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PRODUCTIVITY AND COSTS  
Third Quarter 1998

The Bureau of Labor Statistics of the U.S. Department of Labor today reported revised productivity data--as measured by output per hour of all persons--for the third quarter of 1998. The seasonally adjusted annual rates of productivity growth in the third quarter were:

3.1 percent in the business sector, and  
3.0 percent in the nonfarm business sector.

These increases in labor productivity are larger than those originally reported for the quarter.

In manufacturing, revised productivity increases in the third quarter were:

5.2 percent in manufacturing,  
8.3 percent in durable goods manufacturing, and  
1.6 percent in nondurable goods manufacturing.

The third-quarter productivity increase in manufacturing occurred as output rose slightly--0.7 percent--and hours of all persons working in the sector dropped 4.3 percent. Output and hours in manufacturing, which includes about 18 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. Third-quarter measures are summarized in table A and appear in detail in tables 1 through 5.

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.

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Table A. Productivity and costs: Revised third-quarter 1998 measures  
(Seasonally adjusted annual rates)  
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Sector	Productivity	Output	Hours	Hourly compensation	Real hourly compensation	Unit labor costs
Percent change from preceding quarter						
Business	3.1	4.3	1.1	3.8	2.0	0.7
Nonfarm business	3.0	4.2	1.2	4.1	2.2	1.1
Manufacturing	5.2	0.7	-4.3	3.3	1.4	-1.8
Durable	8.3	4.5	-3.5	1.6	-0.3	-6.2
Nondurable	1.6	-3.8	-5.3	6.0	4.1	4.3
Percent change from same quarter a year ago						
Business	2.0	4.1	2.1	4.5	2.9	2.5
Nonfarm business	1.9	4.2	2.3	4.4	2.8	2.5
Manufacturing	3.8	3.2	-0.5	4.5	2.8	0.7
Durable	6.1	5.8	-0.3	3.9	2.3	-2.1
Nondurable	0.9	0.1	-0.7	5.3	3.7	4.4

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## Business

From the second quarter to the third quarter of 1998, business sector productivity rose 3.1 percent as output increased 4.3 percent and hours of all persons engaged in the sector increased 1.1 percent (seasonally adjusted annual rates). Employment in the business sector rose in the third quarter by 2.2 percent, but this increase was partially offset by a 1.1-percent decline in average weekly hours at work (table 1).

Hourly compensation increased 3.8 percent during the third quarter of 1998. This measure includes wages and salaries, supplements, employer contributions to employee benefit plans, and taxes. Real hourly compensation, which takes into account changes in the Consumer Price Index for All Urban Consumers (CPI-U), rose 2.0 percent in the third quarter of 1998.

Unit labor costs rose modestly in the third quarter, 0.7 percent. Unit labor costs had increased 4.0 percent in the second quarter of 1998. The implicit price deflator for the business sector, which reflects changes both in unit labor costs and in unit nonlabor payments, increased at a 0.3 percent annual rate in the third quarter of 1998, the same rate as in the previous quarter.

## Nonfarm business

Productivity increased 3.0 percent in the nonfarm business sector during the third quarter of 1998 as output rose 4.2 percent and hours of all persons increased 1.2 percent (table 2). As in the larger business sector, an employment increase, 2.2 percent, was mitigated by a decline in average weekly hours at work of 1.0 percent.

Hourly compensation increased at a 4.1 percent annual rate in the third quarter, similar to a 4.0 percent increase one quarter earlier. When the rise in the CPI-U is taken into account, real hourly compensation rose at a 2.2 percent annual rate in the third quarter.

Unit labor costs rose 1.1 percent in the third quarter of 1998 after increasing 3.7 percent in the second quarter. The implicit price deflator rose 0.6 percent in the third quarter of 1998. This increase reflects both the increase in unit labor costs and a 0.4 percent decline in unit nonlabor payments; labor costs account for approximately 64 percent of nonfarm business payments.

## Manufacturing

Productivity increased 5.2 percent in manufacturing in the third quarter of 1998, as output edged up 0.7 percent and hours of all persons fell 4.3 percent (seasonally adjusted annual rates). The output increase was the smallest in manufacturing since a 0.1-percent increase was posted in the second quarter of 1995. Similarly, the decrease in hours was the largest to occur in manufacturing since a 4.3-percent drop in the second quarter of 1995. Trends in productivity growth in the durable and nondurable manufacturing subsectors were very different. In durable goods industries, productivity grew 8.3 percent in the third quarter as output rose 4.5 percent and hours fell 3.5 percent. In the nondurable goods industries, third-quarter productivity grew 1.6 percent as output dropped 3.8 percent and hours fell further--5.3 percent (tables 3, 4, and 5).

Hourly compensation of all manufacturing workers rose 3.3 percent during the third quarter of 1998 (seasonally adjusted annual rates). In durable goods manufacturing, hourly compensation rose 1.6 percent during the third quarter. The increase in nondurable goods manufacturing was higher, 6.0 percent. When the increase in the CPI-U is taken into account, real hourly compensation for all manufacturing workers rose 1.4 percent in the third quarter.

Because the large increase in labor productivity more than offset the rise in hourly compensation in the manufacturing sector, unit labor costs fell at a 1.8-percent annual rate in the third quarter of 1998. Unit labor costs also fell in the previous quarter, 1.3 percent. Unit labor costs fell 6.2 percent in durable goods manufacturing in the third quarter of 1998. In nondurable goods manufacturing, however, unit labor costs in the third quarter rose 4.3 percent.

#### Nonfinancial Corporations

Third-quarter 1998 measures of productivity and costs also were announced for nonfinancial corporations (tables B and 6). Output per all-employee hour rose at a 4.6 percent annual rate, reflecting increases of 6.2 percent in output and 1.5 percent in hours of all employees. The sector includes all corporations doing business in the United States, except those classified as depository institutions, nondepository institutions, security and commodity brokers, insurance carriers, regulated investment offices, small business investment offices, and real estate investment trusts.

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Table B. Nonfinancial corporations: Third-quarter 1998 productivity and cost measures  
(Seasonally adjusted annual rates)  
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Period	Productivity	Output	Hours	Hourly compensation	Real hourly compensation	Unit labor costs	Unit profits	Implicit price deflator
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Percent change from preceding quarter								
1998 III	4.6	6.2	1.5	4.2	2.3	-0.4	3.1	-0.1
-----								
Percent change from same quarter a year ago								
1998 III	2.8	5.2	2.3	4.3	2.7	1.5	-6.3	-0.2
-----								

Hourly compensation increased 4.2 percent in the third quarter; it had risen 4.6 percent in the second quarter. When the rise in the CPI-U is taken into account, real hourly compensation increased 2.3 percent in the third quarter.

Both unit labor costs and unit nonlabor costs fell slightly during the third quarter of 1998. Unit labor costs for nonfinancial corporations dropped 0.4 percent in the third quarter, the first decrease since the third quarter of 1997 (when they fell 1.3 percent). Unit nonlabor costs fell 1.1 percent in the third quarter. Unit profits rose at a 3.1 percent annual rate. This was the first increase in unit profits since they rose 11.8 percent in the third quarter of 1997. The implicit price deflator for the output of nonfinancial corporations declined 0.1 percent in both the second and third quarters of 1998.

#### 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. In the business and nonfarm business sectors, increases in productivity and output are larger than those reported on Nov. 10, based on the information available at that time. Unit labor cost measures for these sectors are correspondingly lower.

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Table C. Previous and revised productivity and related measures  
Quarterly percent change at seasonally adjusted annual rate  
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Sector	Productivity	Output	Hours	Hourly compensation	Real hourly compensation	Unit labor costs
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Third quarter 1998						
Business:						
Previous	2.4	3.5	1.1	3.8	1.9	1.4
Current	3.1	4.3	1.1	3.8	2.0	0.7
Nonfarm business:						
Previous	2.3	3.5	1.2	4.0	2.2	1.7
Current	3.0	4.2	1.2	4.1	2.2	1.1
Manufacturing:						
Previous	3.7	-0.6	-4.1	2.9	1.1	-0.7
Current	5.2	0.7	-4.3	3.3	1.4	-1.8
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In manufacturing, rates of growth in productivity were revised sharply upward in the third quarter due to revisions in the output measures. Unit labor costs were revised downward by similar amounts (tables 3-5 and appendix tables 1-3). The quarterly measures of productivity, output, and unit labor costs for manufacturing were revised back to 1992 due to the incorporation of revised indexes of industrial production. Annual measures for 1997 also were affected. These indexes, published by the Board of Governors of the Federal Reserve System, were changed to incorporate additional and revised source data and updated information on seasonal trends. (See Federal Reserve Statistical Release G.17, "Industrial production and capacity utilization: a revision," Nov. 24, 1998.)

#### Next release date

The next release of Productivity and Costs is scheduled for 10:00 AM EST, Tuesday, February 9, 1999. Preliminary fourth-quarter and annual 1998 measures will be released at that time.

Scheduled release dates for productivity and costs measures for major sectors of the U.S. economy in 1999 are:

Reference period	1999 release date
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1998:	
Fourth quarter, Annual	February 9
Fourth quarter, Annual (revised)	March 9
1999:	
First quarter	May 11
First quarter (revised)	June 8
Second quarter	August 5
Second quarter (revised)	September 2
Third quarter	November 12
Third quarter (revised)	December 7
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These dates are based on presently available schedules for the release of underlying source data in 1999. Each issue of Productivity and Costs contains a "Next release date" paragraph which readers should use to confirm the dates above.

## 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; non-electrical 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 owner-occupied 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 and quarter	Output per hour of all persons	Output	Hours of all persons	Compensation per hour (1)	Real compensation per hour (2)	Unit labor costs	Unit non-labor payments (3)	Implicit price deflator (4)
Indexes 1992=100								
1996	I	102.9	112.5	109.3	108.8	98.4	105.7	111.9
	II	103.8	114.2	110.0	110.3	98.9	106.3	112.1
	III	103.8	114.9	110.7	111.4	99.3	107.3	111.5
	IV	104.2	116.4	111.6	112.3	99.3	107.8	111.8
	ANNUAL	103.7	114.5	110.4	110.7	99.0	106.8	111.8
1997	I	104.5	117.8	112.7	113.4	99.7	108.5	112.4
	II	105.0	119.1	113.4	114.1	100.0	108.7	113.1
	III	106.0	120.6	113.8	115.3	100.5	108.8	113.8
	IV	106.2	121.7	114.5	116.8	101.3	110.0	112.4
	ANNUAL	105.4	119.8	113.6	114.9	100.5	109.0	112.9
1998	I	107.3	123.7	115.4	118.2	102.4	110.2	112.2
	II	107.3	124.3	115.8	119.4	102.9	111.3	110.5
	III	r108.1	r125.6	116.2	120.5	r111.5	r110.4	111.1
Percent change from previous quarter at annual rate(5)								
1996	I	4.4	4.5	0.1	2.5	-0.7	-1.9	8.5
	II	3.5	6.4	2.9	5.6	1.8	2.1	0.9
	III	0.1	2.5	2.4	4.0	1.5	3.8	-2.2
	IV	1.5	5.1	3.5	3.4	0.0	1.8	1.0
	ANNUAL	2.7	4.2	1.5	3.6	0.7	0.9	2.8
1997	I	1.0	4.9	3.9	3.9	1.7	2.8	2.0
	II	2.0	4.7	2.6	2.6	1.3	0.6	2.8
	III	3.7	4.9	1.2	4.1	2.1	0.4	2.2
	IV	0.9	3.6	2.7	5.3	3.1	4.4	-4.8
	ANNUAL	1.7	4.6	2.9	3.8	1.5	2.1	1.0
1998	I	4.1	7.1	2.9	4.9	4.4	0.8	-0.7
	II	0.1	1.7	1.7	4.1	2.0	4.0	-6.0
	III	r3.1	r4.3	1.1	3.8	r2.0	r0.7	r-0.4
Percent change from corresponding quarter of previous year								
1996	I	2.5	3.2	0.7	3.0	0.2	0.6	3.3
	II	3.1	4.7	1.6	3.7	0.8	0.6	3.4
	III	2.8	4.2	1.4	4.0	1.0	1.1	2.4
	IV	2.4	4.6	2.2	3.9	0.7	1.5	2.0
	ANNUAL	2.7	4.2	1.5	3.6	0.7	0.9	2.8
1997	I	1.5	4.7	3.2	4.2	1.2	2.6	0.4
	II	1.2	4.3	3.1	3.5	1.1	2.3	0.9
	III	2.1	4.9	2.8	3.5	1.3	1.4	2.0
	IV	1.9	4.5	2.6	4.0	2.0	2.0	0.5
	ANNUAL	1.7	4.6	2.9	3.8	1.5	2.1	1.0
1998	I	2.6	5.1	2.3	4.2	2.7	1.5	-0.2
	II	2.1	4.3	2.1	4.6	2.9	2.4	-2.4
	III	r2.0	r4.1	2.1	4.5	2.9	r2.5	r-3.0

See footnotes following Table 6.

r=revised

December 3, 1998

Source: Bureau of Labor Statistics

Table 2. Nonfarm business sector: Productivity, hourly compensation, unit labor costs, 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 costs	Unit non-labor payments (3)	Implicit price deflator (4)
Indexes 1992=100									
1996	I	103.0	112.8	109.4	108.6	98.3	105.4	112.3	107.9
	II	103.8	114.5	110.3	110.0	98.6	106.0	112.3	108.2
	III	103.8	115.2	111.0	111.0	98.9	107.0	111.6	108.6
	IV	104.1	116.6	112.0	112.0	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	104.2	117.9	113.1	113.1	99.4	108.5	112.8	110.0
	II	104.7	119.2	113.9	113.8	99.7	108.7	113.6	110.4
	III	105.6	120.6	114.2	114.9	100.2	108.8	114.5	110.8
	IV	105.9	121.8	115.1	116.3	100.9	109.9	113.3	111.1
	ANNUAL	105.1	119.9	114.1	114.5	100.1	109.0	113.6	110.6
1998	I	106.8	123.9	116.0	117.6	101.9	110.2	113.2	111.2
	II	106.8	124.4	116.4	118.8	102.4	111.2	111.5	111.3
	III	r107.6	r125.7	116.8	120.0	r103.0	r111.5	r111.4	r111.4
Percent change from previous quarter at annual rate(5)									
1996	I	4.1	4.2	0.0	2.6	-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	0.0	2.5	2.4	3.7	1.3	3.7	-2.3	1.4
	IV	1.2	5.0	3.7	3.3	0.0	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	0.5	4.5	4.1	4.0	1.8	3.6	2.2	3.1
	II	1.8	4.5	2.6	2.6	1.2	0.7	2.8	1.5
	III	3.6	4.8	1.2	3.9	2.0	0.3	3.1	1.4
	IV	0.9	4.0	3.0	4.9	2.8	4.0	-4.3	0.9
	ANNUAL	1.4	4.5	3.0	3.7	1.4	2.3	1.3	1.9
1998	I	3.5	7.0	3.4	4.6	4.1	1.1	-0.3	0.6
	II	0.3	1.7	1.5	4.0	2.0	3.7	-5.7	0.2
	III	r3.0	r4.2	1.2	r4.1	2.2	r1.1	r-0.4	0.6
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	1.8	3.6	0.7	0.7	2.4	1.3
	III	2.4	4.1	1.6	3.8	0.8	1.3	1.4	1.3
	IV	2.1	4.5	2.4	3.7	0.5	1.6	1.7	1.7
	ANNUAL	2.4	4.1	1.6	3.5	0.6	1.1	2.0	1.4
1997	I	1.2	4.6	3.4	4.1	1.1	2.9	0.5	2.0
	II	0.9	4.1	3.2	3.4	1.1	2.5	1.2	2.0
	III	1.8	4.7	2.9	3.5	1.2	1.7	2.6	2.0
	IV	1.7	4.4	2.7	3.9	1.9	2.1	0.9	1.7
	ANNUAL	1.4	4.5	3.0	3.7	1.4	2.3	1.3	1.9
1998	I	2.4	5.1	2.6	4.0	2.5	1.5	0.3	1.1
	II	2.0	4.4	2.3	4.4	2.7	2.3	-1.9	0.8
	III	r1.9	r4.2	2.3	4.4	2.8	r2.5	r-2.7	0.6

See footnotes following Table 6.  
r=revised

December 3, 1998  
Source: Bureau of Labor Statistics

Table 3. Manufacturing sector: Productivity, hourly compensation, and unit labor costs, 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 costs
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Indexes 1992=100							
1996	I	r112.5	r115.4	102.6	109.2	98.8	r97.1
	II	r113.9	118.3	103.8	110.3	98.9	96.8
	III	r115.5	r120.2	104.1	111.2	99.1	r96.3
	IV	r116.4	r121.3	104.3	111.9	98.9	r96.1
	ANNUAL	114.6	118.8	103.7	110.7	99.0	96.6
1997	I	r117.5	r123.4	105.1	113.0	99.3	r96.2
	II	r118.8	r125.4	105.5	114.0	99.9	r95.9
	III	r121.4	r127.8	105.2	115.5	100.7	r95.2
	IV	r122.7	r130.1	106.1	117.8	102.2	r96.0
	ANNUAL	r120.1	r126.7	105.5	115.1	100.6	r95.8
1998	I	r123.2	r130.9	106.3	119.0	103.1	r96.6
	II	r124.4	r131.7	105.9	119.7	103.2	r96.3
	III	r126.0	r131.9	r104.7	r120.7	r103.6	r95.8
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Percent change from previous quarter at annual rate(5)							
1996	I	r5.0	r1.5	-3.3	-0.1	-3.2	r-4.9
	II	r5.0	r10.2	4.9	4.1	0.4	r-0.9
	III	r5.6	r6.7	1.1	3.1	0.7	r-2.3
	IV	r3.1	r3.8	0.7	2.5	-0.9	r-0.6
	ANNUAL	4.5	4.2	-0.4	2.2	-0.8	-2.3
1997	I	r3.8	r7.2	3.3	4.2	2.0	r0.4
	II	r4.8	r6.6	1.7	3.5	2.1	r-1.3
	III	r8.9	r7.7	-1.1	5.6	3.6	r-3.1
	IV	r4.3	r7.5	3.1	8.0	5.8	r3.6
	ANNUAL	r4.8	r6.6	1.7	4.0	1.7	r-0.8
1998	I	r1.6	r2.4	0.8	4.1	3.6	r2.4
	II	r4.0	r2.5	-1.4	2.6	0.6	r-1.3
	III	r5.2	r0.7	r-4.3	r3.3	r1.4	r-1.8
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Percent change from corresponding quarter of previous year							
1996	I	r4.2	r1.7	-2.4	1.9	-0.9	r-2.2
	II	r4.3	r4.1	-0.1	2.1	-0.7	r-2.1
	III	r4.9	r5.3	0.4	2.2	-0.7	r-2.6
	IV	r4.7	r5.5	0.8	2.4	-0.8	r-2.2
	ANNUAL	4.5	4.2	-0.4	2.2	-0.8	-2.3
1997	I	r4.4	r6.9	2.5	3.5	0.5	r-0.9
	II	r4.3	r6.1	1.7	3.3	1.0	r-1.0
	III	r5.1	r6.3	1.1	3.9	1.7	r-1.2
	IV	r5.4	r7.3	1.7	5.3	3.4	r-0.1
	ANNUAL	r4.8	r6.6	1.7	4.0	1.7	r-0.8
1998	I	r4.9	r6.0	1.1	5.3	3.8	r0.4
	II	r4.7	r5.0	0.3	5.0	3.4	r0.4
	III	r3.8	r3.2	-0.5	r4.5	r2.8	r0.7
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See footnotes following Table 6.  
r=revised

December 3, 1998  
Source: Bureau of Labor Statistics



Table 4. Durable manufacturing sector: Productivity, hourly compensation, and unit labor costs, 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 costs
-----							
Indexes 1992=100							
1996	I	r119.7	r126.3	105.5	107.5	97.2	r89.8
	II	122.0	r131.0	107.4	108.5	97.2	r89.0
	III	r123.8	r133.5	107.8	109.2	97.3	r88.2
	IV	r124.8	r134.9	108.0	109.6	96.8	r87.8
	ANNUAL	122.6	131.4	107.2	108.7	97.2	88.6
1997	I	r126.2	r138.2	109.5	110.6	97.2	r87.6
	II	r128.6	r141.7	110.2	111.5	97.7	r86.7
	III	r132.6	r146.0	110.1	113.0	98.5	r85.2
	IV	r135.1	r149.8	110.9	115.8	100.4	r85.7
	ANNUAL	r130.6	r143.9	110.2	112.8	98.6	r86.3
1998	I	r135.8	r151.0	111.3	116.6	101.0	r85.8
	II	r138.0	r152.8	110.7	117.0	100.9	r84.8
	III	r140.7	r154.5	109.8	r117.5	r100.8	r83.5
-----							
Percent change from previous quarter at annual rate(5)							
1996	I	r7.4	r4.5	-2.7	-2.8	-5.8	r-9.5
	II	r7.7	r15.9	7.5	3.8	0.1	r-3.6
	III	r6.3	r7.9	1.5	2.6	0.2	r-3.5
	IV	r3.3	r4.0	0.7	1.4	-1.9	r-1.9
	ANNUAL	6.2	7.1	0.9	0.8	-2.1	-5.0
1997	I	r4.4	r10.4	5.7	3.9	1.6	r-0.6
	II	r7.8	r10.4	2.4	3.4	2.0	r-4.1
	III	r13.0	r12.8	-0.2	5.5	3.5	r-6.6
	IV	r7.8	r10.7	2.7	10.2	7.9	r2.2
	ANNUAL	r6.6	r9.5	2.8	3.7	1.4	r-2.6
1998	I	r2.0	r3.5	1.4	2.6	2.1	r0.6
	II	r6.6	r4.6	-1.8	1.6	-0.4	r-4.7
	III	r8.3	r4.5	r-3.5	r1.6	r-0.3	r-6.2
-----							
Percent change from corresponding quarter of previous year							
1996	I	r5.3	r4.0	-1.2	0.4	-2.4	r-4.7
	II	r6.3	r7.9	1.4	0.7	-2.1	r-5.3
	III	r6.9	r8.6	1.7	0.9	-2.0	r-5.6
	IV	r6.2	r8.0	1.7	1.2	-1.9	r-4.7
	ANNUAL	6.2	7.1	0.9	0.8	-2.1	-5.0
1997	I	r5.4	r9.5	3.8	2.9	0.0	r-2.4
	II	r5.5	r8.1	2.6	2.8	0.5	r-2.5
	III	r7.1	r9.3	2.1	3.5	1.3	r-3.3
	IV	r8.2	r11.1	2.6	5.7	3.7	r-2.3
	ANNUAL	r6.6	r9.5	2.8	3.7	1.4	r-2.6
1998	I	r7.6	r9.3	1.6	5.4	3.9	r-2.0
	II	r7.3	r7.8	0.5	4.9	3.2	r-2.2
	III	r6.1	r5.8	-0.3	r3.9	r2.3	r-2.1
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See footnotes following Table 6.  
r=revised

December 3, 1998  
Source: Bureau of Labor Statistics

Table 5. Nondurable manufacturing sector: Productivity, hourly compensation, and unit labor costs, 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 costs
-----							
Indexes 1992=100							
1996	I	r105.7	r104.3	98.7	111.4	100.8	r105.4
	II	r106.3	r105.2	99.0	112.6	100.9	r105.9
	III	r107.5	r106.6	99.1	113.7	101.3	r105.7
	IV	r108.2	r107.4	99.3	114.8	101.5	r106.1
	ANNUAL	107.0	105.9	99.0	113.1	101.2	105.8
1997	I	r109.2	r108.3	99.2	116.1	102.0	r106.3
	II	r109.6	r108.9	99.4	117.1	102.6	r106.9
	III	r110.7	r109.3	98.8	118.7	103.5	r107.2
	IV	110.7	110.3	99.7	120.0	104.1	108.4
	ANNUAL	r110.0	r109.2	99.2	118.0	103.1	r107.2
1998	I	r111.0	r110.6	99.6	121.9	105.6	r109.8
	II	r111.2	110.5	99.4	123.2	106.2	r110.8
	III	111.6	109.5	r98.0	r125.0	r107.3	r112.0
-----							
Percent change from previous quarter at annual rate(5)							
1996	I	r2.2	r-2.1	-4.2	4.2	1.0	r1.9
	II	r2.2	r3.4	1.2	4.1	0.4	r1.9
	III	r4.7	r5.2	0.5	4.0	1.5	r-0.7
	IV	r2.7	r3.4	0.6	4.2	0.8	r1.4
	ANNUAL	2.7	0.6	-2.1	4.1	1.1	1.4
1997	I	r3.6	r3.4	-0.2	4.3	2.1	r0.7
	II	r1.3	r1.9	0.6	3.5	2.2	r2.2
	III	r4.2	r1.7	-2.4	5.6	3.6	r1.3
	IV	r-0.1	r3.6	3.7	4.6	2.5	r4.7
	ANNUAL	r2.9	r3.1	0.2	4.3	1.9	r1.4
1998	I	r1.3	r1.1	-0.2	6.4	5.8	r5.0
	II	r0.7	r-0.2	-0.9	4.5	2.4	r3.8
	III	r1.6	r-3.8	r-5.3	r6.0	r4.1	r4.3
-----							
Percent change from corresponding quarter of previous year							
1996	I	r3.0	r-1.3	-4.1	4.1	1.3	r1.1
	II	r2.1	r-0.3	-2.3	4.1	1.2	r2.0
	III	r2.8	r1.3	-1.5	4.1	1.2	r1.3
	IV	r2.9	r2.4	-0.5	4.1	0.9	r1.1
	ANNUAL	2.7	0.6	-2.1	4.1	1.1	1.4
1997	I	r3.3	r3.8	0.5	4.2	1.2	r0.8
	II	r3.1	r3.5	0.4	4.0	1.7	r0.9
	III	r2.9	r2.6	-0.4	4.4	2.2	r1.4
	IV	2.2	2.6	0.4	4.5	2.6	2.2
	ANNUAL	r2.9	r3.1	0.2	4.3	1.9	r1.4
1998	I	r1.7	r2.1	0.4	5.0	3.5	r3.3
	II	r1.5	r1.5	0.0	5.2	3.6	r3.7
	III	r0.9	r0.1	-0.7	r5.3	r3.7	r4.4
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See footnotes following Table 6.

r=revised

December 3, 1998

Source: Bureau of Labor Statistics

Table 6. Nonfinancial corporations: Productivity, hourly compensation, unit labor costs, 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 costs	Unit non-labor costs (6)	Total unit costs (7)	Unit profits (8)	Implicit price deflator (4)
Indexes 1992=100										
1996	I	106.4	117.3	110.3	107.7	97.4	101.2	98.7	100.6	153.7
	II	107.2	119.3	111.2	109.0	97.7	101.7	97.9	100.7	154.1
	III	108.0	120.9	111.9	110.1	98.1	101.9	97.5	100.8	155.3
	IV	108.6	122.5	112.8	110.9	98.0	102.1	97.4	100.9	155.4
	ANNUAL	107.6	120.0	111.5	109.5	97.9	101.7	97.9	100.7	154.6
1997	I	109.0	124.3	114.0	111.8	98.3	102.6	97.3	101.2	156.6
	II	109.7	126.2	115.1	112.6	98.6	102.6	97.1	101.2	157.3
	III	111.2	128.7	115.7	113.7	99.2	102.3	96.4	100.7	161.7
	IV	111.4	130.2	116.8	115.1	99.9	103.3	95.7	101.3	155.7
	ANNUAL	110.4	127.3	115.3	113.4	99.1	102.7	96.6	101.1	157.8
1998	I	112.2	132.1	117.7	116.2	100.6	103.5	95.4	101.4	153.5
	II	113.0	133.4	118.0	117.5	101.2	103.9	95.5	101.7	150.4
	III	114.3	135.4	118.4	118.7	101.8	103.8	95.2	101.6	151.6
Percent change from previous quarter at annual rate (5)										
1996	I	1.2	1.4	0.2	1.7	-1.5	0.4	-0.7	0.1	13.1
	II	3.3	6.9	3.5	5.0	1.2	1.7	-2.9	0.5	1.1
	III	2.9	5.6	2.6	3.9	1.4	0.9	-1.7	0.3	3.0
	IV	2.1	5.5	3.3	2.9	-0.4	0.7	-0.5	0.4	0.3
	ANNUAL	2.8	4.5	1.7	3.1	0.2	0.3	-1.1	-0.1	7.7
1997	I	1.5	5.9	4.3	3.6	1.3	2.0	-0.6	1.4	3.2
	II	2.5	6.3	3.8	2.6	1.3	0.2	-0.6	0.0	1.7
	III	5.6	8.2	2.4	4.2	2.2	-1.3	-3.1	-1.8	11.8
	IV	1.0	4.8	3.8	5.0	2.9	4.0	-2.7	2.3	-14.1
	ANNUAL	2.6	6.1	3.5	3.6	1.2	1.0	-1.3	0.4	2.1
1998	I	2.6	5.9	3.2	3.6	3.1	0.9	-1.1	0.4	-5.6
	II	3.1	4.0	0.9	4.6	2.5	1.5	0.1	1.1	-7.7
	III	4.6	6.2	1.5	4.2	2.3	-0.4	-1.1	-0.6	3.1
Percent change from corresponding quarter of previous year										
1996	I	2.9	3.9	1.0	2.5	-0.3	-0.4	-0.6	-0.5	11.5
	II	3.2	4.9	1.7	3.1	0.2	-0.1	-1.6	-0.5	11.1
	III	2.6	4.4	1.8	3.4	0.5	0.8	-0.9	0.3	4.5
	IV	2.4	4.8	2.4	3.4	0.2	0.9	-1.4	0.3	4.3
	ANNUAL	2.8	4.5	1.7	3.1	0.2	0.3	-1.1	-0.1	7.7
1997	I	2.5	5.9	3.4	3.8	0.9	1.3	-1.4	0.6	1.9
	II	2.3	5.8	3.5	3.2	0.9	1.0	-0.8	0.5	2.0
	III	2.9	6.4	3.4	3.3	1.1	0.4	-1.2	0.0	4.2
	IV	2.6	6.3	3.5	3.9	1.9	1.2	-1.8	0.5	0.2
	ANNUAL	2.6	6.1	3.5	3.6	1.2	1.0	-1.3	0.4	2.1
1998	I	2.9	6.3	3.3	3.9	2.4	0.9	-1.9	0.2	-2.0
	II	3.1	5.7	2.6	4.3	2.7	1.2	-1.7	0.5	-4.3
	III	2.8	5.2	2.3	4.3	2.7	1.5	-1.2	0.8	-6.3

See footnotes following Table 6.  
r=revised

December 3, 1998  
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 +1.5 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 second 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 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 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

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 costs
-----							
Indexes 1992=100							
1993	I	101.9	102.7	100.8	101.5	99.5	99.6
	II	101.9	103.1	101.2	102.5	99.7	100.6
	III	101.6	103.1	101.5	103.4	100.1	101.7
	IV	102.7	104.8	102.0	104.3	100.2	101.6
	ANNUAL	102.0	103.4	101.4	102.9	99.9	100.9
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	105.6	109.8	104.0	105.9	99.7	100.3
	IV	106.6	112.0	105.1	106.7	99.8	100.1
	ANNUAL	105.3	109.1	103.6	105.8	100.1	100.4
1995	I	108.0	113.5	105.1	107.2	99.7	99.3
	II	109.2	113.6	103.9	108.0	99.6	98.9
	III	110.0	114.1	103.7	108.8	99.8	98.8
	IV	111.2	115.0	103.4	109.3	99.6	98.3
	ANNUAL	109.6	114.1	104.0	108.3	99.7	98.8
-----							
Percent change from previous quarter at annual rate(5)							
1993	I	2.7	4.3	1.5	1.8	-1.0	-0.8
	II	-0.1	1.5	1.6	3.9	0.9	4.1
	III	-1.2	0.1	1.3	3.4	1.5	4.6
	IV	4.4	6.6	2.1	3.7	0.4	-0.6
	ANNUAL	2.0	3.4	1.4	2.9	-0.1	0.9
1994	I	5.2	6.0	0.8	3.8	1.8	-1.3
	II	4.8	8.3	3.3	0.1	-2.4	-4.5
	III	1.3	5.1	3.7	2.2	-1.5	0.9
	IV	4.0	8.3	4.1	3.0	0.5	-1.0
	ANNUAL	3.3	5.5	2.2	2.8	0.2	-0.5
1995	I	5.5	5.6	0.1	2.1	-0.5	-3.2
	II	4.6	0.1	-4.3	3.1	-0.3	-1.5
	III	2.9	2.0	-0.9	2.8	0.6	-0.2
	IV	4.2	3.1	-1.0	1.8	-0.6	-2.2
	ANNUAL	4.1	4.5	0.4	2.4	-0.4	-1.6
-----							
Percent change from corresponding quarter of previous year							
1993	I	3.6	4.9	1.3	2.9	-0.2	-0.6
	II	2.3	3.3	1.0	2.8	-0.3	0.5
	III	0.8	2.4	1.6	2.7	-0.1	1.9
	IV	1.4	3.1	1.6	3.2	0.5	1.8
	ANNUAL	2.0	3.4	1.4	2.9	-0.1	0.9
1994	I	2.0	3.5	1.4	3.7	1.2	1.6
	II	3.3	5.2	1.9	2.7	0.3	-0.5
	III	3.9	6.5	2.5	2.4	-0.4	-1.4
	IV	3.8	6.9	3.0	2.3	-0.4	-1.5
	ANNUAL	3.3	5.5	2.2	2.8	0.2	-0.5
1995	I	3.9	6.8	2.8	1.8	-1.0	-2.0
	II	3.8	4.7	0.8	2.6	-0.4	-1.2
	III	4.3	3.9	-0.3	2.7	0.1	-1.5
	IV	4.3	2.7	-1.5	2.4	-0.2	-1.8
	ANNUAL	4.1	4.5	0.4	2.4	-0.4	-1.6
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See footnotes following Table 6.

December 3, 1998

Source: Bureau of Labor Statistics

Appendix table 2. Durable manufacturing sector: Productivity, hourly compensation, and unit labor costs, 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 costs
-----							
Indexes 1992=100							
1993	I	103.7	104.5	100.7	101.6	99.6	98.0
	II	104.5	105.5	101.0	102.8	100.0	98.3
	III	103.9	105.7	101.7	103.6	100.3	99.7
	IV	106.2	108.9	102.5	104.6	100.5	98.5
	ANNUAL	104.6	106.1	101.5	103.2	100.2	98.6
1994	I	107.9	111.1	103.0	105.4	100.8	97.7
	II	109.3	113.7	104.0	105.3	100.0	96.3
	III	110.2	116.0	105.3	105.7	99.5	95.9
	IV	111.5	118.9	106.7	106.5	99.7	95.5
	ANNUAL	109.7	114.9	104.7	105.7	100.1	96.3
1995	I	113.7	121.4	106.7	107.1	99.6	94.2
	II	114.7	121.5	105.9	107.7	99.3	93.9
	III	115.9	122.9	106.1	108.2	99.2	93.4
	IV	117.6	124.9	106.2	108.2	98.7	92.1
	ANNUAL	115.5	122.7	106.2	107.8	99.3	93.4
-----							
Percent change from previous quarter at annual rate(5)							
1993	I	6.4	8.1	1.7	2.6	-0.3	-3.6
	II	3.3	4.2	1.0	4.5	1.5	1.2
	III	-2.4	0.5	3.0	3.2	1.3	5.7
	IV	9.4	12.6	3.0	4.3	1.0	-4.7
	ANNUAL	4.6	6.1	1.5	3.2	0.2	-1.4
1994	I	6.5	8.5	1.9	3.0	1.0	-3.3
	II	5.2	9.4	4.0	-0.5	-3.0	-5.4
	III	3.4	8.7	5.1	1.7	-2.0	-1.7
	IV	4.5	10.1	5.4	2.9	0.5	-1.5
	ANNUAL	4.9	8.3	3.2	2.5	-0.1	-2.3
1995	I	8.4	8.8	0.3	2.3	-0.3	-5.7
	II	3.5	0.3	-3.1	2.3	-1.1	-1.2
	III	4.2	4.8	0.6	1.9	-0.2	-2.2
	IV	6.0	6.6	0.6	0.1	-2.3	-5.5
	ANNUAL	5.2	6.7	1.4	2.0	-0.8	-3.1
-----							
Percent change from corresponding quarter of previous year							
1993	I	6.3	7.4	1.0	3.0	-0.1	-3.1
	II	4.9	5.9	0.9	3.0	-0.1	-1.8
	III	3.2	5.1	1.8	2.9	0.1	-0.3
	IV	4.0	6.3	2.2	3.6	0.9	-0.4
	ANNUAL	4.6	6.1	1.5	3.2	0.2	-1.4
1994	I	4.1	6.4	2.2	3.7	1.2	-0.3
	II	4.6	7.7	3.0	2.5	0.1	-2.0
	III	6.1	9.8	3.5	2.1	-0.8	-3.8
	IV	4.9	9.2	4.1	1.8	-0.9	-3.0
	ANNUAL	4.9	8.3	3.2	2.5	-0.1	-2.3
1995	I	5.4	9.2	3.7	1.6	-1.2	-3.6
	II	4.9	6.9	1.9	2.3	-0.7	-2.5
	III	5.1	5.9	0.8	2.3	-0.3	-2.7
	IV	5.5	5.1	-0.4	1.6	-1.0	-3.7
	ANNUAL	5.2	6.7	1.4	2.0	-0.8	-3.1
-----							

See footnotes following Table 6.

December 3, 1998

Source: Bureau of Labor Statistics

Appendix table 3. Nondurable manufacturing sector: Productivity, hourly compensation, and unit labor costs, 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 costs
Indexes 1992=100							
1993	I	100.3	101.1	100.8	101.3	99.3	101.1
	II	99.4	100.8	101.5	102.1	99.4	102.8
	III	99.6	100.8	101.2	103.0	99.7	103.4
	IV	99.4	100.9	101.5	103.7	99.6	104.3
	ANNUAL	99.6	100.9	101.2	102.5	99.6	102.9
1994	I	100.4	101.7	101.3	104.9	100.3	104.4
	II	101.5	103.5	101.9	105.1	99.9	103.5
	III	101.3	103.7	102.4	105.8	99.6	104.4
	IV	102.2	105.2	103.0	106.6	99.7	104.3
	ANNUAL	101.4	103.5	102.1	105.6	100.0	104.2
1995	I	102.7	105.7	102.9	107.1	99.5	104.3
	II	104.1	105.5	101.3	108.1	99.7	103.8
	III	104.5	105.1	100.6	109.1	100.1	104.4
	IV	105.1	104.9	99.7	110.3	100.5	104.9
	ANNUAL	104.1	105.3	101.1	108.6	100.0	104.3
Percent change from previous quarter at annual rate(5)							
1993	I	-0.9	0.5	1.3	0.7	-2.1	1.6
	II	-3.6	-1.2	2.5	3.2	0.2	7.0
	III	0.8	-0.1	-0.9	3.3	1.4	2.4
	IV	-0.6	0.3	0.9	2.7	-0.6	3.3
	ANNUAL	-0.4	0.9	1.2	2.5	-0.4	2.9
1994	I	4.1	3.4	-0.7	4.8	2.8	0.7
	II	4.6	7.1	2.4	0.8	-1.7	-3.6
	III	-0.9	1.1	2.0	2.8	-0.9	3.7
	IV	3.6	5.9	2.3	2.8	0.4	-0.7
	ANNUAL	1.7	2.6	0.9	3.0	0.4	1.2
1995	I	1.7	1.6	-0.1	1.8	-0.8	0.1
	II	5.8	-0.6	-6.0	4.0	0.6	-1.7
	III	1.7	-1.4	-3.0	3.9	1.7	2.2
	IV	2.3	-1.0	-3.3	4.3	1.8	1.9
	ANNUAL	2.7	1.7	-1.0	2.9	0.0	0.2
Percent change from corresponding quarter of previous year							
1993	I	1.2	2.8	1.6	2.8	-0.3	1.6
	II	-0.2	1.1	1.3	2.5	-0.6	2.7
	III	-1.3	-0.1	1.2	2.4	-0.4	3.7
	IV	-1.1	-0.1	0.9	2.5	-0.3	3.6
	ANNUAL	-0.4	0.9	1.2	2.5	-0.4	2.9
1994	I	0.2	0.6	0.4	3.5	1.0	3.3
	II	2.2	2.6	0.4	2.9	0.5	0.7
	III	1.8	2.9	1.1	2.8	-0.1	1.0
	IV	2.8	4.4	1.5	2.8	0.1	0.0
	ANNUAL	1.7	2.6	0.9	3.0	0.4	1.2
1995	I	2.2	3.9	1.6	2.1	-0.8	-0.2
	II	2.5	2.0	-0.5	2.9	-0.2	0.3
	III	3.2	1.4	-1.8	3.1	0.5	0.0
	IV	2.9	-0.4	-3.1	3.5	0.8	0.6
	ANNUAL	2.7	1.7	-1.0	2.9	0.0	0.2

See footnotes following Table 6.

December 3, 1998

Source: Bureau of Labor Statistics