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PRODUCTIVITY AND COSTS
Fourth Quarter and Annual Averages, 1998

The Bureau of Labor Statistics of the U.S. Department of Labor today reported revised fourth-quarter seasonally-adjusted annual rates of productivity change--as measured by output per hour of all persons--and revised annual changes for the full year 1998. The revised fourth-quarter productivity increases in both the business and nonfarm business sectors were the largest in six years. Percent changes in business and nonfarm business productivity were:

	Fourth quarter	Annual averages 1997-1998
Business sector	4.8	2.4
Nonfarm business sector	4.6	2.2

For the year 1998, productivity increases in both sectors were larger than those posted for 1997, but slightly less than the increases that occurred in 1996. Fourth-quarter productivity and related measures are summarized in table A and appear in detail in tables 1 through 5; the preliminary and revised fourth-quarter and annual data appear in table C.

In the manufacturing sector, increases in productivity were:

	Fourth quarter	Annual averages 1997-1998
Manufacturing	5.2	4.2
Durable goods manufacturing	8.4	6.8
Nondurable goods manufacturing	1.4	1.2

Manufacturing productivity rose at a 5.2 percent annual rate in the fourth quarter, as output grew 4.7 percent and hours of all persons fell by 0.5 percent (table A). On an annual basis, manufacturing productivity rose 4.2 percent in 1998, more slowly than it had in the previous year, when it grew 4.9 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: Revised fourth-quarter 1998 measures
(Seasonally adjusted annual rates)

Sector	Productivity	Output	Hours	Hourly compensation	Real hourly compensation	Unit labor costs

	Percent change from preceding quarter					
Business	4.8	7.4	2.4	4.0	2.2	-0.8
Nonfarm business	4.6	7.5	2.8	3.5	1.7	-1.1
Manufacturing	5.2	4.7	-0.5	3.3	1.5	-1.8
Durable	8.4	8.5	0.1	3.2	1.4	-4.8
Nondurable	1.4	0.1	-1.3	3.3	1.6	1.9

	Percent change from same quarter a year ago					
Business	2.9	5.0	2.1	4.2	2.6	1.2
Nonfarm business	2.7	5.0	2.2	4.0	2.5	1.3
Manufacturing	3.8	2.5	-1.3	3.3	1.7	-0.6
Durable	6.3	5.3	-0.9	2.2	0.7	-3.9
Nondurable	0.9	-1.0	-1.8	4.9	3.3	4.0

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 data 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

Business sector productivity rose at a 4.8 percent annual rate in the fourth quarter of 1998, as output increased 7.4 percent and hours of all persons engaged in the sector increased 2.4 percent (table 1). The fourth-quarter increases in both labor productivity and output were the largest since the fourth quarter of 1992, when productivity rose 5.8 percent and output increased by 7.9 percent.

Hourly compensation during the fourth quarter of 1998 rose faster, 4.0 percent, than it had in the previous quarter, when it grew 3.7 percent. 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, decreased at a 0.8 percent annual rate during the fourth quarter. This decrease was the first since a 1.8-percent decline in the first quarter of 1996.

Real hourly compensation, which takes into account changes in the Consumer Price Index for All Urban Consumers (CPI-U), rose at a 2.2 percent annual rate for persons in the business sector. This is comparable to the increases that occurred in the previous two quarters (2.0 percent in the third quarter and 2.3 percent in the second quarter).

The implicit price deflator for business output, which reflects changes in unit labor costs and unit nonlabor payments, rose 0.2 percent in the fourth quarter. This was the fifth consecutive rise of less than 1.0 percent.

Nonfarm business

In the nonfarm business sector, productivity rose at an annual rate of 4.6 percent in the fourth quarter, as output rose 7.5 percent and hours of all persons--employees, proprietors, and unpaid family workers--rose 2.8 percent (table 2). As in the larger business sector, the fourth-quarter gains in productivity and output were the greatest since the fourth quarter of 1992, when productivity rose 6.2 percent and output grew 8.4 percent.

Hourly compensation rose 3.5 percent in the fourth quarter, less rapidly than it had in the previous five quarters. When the increase in the CPI-U was taken into account, real hourly compensation in the fourth quarter of 1998 grew 1.7 percent--also less than it had in recent quarters.

Unit labor costs fell 1.1 percent in the fourth quarter after having increased in the 10 previous quarters. The implicit price deflator for nonfarm business rose less in the fourth quarter, 0.1 percent, than it had one quarter earlier, when it increased 0.7 percent.

Manufacturing

Manufacturing productivity rose at a 5.2 percent seasonally adjusted annual rate in the fourth quarter of 1998, reflecting a 4.7 percent increase in output and a 0.5 percent drop in hours of all persons (table 3). Growth rates in productivity were dissimilar in the two manufacturing subsectors. In durable goods, productivity increased 8.4 percent in the fourth quarter, as output grew 8.5 percent and hours of all persons edged up 0.1 percent. In nondurable goods, output grew 0.1 percent and hours of all persons dropped 1.3 percent, resulting in a productivity increase of 1.4 percent (tables 4 and 5).

Hourly compensation of all manufacturing workers rose 3.3 percent during the fourth quarter. When the increase in consumer prices was taken into account, real hourly compensation in manufacturing rose 1.5 percent in the fourth quarter, as it had in the third quarter of 1998.

Unit labor costs in the manufacturing sector dropped 1.8 percent in the fourth quarter of 1998, as labor productivity gains exceeded those in hourly compensation. In durable goods, unit labor costs fell 4.8 percent in the fourth quarter, the third consecutive decline in these costs in this sector. In nondurable goods industries, unit labor costs rose 1.9 percent in the fourth quarter. This was the smallest increase in unit labor costs in nondurable goods since the third quarter of 1997, when they rose 1.3 percent.

ANNUAL AVERAGE CHANGES, 1997-1998

Business

In calendar year 1998, business productivity increased 2.4 percent, after having increased 1.5 percent in the previous year (table 1). Output grew 4.6 percent in both 1997 and 1998. However, hours of all persons in the business sector rose less in 1998, 2.2 percent, than they had in the previous year, when they rose 3.1 percent.

 Table B. Productivity and costs: Revised 1998 annual averages
 (Seasonally adjusted annual rates)

Sector	Produc- tivity	Output	Hours	Hourly compen- sation	Real hourly compen- sation	Unit labor costs
	Percent change from previous year					
Business	2.4	4.6	2.2	4.3	2.7	1.9
Nonfarm business	2.2	4.6	2.4	4.2	2.6	1.9
Manufacturing	4.2	4.1	-0.1	4.5	2.9	0.2
Durable	6.8	7.0	0.2	4.1	2.5	-2.5
Nondurable	1.2	0.6	-0.5	5.1	3.5	3.9

Hourly compensation increased 4.3 percent in 1998, after having increased 3.6 percent in 1997. Real hourly compensation also increased in both years--2.7 percent in 1998 and 1.2 percent in 1997. 1998 was the third consecutive year of growth in this series, following three years of declining real hourly compensation (1993-95).

Unit labor costs increased 1.9 percent in 1998, slightly less than the 2.1-percent increase in the previous year. The implicit price deflator rose 0.6 percent in 1998, down from the 1.7-percent increase posted in 1997.

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. In 1997, productivity rose 1.2 percent, output rose 4.5 percent, and hours of all persons grew 3.2 percent.

Hourly compensation grew 4.2 percent in 1998, more than the 3.5-percent increases in both 1997 and 1996. Moreover, because the increase in the CPI-U was smaller in 1998 than in the previous year, the increase in real hourly compensation in 1998, 2.6 percent, was considerably larger than the 1.2-percent increase in 1997. The 1998 increase in real hourly compensation was the largest since a 3.2 percent rise in 1986.

Unit labor costs in the nonfarm business sector grew 1.9 percent in 1998, slightly less than the 2.3-percent increase posted in 1997. The implicit price deflator, which reflects nonlabor payments as well as labor costs, rose 0.7 percent in 1998, compared with 1.9 percent in 1997.

Manufacturing

Manufacturing productivity grew 4.2 percent in 1998, continuing a trend of annual increases that began in 1980. Output in the manufacturing sector increased 4.1 percent in 1998, and hours of all persons fell slightly, 0.1 percent. Both output and labor productivity growth rates in 1998 were less than in 1997, when productivity rose 4.9 percent, reflecting an output gain of 6.5 percent and an increase in hours of all persons of 1.6 percent. Trends in the durable and nondurable sectors differed. In 1998, labor productivity increased 6.8 percent in durable goods manufacturing, reflecting a 7.0-percent output increase and hours growth of 0.2 percent. This productivity increase was the largest in durables since 1971, when productivity rose 8.6 percent. In nondurable goods manufacturing, productivity rose 1.2 percent in 1998, as output rose 0.6 percent and hours of all persons declined by 0.5 percent (tables B, 3, 4, and 5).

Hourly compensation of manufacturing workers increased 4.5 percent in 1998, and real hourly compensation rose 2.9 percent. The 1998 increase in real hourly compensation was the largest since 1982, when it rose 3.3 percent. Hourly compensation in durable goods rose 4.1 percent in 1998, and real hourly compensation increased 2.5 percent. In nondurable goods industries, hourly compensation rose 5.1 percent, while real hourly compensation grew 3.5 percent.

Unit labor costs in the manufacturing sector grew by 0.2 percent last year. This was the first annual increase since 1993, when they grew by 0.7 percent. Unit labor costs in durable goods industries fell 2.5 percent in 1998, and they rose 3.9 percent in nondurable goods. In durable goods, unit labor costs have fallen every year since 1991 (when they rose 4.0 percent).

REVISED MEASURES

Productivity and cost data for the fourth quarter and full year 1998 for business, nonfarm business, and manufacturing were revised to incorporate the most recent information (table C). In the business and nonfarm business sectors, productivity and output measures for the fourth quarter are higher and unit labor costs are lower than those reported on Feb. 9 based on information available at that time. Fourth-quarter measures of manufacturing productivity and output were revised down from those reported last month; unit labor costs are correspondingly higher. Annual measures of productivity and costs are similar to those reported on Feb. 9. Quarterly series of real hourly compensation in the business, nonfarm business, and manufacturing sectors were revised back to the first quarter of 1994 to incorporate the annual recalculation of seasonal factors for the Consumer Price Index.

Table C. Previous and revised productivity and related measures:
Fourth-quarter and annual averages, 1998
(Seasonally adjusted annual rates)

Sector	Produc- tivity	Output	Hours	Hourly compen- sation	Real hourly compen- sation	Unit labor costs

Percent change, third to fourth quarter 1998						
Business:						
Previous	3.9	6.6	2.6	3.9	2.0	0.1
Current	4.8	7.4	2.4	4.0	2.2	-0.8
Nonfarm business:						
Previous	3.7	6.8	3.0	3.5	1.5	-0.2
Current	4.6	7.5	2.8	3.5	1.7	-1.1
Manufacturing:						
Previous	5.6	5.1	-0.5	3.2	1.3	-2.2
Current	5.2	4.7	-0.5	3.3	1.5	-1.8

Percent change, 1997 - 1998						
Business:						
Previous	2.3	4.6	2.2	4.3	2.7	2.0
Current	2.4	4.6	2.2	4.3	2.7	1.9
Nonfarm business:						
Previous	2.2	4.6	2.4	4.2	2.6	2.0
Current	2.2	4.6	2.4	4.2	2.6	1.9
Manufacturing:						
Previous	4.3	4.2	-0.1	4.5	2.9	0.2
Current	4.2	4.1	-0.1	4.5	2.9	0.2

Next release date

The next release of Productivity and Costs is scheduled for 10:00 AM EDT, Tuesday, May 11, 1999, and will present preliminary first-quarter measures for business, nonfarm business, and manufacturing. Fourth-quarter and annual data for nonfinancial corporations 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; 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	103.0	112.5	109.2	108.9	98.5	105.7	111.9	107.9
	II	103.8	114.2	110.0	110.4	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	111.7	112.3	99.2	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	104.4	117.8	112.9	113.2	99.5	108.5	112.4	109.9
	II	104.8	119.1	113.6	113.9	99.8	108.7	113.2	110.3
	III	105.8	120.6	114.0	115.0	100.3	108.8	113.8	110.6
	IV	106.0	121.7	114.8	116.5	r101.1	109.9	112.4	110.8
	ANNUAL	105.2	119.8	113.8	114.7	100.3	109.0	112.9	110.4
1998	I	107.1	123.7	115.6	117.9	r102.1	110.2	112.2	110.9
	II	107.1	124.3	116.1	119.1	102.7	111.2	110.5	111.0
	III	107.8	125.5	116.4	120.2	103.2	111.5	110.4	111.1
	IV	r109.1	r127.8	r117.1	121.4	103.7	r111.3	r110.9	111.2
	ANNUAL	r107.8	125.3	116.3	119.7	103.0	111.1	r111.0	111.0
Percent change from previous quarter at annual rate(5)									
1996	I	4.5	4.5	0.0	2.6	r-0.7	-1.8	8.5	1.9
	II	3.4	6.4	2.9	5.6	r1.9	2.1	0.9	1.7
	III	0.0	2.5	2.5	3.8	r1.5	3.8	-2.2	1.6
	IV	1.3	5.1	3.7	3.1	r-0.1	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	0.7	4.9	4.2	3.5	r1.0	2.8	2.1	2.5
	II	1.8	4.7	2.8	2.4	r1.2	0.6	2.8	1.4
	III	3.6	4.9	1.3	4.0	2.0	0.4	2.3	1.1
	IV	0.8	3.6	2.7	5.2	r3.3	4.4	-4.8	0.9
	ANNUAL	1.5	4.6	3.1	3.6	1.2	2.1	1.0	1.7
1998	I	4.1	7.1	2.8	5.0	r3.9	0.8	-0.7	0.2
	II	0.1	1.7	1.6	4.1	r2.3	4.0	-6.0	0.3
	III	2.6	4.0	1.4	3.7	r2.0	1.0	-0.4	0.5
	IV	r4.8	r7.4	r2.4	r4.0	r2.2	r-0.8	r1.9	r0.2
	ANNUAL	r2.4	4.6	2.2	4.3	2.7	r1.9	r-1.7	0.6
Percent change from corresponding quarter of previous year									
1996	I	2.5	3.2	0.7	3.1	0.3	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	2.3	4.6	2.3	3.8	0.6	1.4	2.0	1.7
	ANNUAL	2.7	4.2	1.5	3.6	0.7	0.9	2.8	1.6
1997	I	1.4	4.7	3.3	4.0	r1.0	2.6	0.5	1.8
	II	1.0	4.3	3.3	3.2	0.9	2.2	0.9	1.8
	III	1.8	4.9	3.0	3.3	1.0	1.4	2.0	1.6
	IV	1.7	4.5	2.8	3.8	1.9	2.0	0.6	1.5
	ANNUAL	1.5	4.6	3.1	3.6	1.2	2.1	1.0	1.7
1998	I	2.6	5.1	2.4	4.1	2.6	1.5	-0.2	0.9
	II	2.1	4.3	2.1	4.6	2.9	2.4	-2.4	0.6
	III	1.9	4.1	2.1	4.5	2.9	2.5	-3.0	0.5
	IV	r2.9	r5.0	2.1	4.2	2.6	r1.2	r-1.3	0.3
	ANNUAL	r2.4	4.6	2.2	4.3	2.7	r1.9	r-1.7	0.6

See footnotes following Table 6.
r=revised

March 9, 1999
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	103.1	112.8	109.4	108.7	98.3	105.4	112.3	107.9
	II	103.8	114.5	110.3	110.1	98.7	106.0	112.3	108.2
	III	103.8	115.2	111.0	111.0	r99.0	107.0	111.6	108.6
	IV	104.0	116.6	112.1	111.9	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	104.1	117.9	113.3	112.9	99.2	108.5	112.9	110.0
	II	104.5	119.2	114.1	113.6	99.5	108.7	113.7	110.4
	III	105.4	120.6	114.5	114.6	99.9	108.8	114.6	110.8
	IV	105.6	121.8	115.3	116.0	r100.7	109.8	113.3	111.1
	ANNUAL	104.9	119.9	114.3	114.3	99.9	108.9	113.6	110.6
1998	I	106.6	123.9	116.3	117.4	r101.6	110.1	113.2	111.2
	II	106.6	124.4	116.7	118.5	r102.1	111.1	111.6	111.3
	III	107.3	125.6	117.1	119.7	102.7	111.5	111.4	111.5
	IV	r108.5	r127.9	117.9	120.7	r103.2	r111.2	r112.0	r111.5
	ANNUAL	r107.3	r125.5	117.0	119.1	102.5	r111.0	112.0	111.4
Percent change from previous quarter at annual rate(5)									
1996	I	4.2	4.2	0.0	2.7	r-0.6	-1.5	7.4	1.7
	II	3.0	6.4	3.3	5.2	r1.5	2.2	-0.1	1.3
	III	-0.1	2.5	2.6	3.6	1.2	3.7	-2.3	1.4
	IV	1.0	5.0	4.0	3.1	r-0.2	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	0.1	4.5	4.4	3.7	r1.1	3.5	2.3	3.1
	II	1.6	4.5	2.8	2.4	r1.2	0.7	2.8	1.5
	III	3.4	4.8	1.3	3.8	1.8	0.3	3.1	1.4
	IV	0.9	4.0	3.0	4.9	r3.0	4.0	-4.3	0.9
	ANNUAL	1.2	4.5	3.2	3.5	1.2	2.3	1.3	1.9
1998	I	3.6	7.0	3.3	4.7	r3.7	1.1	-0.3	0.6
	II	0.3	1.7	1.4	4.1	r2.2	3.7	-5.7	0.2
	III	2.5	4.0	1.4	3.9	r2.3	1.4	-0.5	0.7
	IV	r4.6	r7.5	r2.8	3.5	r1.7	r-1.1	r2.2	r0.1
	ANNUAL	2.2	4.6	2.4	4.2	2.6	r1.9	-1.4	0.7
Percent change from corresponding quarter of previous year									
1996	I	2.4	3.2	0.8	3.0	r0.3	0.6	2.7	1.4
	II	2.9	4.7	1.7	3.6	0.7	0.7	2.3	1.3
	III	2.4	4.1	1.6	3.8	0.8	1.3	1.4	1.3
	IV	2.0	4.5	2.4	3.6	0.5	1.6	1.8	1.7
	ANNUAL	2.4	4.1	1.6	3.5	0.6	1.1	2.0	1.4
1997	I	1.0	4.6	3.5	3.9	0.9	2.9	0.5	2.0
	II	0.7	4.1	3.4	3.2	0.8	2.5	1.3	2.0
	III	1.5	4.7	3.1	3.2	1.0	1.7	2.6	2.0
	IV	1.5	4.4	2.9	3.7	1.8	2.1	0.9	1.7
	ANNUAL	1.2	4.5	3.2	3.5	1.2	2.3	1.3	1.9
1998	I	2.4	5.1	2.6	3.9	2.4	1.5	0.3	1.1
	II	2.0	4.4	2.3	4.4	2.7	2.3	-1.9	0.8
	III	1.8	4.1	2.3	4.4	2.8	2.6	-2.7	0.6
	IV	r2.7	r5.0	r2.2	4.0	2.5	r1.3	r-1.1	r0.4
	ANNUAL	2.2	4.6	2.4	4.2	2.6	r1.9	-1.4	0.7

See footnotes following Table 6.
r=revised

March 9, 1999
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	

Indexes 1992=100							
1996	I	111.9	114.8	102.6	109.2	98.8	97.6
	II	113.2	117.5	103.8	110.3	98.9	97.5
	III	114.7	119.3	104.1	111.2	99.1	97.0
	IV	115.5	120.4	104.2	111.9	98.9	96.9
	ANNUAL	113.8	118.0	103.7	110.7	99.0	97.2
1997	I	116.7	122.5	105.0	113.1	99.4	97.0
	II	118.1	124.5	105.4	114.2	100.0	96.7
	III	120.7	126.8	105.1	115.7	100.9	95.9
	IV	121.9	129.1	105.9	118.0	r102.4	96.8
	ANNUAL	119.4	125.7	105.3	115.3	100.8	96.6
1998	I	122.4	129.9	106.1	119.2	103.2	97.3
	II	123.6	130.7	105.7	119.9	r103.3	97.0
	III	125.0	130.8	104.6	120.9	103.7	96.7
	IV	r126.6	r132.3	104.5	121.8	r104.1	r96.2
	ANNUAL	124.4	r130.9	105.2	120.4	103.7	96.8

Percent change from previous quarter at annual rate(5)							
1996	I	4.2	0.8	-3.3	-0.2	r-3.4	-4.3
	II	4.5	9.6	4.9	4.1	r0.5	-0.4
	III	5.3	6.4	1.0	3.2	r0.9	-2.0
	IV	3.1	3.6	0.5	2.6	r-0.6	-0.4
	ANNUAL	4.1	3.7	-0.4	2.2	-0.8	-1.8
1997	I	4.1	7.2	3.0	4.4	r1.8	0.4
	II	5.0	6.6	1.5	3.7	r2.4	-1.3
	III	9.0	7.7	-1.2	5.7	3.7	-3.1
	IV	4.3	7.5	3.1	8.0	r6.1	3.6
	ANNUAL	4.9	6.5	1.6	4.2	1.8	-0.7
1998	I	1.6	2.4	0.8	4.0	r3.0	2.4
	II	3.9	2.5	-1.4	2.6	r0.8	-1.3
	III	4.7	0.4	-4.1	3.2	r1.5	-1.5
	IV	r5.2	r4.7	-0.5	r3.3	r1.5	r-1.8
	ANNUAL	r4.2	r4.1	-0.1	4.5	2.9	0.2

Percent change from corresponding quarter of previous year							
1996	I	3.7	1.3	-2.4	1.8	-0.9	-1.8
	II	3.7	3.6	-0.1	2.1	-0.7	-1.6
	III	4.4	4.8	0.4	2.2	-0.7	-2.1
	IV	4.3	5.0	0.7	2.4	-0.7	-1.8
	ANNUAL	4.1	3.7	-0.4	2.2	-0.8	-1.8
1997	I	4.2	6.7	2.3	3.6	r0.6	-0.6
	II	4.4	5.9	1.5	3.5	1.1	-0.8
	III	5.3	6.3	1.0	4.1	1.8	-1.1
	IV	5.6	7.3	1.6	5.4	3.5	-0.1
	ANNUAL	4.9	6.5	1.6	4.2	1.8	-0.7
1998	I	4.9	6.0	1.1	5.3	3.8	0.4
	II	4.7	5.0	0.3	5.1	3.4	0.4
	III	3.6	3.2	-0.4	4.4	2.8	0.8
	IV	r3.8	r2.5	-1.3	r3.3	1.7	r-0.6
	ANNUAL	r4.2	r4.1	-0.1	4.5	2.9	0.2

See footnotes following Table 6.
r=revised

March 9, 1999
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	118.7	125.3	105.5	107.5	97.2	90.5
	II	120.9	129.9	107.4	108.5	97.2	89.8
	III	122.7	132.3	107.8	109.2	97.3	89.0
	IV	123.7	133.6	108.0	109.6	r96.9	88.6
	ANNUAL	121.5	130.2	107.2	108.7	97.2	89.5
1997	I	125.1	136.9	109.4	110.7	r97.2	88.5
	II	127.5	140.3	110.1	111.6	97.8	87.6
	III	131.5	144.6	110.0	113.2	98.7	86.1
	IV	134.0	148.3	110.7	115.9	100.6	86.5
	ANNUAL	129.5	142.5	110.0	112.9	98.7	87.1
1998	I	134.6	149.6	111.1	116.7	r101.0	86.7
	II	136.8	151.3	110.6	117.1	r100.9	85.6
	III	139.6	153.1	109.7	117.6	100.9	84.2
	IV	r142.5	156.2	109.7	118.5	r101.3	83.2
	ANNUAL	138.3	r152.6	110.3	117.5	101.1	84.9

Percent change from previous quarter at annual rate(5)							
1996	I	6.9	4.1	-2.7	-2.9	r-6.0	-9.2
	II	7.4	15.5	7.5	3.8	r0.2	-3.3
	III	6.2	7.7	1.4	2.7	r0.3	-3.3
	IV	3.3	3.9	0.6	1.5	r-1.7	-1.8
	ANNUAL	5.9	6.8	0.9	0.8	-2.1	-4.8
1997	I	4.6	10.4	5.5	4.0	r1.5	-0.6
	II	7.9	10.4	2.3	3.5	r2.3	-4.1
	III	13.0	12.8	-0.2	5.5	3.5	-6.6
	IV	7.8	10.7	2.7	10.2	r8.2	2.2
	ANNUAL	6.6	9.4	2.7	3.9	1.5	-2.6
1998	I	2.0	3.5	1.5	2.6	r1.6	0.6
	II	6.6	4.6	-1.8	1.5	r-0.3	-4.7
	III	8.5	4.8	-3.5	1.6	r-0.1	-6.4
	IV	8.4	r8.5	r0.1	3.2	r1.4	-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	4.9	3.7	-1.1	0.3	-2.4	-4.4
	II	6.0	7.5	1.5	0.7	-2.1	-5.0
	III	6.5	8.3	1.7	0.9	-2.0	-5.3
	IV	6.0	7.7	1.7	1.3	r-1.8	-4.4
	ANNUAL	5.9	6.8	0.9	0.8	-2.1	-4.8
1997	I	5.4	9.3	3.7	3.0	0.1	-2.3
	II	5.5	8.1	2.4	2.9	0.6	-2.4
	III	7.2	9.3	2.0	3.6	1.4	-3.3
	IV	8.3	11.1	2.5	5.8	r3.9	-2.3
	ANNUAL	6.6	9.4	2.7	3.9	1.5	-2.6
1998	I	7.6	9.3	1.5	5.4	3.9	-2.0
	II	7.3	7.8	0.5	4.9	3.2	-2.2
	III	6.2	5.9	-0.3	3.9	2.3	-2.1
	IV	6.3	5.3	r-0.9	2.2	0.7	r-3.9
	ANNUAL	6.8	7.0	0.2	4.1	2.5	-2.5

See footnotes following Table 6.
r=revised

March 9, 1999
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	106.3	104.9	98.7	111.4	r100.7	104.8
	II	106.8	105.7	99.0	112.5	100.9	105.4
	III	108.0	107.0	99.1	113.7	101.3	105.3
	IV	108.7	107.9	99.2	114.9	r101.6	105.7
	ANNUAL	107.5	106.4	99.0	113.1	101.2	105.3
1997	I	109.8	108.8	99.1	116.2	102.1	105.9
	II	110.2	109.3	99.2	117.3	102.7	106.4
	III	111.4	109.7	98.5	118.9	103.7	106.8
	IV	111.3	110.7	99.4	120.3	r104.4	108.0
	ANNUAL	110.7	109.6	99.1	118.2	103.3	106.8
1998	I	111.7	111.0	99.4	122.1	r105.7	109.3
	II	111.9	111.0	99.2	123.5	106.4	110.4
	III	111.9	109.6	97.9	125.2	107.4	111.8
	IV	r112.3	r109.7	97.6	r126.2	r107.8	r112.3
	ANNUAL	112.0	r110.3	98.5	124.2	106.9	r111.0

Percent change from previous quarter at annual rate(5)							
1996	I	1.7	-2.5	-4.1	4.1	r0.8	2.3
	II	1.9	3.1	1.2	4.1	r0.5	2.3
	III	4.5	5.0	0.4	4.1	r1.7	-0.4
	IV	2.9	3.2	0.4	4.5	r1.2	1.5
	ANNUAL	2.5	0.3	-2.1	4.1	1.1	1.6
1997	I	3.9	3.4	-0.5	4.6	r2.0	0.7
	II	1.5	1.9	0.4	3.8	r2.6	2.2
	III	4.3	1.7	-2.5	5.7	3.7	1.3
	IV	-0.1	3.6	3.7	4.6	r2.7	4.7
	ANNUAL	3.0	3.1	0.1	4.5	2.1	1.4
1998	I	1.3	1.1	-0.2	6.3	r5.3	5.0
	II	0.6	-0.2	-0.8	4.4	r2.5	3.8
	III	0.3	-4.7	-5.0	5.7	r4.0	5.4
	IV	r1.4	r0.1	r-1.3	r3.3	r1.6	r1.9
	ANNUAL	1.2	r0.6	-0.5	5.1	3.5	r3.9

Percent change from corresponding quarter of previous year							
1996	I	2.8	-1.4	-4.1	4.0	1.2	1.2
	II	1.8	-0.6	-2.3	4.1	1.2	2.3
	III	2.5	1.0	-1.5	4.1	1.2	1.6
	IV	2.7	2.2	-0.6	4.2	1.0	1.4
	ANNUAL	2.5	0.3	-2.1	4.1	1.1	1.6
1997	I	3.3	3.7	0.4	4.3	r1.3	1.0
	II	3.2	3.4	0.2	4.2	1.9	1.0
	III	3.1	2.6	-0.6	4.6	2.4	1.5
	IV	2.4	2.6	0.2	4.7	r2.8	2.2
	ANNUAL	3.0	3.1	0.1	4.5	2.1	1.4
1998	I	1.7	2.1	0.3	5.1	3.6	3.3
	II	1.5	1.5	0.0	5.3	3.6	3.7
	III	0.5	-0.1	-0.6	5.2	3.6	4.7
	IV	r0.9	r-1.0	-1.8	4.9	3.3	r4.0
	ANNUAL	1.2	r0.6	-0.5	5.1	3.5	r3.9

See footnotes following Table 6.
r=revised

March 9, 1999
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	110.2	107.7	97.4	101.2	98.7	100.6	153.7	105.4
	II	107.3	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	110.8	r98.0	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	I	108.9	124.3	114.1	111.8	98.2	102.6	97.3	101.2	156.6	106.2
	II	109.6	126.2	115.2	112.5	98.5	102.6	97.1	101.2	157.3	106.3
	III	111.1	128.7	115.9	113.6	99.0	102.3	96.4	100.7	161.7	106.3
	IV	111.3	130.2	117.0	115.0	r99.8	103.3	95.7	101.3	155.7	106.3
	ANNUAL	110.3	127.3	115.4	113.3	99.0	102.7	96.6	101.1	157.8	106.3
1998	I	112.1	132.1	117.9	116.0	r100.4	103.5	95.4	101.4	153.5	106.2
	II	112.9	133.4	118.1	117.3	101.1	103.9	95.5	101.7	150.4	106.1
	III	114.1	135.4	118.6	118.5	101.7	103.8	95.2	101.6	151.8	106.1

Percent change from previous quarter at annual rate(5)											
1996	I	1.3	1.4	0.1	1.7	r-1.6	0.4	-0.7	0.1	13.1	1.7
	II	3.3	6.9	3.5	5.0	r1.3	1.7	-2.9	0.5	1.1	0.6
	III	2.9	5.6	2.6	3.8	r1.5	0.9	-1.7	0.3	3.0	0.6
	IV	2.0	5.5	3.4	2.8	-0.5	0.7	-0.5	0.4	0.3	0.4
	ANNUAL	2.8	4.5	1.7	3.1	0.2	0.3	-1.1	-0.1	7.7	0.9
1997	I	1.3	5.9	4.5	3.4	r0.8	2.0	-0.6	1.4	3.2	1.6
	II	2.3	6.3	3.9	2.5	r1.3	0.2	-0.6	0.0	1.7	0.2
	III	5.6	8.2	2.5	4.1	2.2	-1.3	-3.1	-1.8	11.8	0.0
	IV	1.0	4.8	3.8	5.0	r3.1	4.0	-2.7	2.3	-14.1	-0.1
	ANNUAL	2.5	6.1	3.6	3.5	1.1	1.0	-1.3	0.4	2.1	0.6
1998	I	2.7	5.9	3.2	3.6	r2.6	0.9	-1.1	0.4	-5.6	-0.4
	II	3.1	4.0	0.9	4.6	r2.7	1.5	0.1	1.1	-7.7	-0.1
	III	4.4	6.1	1.7	4.0	r2.4	-0.3	-0.9	-0.4	3.6	0.1

Percent change from corresponding quarter of previous year											
1996	I	3.0	3.9	0.9	2.5	r-0.2	-0.4	-0.6	-0.5	11.5	0.9
	II	3.2	4.9	1.6	3.1	0.2	-0.1	-1.6	-0.5	11.1	0.9
	III	2.6	4.4	1.8	3.4	r0.5	0.8	-0.9	0.3	4.5	0.9
	IV	2.4	4.8	2.4	3.3	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	2.4	5.9	3.5	3.7	0.8	1.3	-1.4	0.6	1.9	0.8
	II	2.1	5.8	3.6	3.1	0.8	1.0	-0.8	0.5	2.0	0.7
	III	2.8	6.4	3.5	3.2	1.0	0.4	-1.2	0.0	4.2	0.5
	IV	2.5	6.3	3.6	3.8	r1.9	1.2	-1.8	0.5	0.2	0.4
	ANNUAL	2.5	6.1	3.6	3.5	1.1	1.0	-1.3	0.4	2.1	0.6
1998	I	2.9	6.3	3.3	3.8	2.3	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	2.4	4.3	2.7	1.5	-1.1	0.8	-6.2	-0.1

See footnotes following Table 6.
r=revised

March 9, 1999
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 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.