

News

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PRODUCTIVITY AND COSTS First Quarter 1987

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 first quarter of 1987. Based on preliminary data, the seasonally-adjusted annual rates of productivity change in the first quarter were:

- 1.8 percent in the business sector,
- 1.7 percent in the nonfarm business sector,
- 1.4 percent in manufacturing,
- 1.6 percent in durable goods manufacturing, and
- 1.2 percent in nondurable goods manufacturing.

First-quarter measures are summarized in table A and appear in detail in tables 1 through 5. Productivity rose in all sectors in the first quarter and, combined with moderate gains in hourly compensation, contributed to falling unit labor costs.

Business

Productivity increased at an 1.8 percent annual rate during the first quarter of 1987 in the business sector, as output rose 5.1 percent and hours of all persons engaged in the sector increased 3.2 percent (seasonally adjusted annual rates). During the fourth quarter of 1986, productivity declined 2.0 percent, as output grew more slowly than hours (table 1). The increase in output during the first three months of 1987 was the largest since the first quarter of 1984 (when output rose at a 12.2 percent annual rate).

Hourly compensation increased only 0.4 percent during the first quarter of 1987, the smallest quarterly gain in this series since the third quarter of 1960 (when it fell 1.0 percent). This measure includes wages and salaries, supplements, employer contributions to employee-benefit plans, and taxes. Unit labor costs, which reflect changes in hourly compensation and productivity, declined at a 1.4 percent annual rate during the first quarter, the first decline in this measure in a year. During the fourth quarter of 1985, these costs rose at a 4.2 percent annual rate.

Real hourly compensation, which takes into account changes in the Consumer Price Index for All Urban Consumers (CPI-U), declined at a 4.6 percent annual rate in the first quarter, compared with a 0.6 percent decline in the fourth quarter of 1985.

Table A. Productivity and costs: Preliminary first quarter 1987 measures
(Seasonally adjusted annual rates)

Sector	Productivity	Output	Hours	Hourly compensation	Real hourly compensation	Unit labor costs
PRELIMINARY						
Percent change from preceding quarter						
Business	1.8	5.1	3.2	0.4	-4.6	-1.4
Nonfarm business	1.7	5.4	3.6	0.1	-4.9	-1.6
Manufacturing	1.4	2.8	1.3	-0.9	-5.9	-2.3
Durable	1.6	2.2	0.6	-2.2	-7.1	-3.7
Nondurable	1.2	3.7	2.4	1.5	-3.6	0.2
Percent change from same quarter a year ago						
Business	0.0	2.4	2.5	2.0	-0.2	2.1
Nonfarm business	0.1	2.8	2.7	1.8	-0.4	1.7
Manufacturing	2.0	2.1	0.1	1.6	-0.7	-0.4
Durable	1.7	0.8	-0.9	1.5	-0.7	-0.2
Nondurable	2.7	4.3	1.6	1.9	-0.3	-0.7

The implicit price deflator for the business sector, which reflects changes in unit labor costs and unit nonlabor payments, increased 3.0 percent in the first quarter.

Nonfarm business

Productivity increased 1.7 percent in the nonfarm business sector during the first quarter of 1987, as output rose 5.4 percent and hours of all persons increased 3.6 percent. As in the more comprehensive business sector reported above, the first-quarter increase in productivity followed 2 quarters of decline. The increase in output was the largest since the first quarter of 1984. During the fourth quarter of 1986, productivity declined 1.5 percent in this sector (table 2).

Hourly compensation edged up 0.1 percent in the first quarter, but declined at a 4.9 percent annual rate when the rise in the CPI-U is taken into account. Unit labor costs declined 1.6 percent, compared with a 4.2 percent rise during the fourth quarter of 1986.

The implicit price deflator for the nonfarm business sector rose 3.1 percent in the first quarter, compared with a 0.3 percent decline one year earlier.

Manufacturing

Productivity increased at a 1.4 percent seasonally adjusted annual rate in manufacturing in the first quarter of 1987, as output rose 2.8 percent and hours of all persons increased 1.3 percent (seasonally adjusted annual rates). In contrast to the business sectors, manufacturing output growth was slower in the first quarter of 1987 than in the fourth quarter of 1986.

Hourly compensation of manufacturing workers declined 0.9 percent during the first quarter, as a rise in nondurables was more than offset by a decline in durable goods. Real hourly compensation for the whole sector fell 5.9 percent when the increase in consumer prices is taken into account. Unit labor costs declined at a 2.3 percent annual rate, compared with a 2.3 percent increase during the fourth quarter of 1986.

Both durable and nondurable goods subsectors experienced productivity increases in the first quarter (tables 4, 5). While output increased in both subsectors, hours of all persons increased mainly in nondurables.

Fourth quarter measures for nonfinancial corporations

Fourth-quarter 1986 measures of productivity and costs were also announced today for the nonfinancial corporate sector, together with revised annual movements (tables B and C). Output per all-employee hour increased 1.4 percent from the third to the fourth quarter of 1986, as output increased 4.1 percent and all-employee hours increased 2.7 percent. In the first two quarters of 1986, productivity declined, but increases were recorded for the third and fourth quarters (table 6). Hourly compensation increased 2.3 percent in the fourth quarter, but declined 0.3 percent when the rise in the CPI-U is taken into account. Unit labor costs rose 0.9 percent, unit nonlabor costs declined 3.6 percent, and unit profits rose 2.8 percent. The implicit deflator for nonfinancial corporate output was unchanged in the fourth quarter.

Table B. Nonfinancial corporations: Preliminary fourth quarter and revised 1986 annual productivity and cost measures
Quarterly change at seasonally adjusted annual rates
(Percent change)

Period	Productivity	Output	Hours	Hourly compensation	Real hourly compensation	Unit labor costs	Unit profits	Implicit price deflator
1986 III- 1986 IV	1.4	4.1	2.7	2.3	-0.3	0.9	2.8	0.0
1985 IV- 1986 IV	0.2	1.7	1.5	1.9	0.6	1.7	4.2	1.7
1986 Annual	0.1	1.9	1.8	2.4	0.5	2.3	0.7	1.9

Table C. Nonfinancial corporations: Preliminary and revised 1986 annual change in productivity and related measures
Percent

Period	Productivity	Output	Hours	Hourly compensation	Real hourly compensation	Unit labor costs	Unit profits	Implicit price deflator
Preliminary	0.0	1.8	1.8	2.4	0.5	2.4	0.0	1.9
Revised	0.1	1.9	1.8	2.4	0.5	2.3	0.7	1.9

Next release date

The next release of productivity and cost measures is scheduled for 10:00 AM EDT Tuesday, June 2, 1987. Released at that time will be preliminary first-quarter measures for the nonfinancial corporate sector and revised first-quarter measures for business, nonfarm business, and manufacturing.

TECHNICAL NOTES

Business sector output is equal to gross national product in constant 1982 dollars, less the rest-of-the-world sector, general government, output of nonprofit institutions, output of paid employees of private households, rental value of owner-occupied dwellings, and the statistical discrepancy in computing the national income accounts. Corresponding exclusions are also made in labor inputs. Business output has accounted for about 77 percent of gross national product in recent years.

Total manufacturing measures are computed by summing series prepared for the durable and nondurables goods sectors.

The durable sector includes the following 2-digit SIC industries: Primary metals; fabricated metal products; nonelectrical machinery; electrical machinery; transportation equipment; instruments; lumber and lumber products; furniture and fixtures; stone, clay, and glass products; and miscellaneous manufactures. The nondurable sector includes these 2-digit SIC industries: Textile mill products, apparel products, leather and leather products, printing and publishing, chemical and chemical products, petroleum products, rubber and plastic products, food, and tobacco products.

Manufacturing output has accounted for about 24 percent of gross national product in recent years.

Nonfinancial corporate output is equal to gross national product in constant 1982 dollars, less the rest-of-the-world sector, general government, unincorporated business, output of nonprofit institutions, output of paid employees of private households, rental value of owner-occupied dwelling, the output of corporations engaged in banking, finance, stock and commodity trading, and credit and insurance agencies, and the statistical discrepancy in computing the national income accounts. Nonfinancial corporate output has accounted for about 59 percent of gross national product in recent years.

The productivity and associated cost measures in this news release describe the relationship between output in real terms 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 of all persons engaged in a sector, they do not measure the specific contribution of labor, capital, or any other factor of production. Rather, they reflect the joint effects of many influences, including changes in technology; capital investment; level of output; utilization of capacity, energy, and materials; the organization of production; managerial skill; and the characteristics and effort of the work force.

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

Year and quarter		Output per hour of all persons	Output	Hours of all persons	Compensation per hour(1)	Real compensation per hour(2)	Unit labor cost	Unit non-labor payments(3)	Implicit price deflator(4)
Indexes 1977=100									
1986	I	107.3	125.3	116.8	179.1	99.2	167.0	162.2	165.3
	II	107.4	125.4	116.7	180.4	100.2	168.0	161.9	165.8
	III	107.3	126.0	117.4	181.7	100.4	169.3	163.4	167.2
	IV	r106.8	r126.8	118.7	182.6	100.2	r171.0	r159.7	167.0
	ANNUAL	107.1	r125.9	117.5	180.9	100.0	r168.8	r161.8	166.3
1987	I	p107.2	p128.3	p119.7	p182.8	p99.0	p170.4	p164.3	p168.2
Percent change from previous quarter at annual rate(5)									
1986	I	3.3	4.7	1.4	2.5	0.9	-0.7	6.6	1.8
	II	0.5	0.3	-0.2	2.8	4.2	2.3	-0.7	1.2
	III	-0.4	2.0	2.4	2.9	0.4	3.3	3.7	3.4
	IV	r-2.0	r2.4	4.6	r2.0	-0.6	r4.2	r-8.6	r-0.4
	ANNUAL	0.7	r2.6	1.9	3.2	1.2	2.5	r1.3	2.1
1987	I	p1.8	p5.1	p3.2	p0.4	p-4.6	p-1.4	p11.9	p3.0
Percent change from corresponding quarter of previous year									
1986	I	1.5	3.3	1.8	3.9	0.8	2.4	2.5	2.4
	II	1.0	2.5	1.6	3.4	1.7	2.4	1.2	2.0
	III	0.0	2.0	2.0	3.0	1.3	3.0	1.2	2.4
	IV	r0.3	r2.4	2.0	2.6	1.2	r2.2	r0.1	1.5
	ANNUAL	0.7	r2.6	1.9	3.2	1.2	2.5	r1.3	2.1
1987	I	p0.0	p2.4	p2.5	p2.0	p-0.2	p2.1	p1.3	p1.8

See footnotes following table 6.

r=revised

p=preliminary

May 4, 1987

Source: Bureau of Labor Statistics

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

Year and quarter		Output per hour of all persons	Output	Hours of all persons	Compensation per hour(1)	Real compensation per hour(2)	Unit labor cost	Unit non-labor payments(3)	Implicit price deflator(4)
Indexes 1977=100									
1986	I	105.6	125.1	118.5	178.3	98.8	168.8	163.9	167.1
	II	105.7	125.3	118.5	179.3	99.7	169.6	163.7	167.5
	III	105.7	126.1	119.4	180.4	99.6	170.7	165.9	169.0
	IV	r105.3	r127.0	120.6	181.6	99.6	r172.5	r162.2	r168.9
	ANNUAL	105.5	r125.9	119.3	r179.8	99.4	r170.4	r163.9	169.1
1987	I	p105.7	p128.6	p121.7	p181.6	p98.4	p171.8	p167.2	p170.2
Percent change from previous quarter at annual rate(5)									
1986	I	4.3	5.1	0.8	3.1	1.5	-1.2	9.3	2.3
	II	0.5	0.6	0.1	2.3	3.6	1.8	-0.6	1.0
	III	-0.3	2.6	2.9	2.3	-0.1	2.6	5.5	3.6
	IV	r-1.5	r2.7	4.3	2.7	0.0	r4.2	r-8.6	r-0.3
	ANNUAL	0.7	r2.8	2.0	3.0	1.1	2.3	r2.0	2.2
1987	I	p1.7	p5.4	p3.6	p0.1	p-4.9	p-1.6	p12.9	p3.1
Percent change from corresponding quarter of previous year									
1986	I	1.2	3.3	2.1	3.6	0.5	2.5	3.1	2.7
	II	0.8	2.7	1.8	3.1	1.4	2.2	1.8	2.1
	III	0.2	2.3	2.1	2.8	1.2	2.6	1.7	2.3
	IV	r0.7	r2.8	2.0	2.6	1.2	r1.8	r1.2	1.6
	ANNUAL	0.7	r2.8	2.0	3.0	1.1	2.3	r2.0	2.2
1987	I	p0.1	p2.8	p2.7	p1.8	p-0.4	p1.7	p2.0	p1.8

See footnotes following table 6.

r=revised

p=preliminary

May 4, 1987

Source: Bureau of Labor Statistics

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

Year and quarter		Output per hour of all persons	Output (6)	Hours of all persons	Compensation per hour(1)	Real compensation per hour(2)	Unit labor cost
Indexes 1977=100							
1986	I	123.7	122.8	99.3	180.2	99.8	145.7
	II	124.7	122.7	98.4	181.4	100.8	145.5
	III	125.8	123.6	98.2	182.5	100.8	145.1
	IV	125.8	124.6	99.0	183.5	100.7	145.9
	ANNUAL	125.0	123.4	98.7	181.9	100.5	145.5
1987	I	p126.2	p125.4	p99.4	p183.0	p99.2	p145.0
Percent change from previous quarter at annual rate(5)							
1986	I	2.6	3.0	0.4	2.1	0.5	-0.5
	II	3.2	-0.4	-3.5	2.7	4.1	-0.5
	III	3.6	2.9	-0.6	2.4	0.0	-1.1
	IV	r-0.2	r3.2	3.4	2.1	-0.6	r2.3
	ANNUAL	2.7	2.5	-0.2	r2.9	1.0	0.3
1987	I	p1.4	p2.8	p1.3	p-0.9	p-5.9	p-2.3
Percent change from corresponding quarter of previous year							
1986	I	3.7	3.4	-0.3	3.7	0.6	0.0
	II	2.5	2.3	-0.2	3.3	1.6	0.8
	III	2.3	2.0	-0.3	2.5	0.8	0.2
	IV	2.3	2.2	-0.1	2.3	1.0	0.0
	ANNUAL	2.7	2.5	-0.2	r2.9	1.0	0.3
1987	I	p2.0	p2.1	p0.1	p1.6	p-0.7	p-0.4

See footnotes following table 6.

r=revised

p=preliminary

May 4, 1987

Source: Bureau of Labor Statistics

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

Year and quarter		Output per hour of all persons	Output (6)	Hours of all persons	Compensation per hour(1)	Real compensation per hour(2)	Unit labor cost
Indexes 1977=100							
1986	I	127.1	126.9	99.9	178.9	99.1	140.8
	II	127.4	125.7	98.7	180.2	100.1	141.4
	III	128.6	126.2	98.2	181.3	100.1	141.0
	IV	128.7	127.2	98.8	182.6	100.2	141.9
	ANNUAL	127.9	126.5	98.9	180.7	99.9	141.3
1987	I	p129.2	p127.9	p99.0	p181.6	p98.4	p140.6
Percent change from previous quarter at annual rate(5)							
1986	I	2.1	1.5	-0.6	2.2	0.6	0.1
	II	1.0	-3.9	-4.8	2.8	4.1	1.7
	III	3.7	1.8	-1.8	2.5	0.0	-1.2
	IV	r0.4	r3.1	r2.5	3.0	r0.3	r2.6
	ANNUAL	r2.6	1.5	r-1.1	3.3	1.4	0.7
1987	I	p1.6	p2.2	p0.6	p-2.2	p-7.1	p-3.7
Percent change from corresponding quarter of previous year							
1986	I	4.7	3.5	-1.1	4.1	0.9	-0.6
	II	2.4	1.3	-1.1	4.0	2.4	1.6
	III	1.8	0.5	-1.3	2.7	1.0	0.9
	IV	1.8	0.6	-1.2	2.6	r1.2	0.8
	ANNUAL	r2.6	1.5	r-1.1	3.3	1.4	0.7
1987	I	p1.7	p0.8	p-0.9	p1.5	p-0.7	p-0.2

See footnotes following table 6.

r=revised

p=preliminary

May 4, 1987

Source: Bureau of Labor Statistics

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

Year and quarter		Output per hour of all persons	Output (6)	Hours of all persons	Compensation per hour(1)	Real compensation per hour(2)	Unit labor cost
Indexes 1977=100							
1986	I	118.6	116.7	98.3	182.2	100.9	153.6
	II	120.7	118.2	97.9	183.5	102.0	152.1
	III	121.7	119.6	98.2	184.8	102.1	151.8
	IV	121.4	120.6	99.3	r185.1	101.6	r152.4
	ANNUAL	120.6	r118.8	98.5	r183.8	101.6	152.5
1987	I	p121.8	p121.7	p99.9	p185.8	p100.6	p152.5
Percent change from previous quarter at annual rate(5)							
1986	I	3.5	5.6	2.0	2.2	0.6	-1.3
	II	7.0	5.3	1.6	2.9	4.2	-3.9
	III	3.6	4.3	1.7	2.7	0.3	-0.9
	IV	r-1.1	r3.5	4.6	r0.7	r-1.9	r1.8
	ANNUAL	2.8	4.1	1.2	2.5	0.6	-0.3
1987	I	p1.2	p3.7	p2.4	p1.5	p-3.6	p0.2
Percent change from corresponding quarter of previous year							
1986	I	2.2	3.1	0.8	3.3	0.2	1.0
	II	2.7	4.0	1.3	2.3	0.6	-0.4
	III	3.1	4.4	1.2	2.4	0.8	-0.7
	IV	3.2	4.8	1.5	2.1	r0.8	-1.1
	ANNUAL	2.8	4.1	1.2	2.5	0.6	-0.3
1987	I	p2.7	p4.3	p1.6	p1.9	p-0.3	p-0.7

See footnotes following table 6.

r=revised

p=preliminary

May 4, 1987

Source: Bureau of Labor Statistics

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

Year and quarter	Output per all-employee hour	Output	Employee hours	Hourly compensation (1)	Real hourly compensation(2)	Unit labor cost	Unit non-labor cost(7)	Total unit cost (8)	Unit profits (9)	Implicit price deflator (4)
Indexes 1977=100										
1985 I	106.0	123.1	116.1	169.9	97.0	160.3	178.5	164.9	129.3	160.6
II	106.5	124.2	116.6	171.6	96.9	161.1	179.8	165.3	130.2	161.6
III	107.8	126.0	116.8	173.1	97.2	160.5	173.3	165.0	141.7	162.2
IV	107.0	126.1	117.8	174.5	97.0	163.0	179.8	167.2	131.2	162.9
ANNUAL	106.8	124.8	116.9	172.3	97.0	161.2	179.1	165.8	133.1	161.9
1986 I	106.9	126.9	118.7	175.4	97.1	164.0	181.1	168.3	131.7	164.0
II	106.8	126.6	118.5	176.1	97.8	164.8	179.9	168.6	132.3	164.3
III	106.9	127.0	118.8	176.8	97.7	165.4	182.6	169.3	135.8	165.7
IV	p107.2	p128.3	p119.6	p177.8	p97.6	p165.8	p180.9	p169.6	p136.8	p165.7
ANNUAL	106.9	r127.2	r119.0	176.5	97.5	r165.0	r181.2	r169.1	r134.1	164.9
Percent change from previous quarter at annual rate(5)										
1985 I	0.8	3.2	2.4	3.8	0.5	3.0	2.2	2.8	-3.6	2.2
II	2.2	3.7	1.4	4.2	-0.3	2.0	3.0	2.3	3.0	2.3
III	4.9	5.9	1.0	3.4	1.1	-1.4	-3.3	-1.9	40.1	1.7
IV	-2.8	0.5	3.4	3.3	-0.5	6.3	3.3	5.5	-25.4	1.7
ANNUAL	1.2	3.7	2.5	3.9	0.3	2.7	2.6	2.7	-0.2	2.4
1986 I	-0.5	2.6	3.1	2.0	0.4	2.5	3.1	2.7	1.3	2.5
II	-0.3	-1.1	-0.8	1.6	2.9	1.9	-2.7	0.6	2.0	0.7
III	0.2	1.3	1.2	1.8	-0.6	1.6	6.1	2.8	11.0	3.6
IV	p1.4	p4.1	p2.7	p2.3	p-0.3	p0.9	p-3.6	p-0.3	p2.8	p0.0
ANNUAL	r0.1	r1.9	1.8	2.4	0.5	r2.3	r1.1	r2.0	r0.7	1.9
Percent change from corresponding quarter of previous year										
1985 I	0.6	4.1	3.5	3.8	0.2	3.2	4.3	3.5	-3.8	2.7
II	0.6	3.1	2.5	4.1	0.4	3.5	3.9	3.6	-5.9	2.6
III	2.2	4.2	2.0	3.9	0.5	1.6	1.1	1.5	8.7	2.2
IV	1.2	3.3	2.1	3.7	0.2	2.4	1.3	2.1	0.6	2.0
ANNUAL	1.2	3.7	2.5	3.9	0.3	2.7	2.6	2.7	-0.2	2.4
1986 I	0.9	3.2	2.2	3.2	0.1	2.3	1.5	2.1	1.8	2.1
II	0.3	2.0	1.7	2.6	1.0	2.3	0.0	1.7	1.6	1.7
III	-0.9	0.8	1.7	2.2	0.5	3.1	2.4	2.9	-4.2	2.1
IV	p0.2	p1.7	p1.5	p1.9	p0.6	p1.7	p0.7	p1.4	p4.2	p1.7
ANNUAL	r0.1	r1.9	1.8	2.4	0.5	r2.3	r1.1	r2.0	r0.7	1.9

See footnotes following table 6.

r=revised

p=preliminary

May 4, 1987

Source: Bureau of Labor Statistics

SOURCE: Output data from Bureau of Economic Analysis, U.S. Department of Commerce, and the Federal Reserve Board. Compensation and hours data from the Bureau of Labor Statistics, U.S. Department of Labor, and the Bureau of Economic Analysis.

RELIABILITY: Productivity and cost measures are regularly revised as more complete information becomes available. Preliminary results are published 30 days after the close of the reference period; revisions appear 30 days later, and second revisions after an additional 60 days. In the business sector, the probability is 0.95 that the third publication (second revision) of a quarterly index of output per hour of all persons will differ from the preliminary value by between -1.9 and +2.0 index points. This interval is based on the performance of this measure between the first quarter of 1976 and the second quarter of 1986

Footnotes, Tables 1-6

- (1) Wages and salaries of the employees plus employers' contributions for social insurance and private benefit plans. Except for nonfinancial corporations, where there are no self-employed, data also include an estimate of wages, salaries, and supplemental payments for the self-employed.
- (2) Compensation per hour adjusted for changes in the Consumer Price Index for All Urban Consumers.
- (3) Unit nonlabor payments include profits, capital consumption allowances, interest, rental income of persons, and indirect taxes.
- (4) Current dollar gross product divided by constant dollar gross product.
- (5) Quarterly changes: percent change compounded at annual rate from the original data rather than index numbers. Annual changes: percent change between annual average levels.
- (6) Quarterly manufacturing output measures are based on the index of industrial production prepared monthly by the Board of Governors of the Federal Reserve adjusted by BLS to annual manufacturing output levels (gross product originating) from the National Income and Product Accounts prepared by the Bureau of Economic Analysis of the U.S. Department of Commerce.
- (7) Unit nonlabor cost includes capital consumption allowances, interest, rental income of persons, and indirect taxes.
- (8) Total unit cost is the sum of labor and nonlabor costs.
- (9) Unit profits include corporate profits with inventory valuation and capital consumption adjustments.