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | II | r1.9 | r3.1 | 1.2 | 4.1 | 0.4 | r2.3 |
|  | III | r4.5 | r5.0 | ro. 4 | r4.1 | r1. 6 | r-0.4 |
|  | IV | r2.9 | r3. 2 | r0. 4 | r4. 5 | r1.1 | r1. 5 |
|  | ANNUAL | r2. 5 | r0. 3 | -2.1 | 4.1 | 1.1 | r1. 6 |
| 1997 | I | r3.9 | 3.4 | r-0.5 | r4.6 | r2.4 | 0.7 |
|  | II | r1. 5 | 1.9 | r0.4 | r3. 8 | r2.4 | 2.2 |
|  | III | r4.3 | 1.7 | r-2.5 | r5.7 | r3.7 | 1.3 |
|  | IV | -0.1 | 3.6 | 3.7 | 4.6 | 2.5 | 4.7 |
|  | ANNUAL | r3.0 | 3.1 | r0.1 | r4. 5 | r2.1 | 1.4 |
| 1998 | I | 1.3 | 1.1 | -0.2 | r6. 3 | 5.8 | 5.0 |
|  | II | r0.6 | -0.2 | r-0.8 | r4.4 | 2.4 | 3.8 |
|  | III | r0.3 | r-4.7 | r-5.0 | r5.7 | r3.8 | r5.4 |
|  | IV | 2.2 | 0.9 | -1.2 | 3.1 | 1.2 | 0.9 |
|  | ANNUAL | 1.2 | 0.7 | -0.5 | 5.1 | 3.5 | 3.8 |

Percent change from corresponding quarter of previous year

| 1996 | I | r2.8 | r-1.4 | -4.1 | r4.0 | r1.2 | r1.2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | II | r1.8 | r-0.6 | -2.3 | 4.1 | 1.2 | r2.3 |
|  | III | r2. 5 | r1.0 | -1.5 | 4.1 | 1.2 | r1.6 |
|  | IV | r2.7 | r2. 2 | r-0.6 | r4.2 | r1.0 | r1.4 |
|  | ANNUAL | r2. 5 | r0. 3 | -2.1 | 4.1 | 1.1 | r1. 6 |
| 1997 | I | 3.3 | r3.7 | ro. 4 | r4.3 | r1.4 | r1.0 |
|  | II | r3.2 | r3.4 | r0. 2 | r4.2 | r1.9 | r1.0 |
|  | III | r3.1 | 2.6 | r-0.6 | r4.6 | r2.4 | r1. 5 |
|  | IV | r2. 4 | 2.6 | r0. 2 | r4.7 | r2.7 | 2.2 |
|  | ANNUAL | r3.0 | 3.1 | r0.1 | r4. 5 | r2.1 | 1.4 |
| 1998 | I | 1.7 | 2.1 | r0. 3 | r5.1 | r3.6 | 3.3 |
|  | II | 1.5 | 1.5 | 0.0 | r5.3 | 3.6 | 3.7 |
|  | III | r0. 5 | r-0.1 | r-0.6 | r5.2 | r3.6 | r4.7 |
|  | IV | 1.1 | -0.7 | -1.8 | 4.9 | 3.3 | 3.7 |
|  | ANNUAL | 1.2 | 0.7 | -0. 5 | 5.1 | 3.5 | 3.8 |

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

|  | Year <br> and <br> quarter | Output per allemployee hour | Output | Employee hours | Hourly compensation (1) | Real <br> hourly <br> compen- <br> sation(2) | Unit labor costs | Unit <br> non- <br> labor <br> costs (6) | Total unit costs (7) | Unit <br> pro- <br> fits <br> (8) | Implicit price deflator <br> (4) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Indexes | $1992=100$ |  |  |  |  |  |
| 1996 | 6 I | 106.4 | 117.3 | r110.2 | 107.7 | 97.4 | 101.2 | 98.7 | 100.6 | 153.7 | 105.4 |
|  | II | r107.3 | 119.3 | 111.2 | 109.0 | 97.7 | 101.7 | 97.9 | 100.7 | 154.1 | 105.5 |
|  | III | 108.0 | 120.9 | 111.9 | 110.1 | 98.1 | 101.9 | 97.5 | 100.8 | 155.3 | 105.7 |
|  | IV | 108.6 | 122.5 | 112.8 | r110.8 | r97.9 | 102.1 | 97.4 | 100.9 | 155.4 | 105.8 |
|  | ANNUAL | 107.6 | 120.0 | 111.5 | 109.5 | 97.9 | 101.7 | 97.9 | 100.7 | 154.6 | 105.6 |
| 1997 | 7 I | r108.9 | 124.3 | r114.1 | 111.8 | r98.2 | 102.6 | 97.3 | 101.2 | 156.6 | 106.2 |
|  | II | r109.6 | 126.2 | r115.2 | r112.5 | r98.5 | 102.6 | 97.1 | 101.2 | 157.3 | 106.3 |
|  | III | r111.1 | 128.7 | r115.9 | r113.6 | r99.0 | 102.3 | 96.4 | 100.7 | 161.7 | 106.3 |
|  | IV | r111.3 | 130.2 | r117.0 | r115.0 | r99.7 | 103.3 | 95.7 | 101.3 | 155.7 | 106.3 |
|  | ANNUAL | r110.3 | 127.3 | r115.4 | r113.3 | r99.0 | 102.7 | 96.6 | 101.1 | 157.8 | 106.3 |
| 1998 | I | r112.1 | 132.1 | r117.9 | r116.0 | r100.5 | 103.5 | 95.4 | 101.4 | 153.5 | 106.2 |
|  | II | r112.9 | 133.4 | r118.1 | r117.3 | r101.1 | 103.9 | 95.5 | 101.7 | 150.4 | 106.1 |
|  | III | r114.1 | 135.4 | r118.6 | r118.5 | r101.7 | 103.8 | 95.2 | 101.6 | r151.8 | 106.1 |
| Percent change from previous quarter at annual rate(5) |  |  |  |  |  |  |  |  |  |  |  |
| 1996 | 6 I | r1. 3 | 1.4 | r0.1 | 1.7 | r-1.4 | 0.4 | -0.7 | 0.1 | 13.1 | 1.7 |
|  | II | 3.3 | 6.9 | 3.5 | 5.0 | 1.2 | 1.7 | -2.9 | 0.5 | 1.1 | 0.6 |
|  | III | 2.9 | 5.6 | 2.6 | r3.8 | 1.4 | 0.9 | -1.7 | 0.3 | 3.0 | 0.6 |
|  | IV | r2.0 | 5.5 | r3.4 | r2.8 | r-0.5 | 0.7 | -0.5 | 0.4 | 0.3 | 0.4 |
| 1997 | ANNUAL | 2.8 | 4.5 | 1.7 | 3.1 | 0.2 | 0.3 | -1.1 | -0.1 | 7.7 | 0.9 |
|  | 7 I | r1.3 | 5.9 | r4.5 | r3.4 | r1.2 | 2.0 | -0.6 | 1.4 | 3.2 | 1.6 |
|  | II | r2.3 | 6.3 | r3.9 | r2.5 | r1. 2 | 0.2 | -0.6 | 0.0 | 1.7 | 0.2 |
|  | III | 5.6 | 8.2 | r2.5 | r4.1 | 2.2 | -1.3 | -3.1 | -1.8 | 11.8 | 0.0 |
|  | IV | 1.0 | 4.8 | 3.8 | 5.0 | 2.9 | 4.0 | -2.7 | 2.3 | -14.1 | -0.1 |
| 1998 | ANNUAL | r2. 5 | 6.1 | r3. 6 | r3. 5 | r1.1 | 1.0 | -1.3 | 0.4 | 2.1 | 0.6 |
|  | I | r2.7 | 5.9 | 3.2 | 3.6 | 3.1 | 0.9 | -1.1 | 0.4 | -5.6 | -0.4 |
|  | II | 3.1 | 4.0 | 0.9 | 4.6 | r2.6 | 1.5 | 0.1 | 1.1 | -7.7 | -0.1 |
|  | III | r4.4 | r6.1 | r1.7 | r4.0 | r2. 2 | r-0.3 | r-0.9 | r-0.4 | r3.6 | r0.1 |


| 1996 | I | r3.0 | 3.9 | r0.9 | 2.5 | -0.3 | -0.4 | -0.6 | -0. 5 | 11.5 | 0.9 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | II | 3.2 | 4.9 | r1. 6 | 3.1 | 0.2 | -0.1 | -1.6 | -0. 5 | 11.1 | 0.9 |
|  | III | 2.6 | 4.4 | 1.8 | 3.4 | r0.4 | 0.8 | -0.9 | 0.3 | 4.5 | 0.9 |
|  | IV | 2.4 | 4.8 | 2.4 | r3.3 | 0.2 | 0.9 | -1.4 | 0.3 | 4.3 | 0.8 |
|  | ANNUAL | 2.8 | 4.5 | 1.7 | 3.1 | 0.2 | 0.3 | -1.1 | -0.1 | 7.7 | 0.9 |
| 1997 | I | r2.4 | 5.9 | r3. 5 | r3.7 | r0. 8 | 1.3 | -1.4 | 0.6 | 1.9 | 0.8 |
|  | II | r2.1 | 5.8 | r3.6 | r3.1 | r0. 8 | 1.0 | -0.8 | 0.5 | 2.0 | 0.7 |
|  | III | r2.8 | 6.4 | r3.5 | r3.2 | r1.0 | 0.4 | -1.2 | 0.0 | 4.2 | 0.5 |
|  | IV | r2.5 | 6.3 | r3.6 | r3.8 | r1. 8 | 1.2 | -1.8 | 0.5 | 0.2 | 0.4 |
|  | ANNUAL | r2. 5 | 6.1 | r3.6 | r3. 5 | r1.1 | 1.0 | -1.3 | 0.4 | 2.1 | 0.6 |
| 1998 | I | 2.9 | 6.3 | 3.3 | r3. 8 | r2. 3 | 0.9 | -1.9 | 0.2 | -2.0 | -0.1 |
|  | II | 3.1 | 5.7 | 2.6 | 4.3 | 2.7 | 1.2 | -1.7 | 0.5 | -4.3 | -0.1 |
|  | III | 2.8 | 5.2 | r2.4 | 4.3 | 2.7 | 1.5 | r-1.1 | 0.8 | r-6.2 | r-0.1 |

See footnotes following Table 6.
February 9, 1999
r=revised
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. 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 -1.3 and +1.4 index points approximately 95 percent of the time. This interval is based on the performance of this measure between the fourth quarter of 1995 and the third quarter of 1998.

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 selfemployed.
(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 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.

Appendix table 1. Manufacturing sector: Productivity, hourly compensation, and unit labor costs, seasonally adjusted

|  |  |  | Real |  |
| :--- | :--- | :--- | :--- | :--- |
| Year | Output per | Hours | Compensa- | compensa- |
| and | hour of | of all | tion per | tion per |
| quarter | all persons | Output | persons | hour (1) |

Indexes 1992=100

| 1993 | I | 102.1 | 102.9 | 100.8 | 101.5 | 99.5 | 99.5 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | II | 102.1 | 103.3 | 101.2 | 102.5 | 99.7 | 100.4 |
|  | III | 101.8 | 103.3 | 101.5 | 103.4 | 100.1 | 101.6 |
|  | IV | 102.8 | 104.9 | 102.0 | 104.3 | 100.2 | 101.4 |
|  | ANNUAL | 102.2 | 103.6 | 101.4 | 102.9 | 99.9 | 100.7 |
| 1994 | I | 104.0 | 106.3 | 102.2 | 105.3 | 100.7 | 101.2 |
|  | II | 105.2 | 108.4 | 103.1 | 105.3 | 100.0 | 100.1 |
|  | III | 105.5 | 109.7 | 104.0 | 105.9 | 99.7 | 100.4 |
|  | IV | 106.5 | 111.9 | 105.1 | 106.7 | 99.8 | 100.2 |
|  | ANNUAL | 105.3 | 109.1 | 103.6 | 105.8 | 100.1 | 100.5 |
| 1995 | I | 107.9 | 113.4 | 105.1 | 107.2 | 99.7 | 99.4 |
|  | II | 109.1 | 113.4 | 103.9 | 108.0 | 99.6 | 99.0 |
|  | III | 109.8 | 113.9 | 103.7 | 108.8 | 99.8 | 99.1 |
|  | IV | 110.8 | 114.6 | 103.5 | 109.3 | 99.6 | 98.6 |
|  | ANNUAL | 109.4 | 113.8 | 104.0 | 108.3 | 99.7 | 99.0 |

Percent change from previous quarter at annual rate(5)

| 1993 | I | 3.1 | 4.7 | 1.5 | 1.8 | -1.0 | -1.2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | II | 0.1 | 1.7 | 1.6 | 3.9 | 0.9 | 3.8 |
|  | III | -1.2 | 0.1 | 1.3 | 3.4 | 1.5 | 4.6 |
|  | IV | 4.2 | 6.3 | 2.1 | 3.7 | 0.4 | -0.4 |
|  | ANNUAL | 2.2 | 3.6 | 1.4 | 2.9 | -0.1 | 0.7 |
| 1994 | I | 4.8 | 5.6 | 0.8 | 3.8 | 1.8 | -0.9 |
|  | II | 4.5 | 8.0 | 3.3 | 0.1 | -2.4 | -4.2 |
|  | III | 1.1 | 4.9 | 3.7 | 2.2 | -1.5 | 1.1 |
|  | IV | 4.0 | 8.2 | 4.1 | 3.0 | 0.5 | -0.9 |
|  | ANNUAL | 3.0 | 5.3 | 2.2 | 2.8 | 0.2 | -0.3 |
| 1995 | I | 5.5 | 5.6 | 0.1 | 2.1 | -0.5 | -3.2 |
|  | II | 4.4 | -0.1 | -4.3 | 3.0 | -0.3 | -1.3 |
|  | III | 2.6 | 1.7 | -0.9 | 2.8 | 0.6 | 0.2 |
|  | IV | 3.6 | 2.6 | -1.0 | 1.8 | -0.7 | -1.8 |
|  | ANNUAL | 3.9 | 4.3 | 0.4 | 2.4 | -0.4 | -1.4 |

Percent change from corresponding quarter of previous year

| 1993 | I | 3.7 | 5.0 | 1.3 | 2.9 | -0.2 | -0.8 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | II | 2.5 | 3.6 | 1.0 | 2.8 | -0.3 | 0.3 |
|  | III | 1.0 | 2.6 | 1.6 | 2.7 | -0.1 | 1.6 |
|  | IV | 1.5 | 3.2 | 1.6 | 3.2 | 0.5 | 1.7 |
|  | ANNUAL | 2.2 | 3.6 | 1.4 | 2.9 | -0.1 | 0.7 |
| 1994 | I | 1.9 | 3.4 | 1.4 | 3.7 | 1.2 | 1.8 |
|  | II | 3.0 | 4.9 | 1.9 | 2.7 | 0.3 | -0.3 |
|  | III | 3.6 | 6.2 | 2.5 | 2.4 | -0.4 | -1.1 |
|  | IV | 3.6 | 6.6 | 3.0 | 2.3 | -0.4 | -1.3 |
|  | ANNUAL | 3.0 | 5.3 | 2.2 | 2.8 | 0.2 | -0.3 |
| 1995 | I | 3.8 | 6.7 | 2.8 | 1.9 | -1.0 | -1. 8 |
|  | II | 3.7 | 4.6 | 0.8 | 2.6 | -0.4 | -1.1 |
|  | III | 4.1 | 3.8 | -0.3 | 2.7 | 0.1 | -1.3 |
|  | IV | 4.0 | 2.4 | -1. 5 | 2.4 | -0.2 | -1.5 |
|  | ANNUAL | 3.9 | 4.3 | 0.4 | 2.4 | -0.4 | -1.4 |

Appendix table 2. Durable manufacturing sector: Productivity, hourly compensation, and unit labor costs, seasonally adjusted

|  | Year <br> and <br> quarter | Output per hour of all persons | Output | Hours <br> of all <br> persons | Compensation per hour (1) | Real <br> compensa- <br> tion per <br> hour (2) | Unit labor costs |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Indexes 1992=100 |  |  |  |  |  |  |
| 1993 | I | 103.4 | 104.1 | 100.7 | 101.6 | 99.6 | 98.3 |
|  | II | 104.2 | 105.2 | 101.0 | 102.8 | 100.0 | 98.7 |
|  | III | 103.5 | 105.2 | 101.7 | 103.6 | 100.3 | 100.1 |
|  | IV | 105.8 | 108.4 | 102.5 | 104.6 | 100.5 | 98.9 |
|  | ANNUAL | 104.2 | 105.7 | 101.5 | 103.2 | 100.2 | 99.0 |
| 1994 | I | 107.4 | 110.6 | 103.0 | 105.4 | 100.8 | 98.1 |
|  | II | 108.8 | 113.1 | 104.0 | 105.3 | 100.0 | 96.8 |
|  | III | 109.7 | 115.5 | 105.3 | 105.7 | 99.5 | 96.4 |
|  | IV | 110.9 | 118.3 | 106.7 | 106.5 | 99.7 | 96.0 |
|  | ANNUAL | 109.2 | 114.4 | 104.7 | 105.7 | 100.1 | 96.8 |
| 1995 | I | 113.1 | 120.7 | 106.7 | 107.1 | 99.6 | 94.7 |
|  | II | 114.1 | 120.8 | 105.9 | 107.7 | 99.3 | 94.4 |
|  | III | 115.2 | 122.1 | 106.1 | 108.2 | 99.2 | 94.0 |
|  | IV | 116.7 | 124.0 | 106.2 | 108.2 | 98.7 | 92.7 |
|  | ANNUAL | 114.8 | 121.9 | 106.2 | 107.8 | 99.3 | 93.9 |

Percent change from previous quarter at annual rate(5)

| 1993 | I | 6.0 | 7.8 | 1.7 | 2.6 | -0.3 | -3.2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | II | 3.0 | 4.0 | 1.0 | 4.5 | 1.5 | 1.5 |
|  | III | -2.6 | 0.3 | 3.0 | 3.2 | 1.3 | 5.9 |
|  | IV | 9.2 | 12.5 | 3.0 | 4.2 | 0.9 | -4.6 |
|  | ANNUAL | 4.2 | 5.7 | 1.5 | 3.2 | 0.2 | -1.0 |
| 1994 | I | 6.5 | 8.5 | 1.9 | 3.0 | 1.1 | -3.3 |
|  | II | 5.1 | 9.4 | 4.0 | -0. 5 | -3.0 | -5.4 |
|  | III | 3.4 | 8.6 | 5.1 | 1.7 | -2.0 | -1.6 |
|  | IV | 4.4 | 10.0 | 5.4 | 2.9 | 0.5 | -1.4 |
|  | ANNUAL | 4.8 | 8.2 | 3.2 | 2.5 | -0.1 | -2.2 |
| 1995 | I | 8.3 | 8.6 | 0.3 | 2.3 | -0.3 | -5.6 |
|  | II | 3.3 | 0.1 | -3.1 | 2.3 | -1.1 | -1.0 |
|  | III | 3.9 | 4.6 | 0.6 | 1.9 | -0.2 | -2.0 |
|  | IV | 5.6 | 6.3 | 0.6 | 0.1 | -2.3 | -5.2 |
|  | ANNUAL | 5.1 | 6.6 | 1.4 | 2.0 | -0.8 | $-3.0$ |

Percent change from corresponding quarter of previous year

| 1993 | I | 5.7 | 6.8 | 1.0 | 3.0 | -0.1 | -2.5 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | II | 4.5 | 5.4 | 0.9 | 3.0 | -0.1 | -1.4 |
|  | III | 2.9 | 4.8 | 1.8 | 2.9 | 0.1 | 0.0 |
|  | IV | 3.8 | 6.0 | 2.2 | 3.6 | 0.9 | -0.2 |
|  | ANNUAL | 4.2 | 5.7 | 1.5 | 3.2 | 0.2 | -1.0 |
| 1994 | I | 3.9 | 6.2 | 2.2 | 3.7 | 1.2 | -0.2 |
|  | II | 4.5 | 7.6 | 3.0 | 2.5 | 0.1 | -1.9 |
|  | III | 6.0 | 9.7 | 3.5 | 2.1 | -0.8 | -3.7 |
|  | IV | 4.8 | 9.1 | 4.1 | 1.8 | -0.9 | -2.9 |
|  | ANNUAL | 4.8 | 8.2 | 3.2 | 2.5 | -0.1 | -2.2 |
| 1995 | I | 5.3 | 9.1 | 3.7 | 1.6 | -1.2 | -3.5 |
|  | II | 4.8 | 6.8 | 1.9 | 2.3 | -0.7 | -2.4 |
|  | III | 5.0 | 5.8 | 0.8 | 2.3 | -0.3 | -2.5 |
|  | IV | 5.3 | 4.9 | -0.4 | 1.6 | -1.0 | -3.5 |
|  | ANNUAL | 5.1 | 6.6 | 1.4 | 2.0 | -0.8 | -3.0 |

Appendix table 3. Nondurable manufacturing sector: Productivity, hourly compensation, and unit labor costs, seasonally adjusted


Percent change from previous quarter at annual rate(5)

| 1993 | I | 0.2 | 1.6 | 1.3 | 0.7 | -2.1 | 0.5 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | II | -2.9 | -0.5 | 2.5 | 3.2 | 0.2 | 6.2 |
|  | III | 1.2 | 0.2 | -0.9 | 3.3 | 1.4 | 2.1 |
|  | IV | -0.6 | 0.3 | 0.9 | 2.7 | -0.6 | 3.3 |
|  | ANNUAL | 0.4 | 1.6 | 1.2 | 2.5 | -0.4 | 2.2 |
| 1994 | I | 3.7 | 3.0 | -0.7 | 4.8 | 2.8 | 1.1 |
|  | II | 4.3 | 6.9 | 2.4 | 0.8 | -1.7 | -3.3 |
|  | III | -0.9 | 1.0 | 2.0 | 2.8 | -0.9 | 3.7 |
|  | IV | 3.7 | 6.1 | 2.3 | 2.9 | 0.4 | -0.8 |
|  | ANNUAL | 1.7 | 2.6 | 0.9 | 3.0 | 0.4 | 1.3 |
| 1995 | I | 2.1 | 1.9 | -0.2 | 1.8 | -0.7 | -0.2 |
|  | II | 5.9 | -0.4 | -6.0 | 4.0 | 0.5 | -1.8 |
|  | III | 1.6 | -1. 5 | -3.0 | 3.8 | 1.7 | 2.2 |
|  | IV | 2.0 | -1.3 | -3.2 | 4.2 | 1.7 | 2.2 |
|  | ANNUAL | 2.8 | 1.8 | -1.0 | 2.9 | 0.0 | 0.1 |

Percent change from corresponding quarter of previous year

| 1993 | I | 1.9 | 3.6 | 1.6 | 2.8 | -0.3 | 0.9 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | II | 0.6 | 1.9 | 1.3 | 2.5 | -0.6 | 1.9 |
|  | III | -0.6 | 0.6 | 1.2 | 2.4 | -0.4 | 2.9 |
|  | IV | -0. 5 | 0.4 | 0.9 | 2.5 | -0.3 | 3.0 |
|  | ANNUAL | 0.4 | 1.6 | 1.2 | 2.5 | -0.4 | 2.2 |
| 1994 | I | 0.3 | 0.7 | 0.4 | 3.5 | 1.0 | 3.2 |
|  | II | 2.1 | 2.5 | 0.4 | 2.9 | 0.5 | 0.8 |
|  | III | 1.6 | 2.7 | 1.1 | 2.8 | -0.1 | 1.2 |
|  | IV | 2.7 | 4.2 | 1.5 | 2.8 | 0.1 | 0.1 |
|  | ANNUAL | 1.7 | 2.6 | 0.9 | 3.0 | 0.4 | 1.3 |
| 1995 | I | 2.3 | 3.9 | 1.6 | 2.1 | -0.7 | -0.2 |
|  | II | 2.7 | 2.1 | -0.5 | 2.9 | -0.2 | 0.2 |
|  | III | 3.3 | 1.5 | -1.8 | 3.1 | 0.5 | -0.2 |
|  | IV | 2.9 | -0.3 | -3.1 | 3.5 | 0.8 | 0.6 |
|  | ANNUAL | 2.8 | 1.8 | -1.0 | 2.9 | 0.0 | 0.1 |

