

Table A. Productivity and costs: Preliminary first-quarter 1989 measures (Seasonally adjusted annual rates)

Sector	Productivity	Output	Hours	Hourly compensation	Real hourly compensation	Unit labor costs
Percent change from preceding quarter						
Business	3.5	6.7	3.1	5.7	0.3	2.1
Nonfarm business	0.5	3.6	3.1	5.7	0.3	5.2
Manufacturing	3.8	4.6	0.8	4.1	-1.2	0.4
Durable	3.6	4.2	0.5	4.5	-0.9	0.8
Nondurable	4.0	5.3	1.2	3.7	-1.7	-0.4
Percent change from same quarter a year ago						
Business	0.2	3.8	3.6	5.2	0.4	5.1
Nonfarm business	0.2	4.0	3.7	5.2	0.4	4.9
Manufacturing	3.6	5.7	2.0	4.2	-0.5	0.6
Durable	3.2	6.0	2.7	4.0	-0.8	0.7
Nondurable	4.0	5.1	1.1	4.5	-0.2	0.5

Real hourly compensation, which takes into account changes in the Consumer Price Index for All Urban Consumers (CPI-U), increased at a 0.3 percent annual rate in the first quarter, compared with a 0.2 percent decline in the fourth quarter of 1988.

The implicit price deflator for the business sector, which reflects changes in unit labor costs and unit nonlabor payments, increased 3.3 percent in the first quarter.

Nonfarm business

Productivity increased 0.5 percent in the nonfarm business sector during the first quarter of 1989, as output rose 3.6 percent and hours of all persons increased 3.1 percent. During the fourth quarter of 1988, productivity rose 1.0 percent in this sector (table 2).

Hourly compensation increased 5.7 percent in the first quarter, but increased only 0.3 percent when the rise in the CPI-U was taken into account. Unit labor costs rose 5.2 percent, compared with a 4.1 percent rise during the fourth quarter of 1988.

The implicit price deflator for the nonfarm business sector rose 3.1 percent in the first quarter, compared with a 6.0 percent rise one quarter earlier.

Manufacturing

Productivity increased at a 3.8 percent seasonally adjusted annual rate in manufacturing in the first quarter of 1989, as output rose 4.6 percent and hours of all persons increased 0.8 percent (seasonally adjusted annual rates). Manufacturing productivity growth was much faster in the first quarter of 1989 than in the fourth quarter of 1988 (table 3). Productivity, output, and hours of labor input all advanced faster in nondurable goods industries than in durables (tables 4 and 5). While output increased in both subsectors, the increase in hours occurred mainly in nondurables.

Hourly compensation of all manufacturing workers increased 4.1 percent during the first quarter, with faster gains recorded for producers of durable goods. Real hourly compensation for the whole sector fell 1.2 percent when the increase in consumer prices is taken into account. Unit labor costs increased at a 0.4 percent annual rate, compared with a 3.5 percent increase during the fourth quarter of 1988.

Fourth quarter measures for nonfinancial corporations

Fourth-quarter 1988 measures of productivity and costs also were announced today for the nonfinancial corporate sector, together with revised annual movements (tables B and C). Output per all-employee hour increased 0.2 percent from the third to the fourth quarter of 1988, as output increased 4.5 percent and all-employee hours increased 4.2 percent (seasonally-adjusted annual rates). Productivity thus increased for the first and last quarters of 1988, but fell during the second and third quarters (table 6).

Table B. Nonfinancial corporations: Fourth quarter and current 1988 annual measures
(Seasonally adjusted annual rates)

Period	Productivity	Output	Hours	Hourly compensation	Real hourly compensation	Unit labor costs	Unit profits	Implicit price deflator
1988 III- 1988 IV	0.2	4.5	4.2	4.6	0.1	4.3	14.1	5.0
1987 IV - 1988 IV	0.5	4.3	3.7	4.3	0.0	3.8	4.3	3.7
1988 Annual	1.3	5.3	3.9	4.1	0.0	2.7	1.1	2.5

Table C. Nonfinancial corporations: Previous and current 1988 annual change in productivity and related measures (Percent change)

Measure	Productivity	Output	Hours	Hourly compensation	Real hourly compensation	Unit labor costs	Unit profits	Implicit price deflator
Previous	1.2	5.1	3.9	4.2	0.0	2.9	-0.8	2.5
Current	1.3	5.3	3.9	4.1	0.0	2.7	1.1	2.5

Hourly compensation increased 4.6 percent in the fourth quarter, but rose only 0.1 percent when the rise in the CPI-U is taken into account. Unit labor costs rose 4.3 percent, unit nonlabor costs increased 3.8 percent, and unit profits rose at a 14.1 percent annual rate. The implicit deflator for nonfinancial corporate output rose 5.0 percent during the fourth quarter.

REVISED MEASURES

Current and previous measures for the fourth quarter and full year 1988 for the business, nonfarm business, and manufacturing sectors are compared in table D. Fourth quarter movements differ somewhat from those that had been reported on March 7, based on information then available. Annual movements were virtually the same as previously published.

Table D. Previous and current productivity and related measures, fourth quarter and annual averages, 1988 (Seasonally-adjusted annual rates)

Sector	Productivity	Output	Hours	Hourly compensation	Real hourly compensation	Unit labor costs
Percent change, third to fourth quarter 1988						
Business:						
Previous	-2.0	2.2	4.3	4.7	0.3	6.8
Current	-1.0	3.3	4.3	4.3	-0.2	5.4
Nonfarm business:						
Previous	0.1	3.7	3.6	5.6	1.1	5.6
Current	1.0	4.8	3.7	5.2	0.7	4.1
Manufacturing:						
Previous	1.8	5.5	3.6	5.5	1.0	3.5
Current	1.6	5.1	3.5	5.1	0.6	3.5
Percent change, 1987 to 1988						
Business:						
Previous	1.0	4.5	3.4	4.8	0.7	3.7
Current	1.1	4.6	3.5	4.8	0.6	3.7
Nonfarm business:						
Previous	1.4	5.1	3.6	4.7	0.5	3.2
Current	1.5	5.2	3.7	4.6	0.4	3.1
Manufacturing:						
Previous	3.2	6.1	2.8	3.6	-0.6	0.3
Current	3.2	6.1	2.8	3.5	-0.6	0.3

Next release date

The next release of Productivity and Costs is scheduled for **10:00 AM EDT Thursday, June 1, 1989**. First-quarter measures for nonfinancial corporations and measures for business, nonfarm business, and manufacturing will be released at that time.

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 non-profit 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 accounted for 81 percent of gross national product in 1988. The nonfarm business sector, which also excludes farming, accounted for about 79 percent of gross national product in 1988.

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 accounted for about 22 percent of gross national product in 1988.

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 dwellings, 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 accounted for about 60 percent of gross national product in 1988.

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									
1988	I	112.8	138.0	122.3	195.8	101.9	173.5	170.0	172.3
	II	111.8	138.8	124.1	198.1	102.0	177.1	170.4	174.7
	III	112.3	139.8	124.5	201.1	102.4	179.0	172.7	176.8
	IV	r112.0	r140.9	125.8	r203.2	r102.3	r181.4	r174.6	179.0
	ANNUAL	r112.2	r139.4	r124.3	r199.4	r102.1	r177.8	r172.0	175.7
1989	I	113.0	143.2	126.8	206.0	102.4	182.3	177.0	180.4
Percent change from previous quarter at annual rate(5)									
1988	I	3.5	5.5	1.9	3.7	0.0	0.2	2.5	1.0
	II	-3.4	2.4	6.0	4.8	0.3	8.5	1.0	5.8
	III	1.7	2.8	1.1	6.2	1.4	4.4	5.3	4.7
	IV	r-1.0	r3.3	4.3	r4.3	r-0.2	r5.4	r4.7	5.1
	ANNUAL	r1.1	r4.6	r3.5	4.8	r0.6	3.7	r1.9	3.1
1989	I	3.5	6.7	3.1	5.7	0.3	2.1	5.5	3.3
Percent change from corresponding quarter of previous year									
1988	I	2.7	5.8	3.0	4.5	0.5	1.8	2.7	2.1
	II	1.1	5.0	3.9	4.8	0.9	3.7	1.0	2.7
	III	0.6	4.1	3.5	5.2	1.0	4.6	0.7	3.2
	IV	r0.2	r3.5	3.3	r4.7	r0.4	r4.6	r3.4	r4.1
	ANNUAL	r1.1	r4.6	r3.5	4.8	r0.6	3.7	r1.9	3.1
1989	I	0.2	3.8	3.6	5.2	0.4	5.1	4.1	4.7

See footnotes following table 6.
r=revised

May 3, 1989
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								
1988	I	110.8	137.9	124.4	194.6	101.3	175.7	174.2
	II	110.1	139.2	126.4	196.6	101.3	178.6	176.2
	III	110.7	140.5	126.9	199.4	101.5	180.2	178.0
	IV	r110.9	r142.1	128.1	r201.9	r101.7	r182.0	r177.9
	ANNUAL	r110.6	r139.9	r126.6	r198.0	r101.4	r179.1	r173.9
1989	I	111.1	143.4	129.1	204.8	101.8	184.3	182.0
Percent change from previous quarter at annual rate(5)								
1988	I	3.4	5.6	2.1	3.5	-0.1	0.1	1.6
	II	-2.4	4.0	6.6	4.2	-0.3	6.8	0.7
	III	2.0	3.5	1.5	5.7	0.9	3.7	4.8
	IV	r1.0	r4.8	r3.7	r5.2	r0.7	r4.1	r9.6
	ANNUAL	r1.5	r5.2	r3.7	r4.6	r0.4	r3.1	r2.1
1989	I	0.5	3.6	3.1	5.7	0.3	5.2	-0.7
Percent change from corresponding quarter of previous year								
1988	I	2.8	6.0	3.1	4.4	0.4	1.6	2.6
	II	1.4	5.6	4.1	4.6	0.7	3.2	1.2
	III	1.0	4.7	3.8	5.0	0.8	4.0	0.5
	IV	r1.0	r4.5	r3.5	r4.7	r0.3	r3.6	r4.1
	ANNUAL	r1.5	r5.2	r3.7	r4.6	r0.4	r3.1	r2.1
1989	I	0.2	4.0	3.7	5.2	0.4	4.9	3.5

See footnotes following table 6.
r=revised

May 3, 1989
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							
1988	I	134.3	135.0	100.6	190.7	99.3	142.1
	II	135.5	136.9	101.1	192.1	99.0	141.8
	III	137.2	139.3	101.5	194.4	99.0	141.6
	IV	r137.8	r141.1	102.4	r196.8	r99.1	142.9
	ANNUAL	136.2	138.1	101.4	r193.5	r99.1	142.1
1989	I	139.0	142.7	102.6	198.8	98.8	143.0
----- Percent change from previous quarter at annual rate(5)							
1988	I	3.2	4.6	1.3	5.4	1.8	2.2
	II	3.7	5.8	2.0	3.0	-1.5	-0.7
	III	5.2	7.1	1.8	4.8	0.0	-0.5
	IV	r1.6	r5.1	r3.5	r5.1	r0.6	3.5
	ANNUAL	3.2	6.1	2.8	r3.5	-0.6	0.3
1989	I	3.8	4.6	0.8	4.1	-1.2	0.4
----- Percent change from corresponding quarter of previous year							
1988	I	3.3	6.2	2.8	2.6	-1.3	-0.7
	II	2.8	6.4	3.4	3.2	-0.7	0.3
	III	3.3	6.2	2.8	3.8	-0.3	0.5
	IV	r3.4	r5.6	2.2	4.6	r0.2	1.1
	ANNUAL	3.2	6.1	2.8	r3.5	-0.6	0.3
1989	I	3.6	5.7	2.0	4.2	-0.5	0.6

See footnotes following table 6.
r=revised

May 3, 1989
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						
1988	I	141.3	141.3	100.0	189.5	134.1
	II	142.7	144.0	100.9	190.1	133.3
	III	144.2	146.4	101.5	192.3	133.4
	IV	r144.6	r148.3	102.6	r194.8	r134.7
	ANNUAL	143.2	145.0	101.3	r191.7	133.9
1989	I	145.9	149.8	102.7	197.0	135.0
----- Percent change from previous quarter at annual rate(5)						
1988	I	3.8	4.3	0.4	7.1	3.2
	II	3.8	7.7	3.8	1.4	-2.3
	III	4.3	6.8	2.4	4.7	0.5
	IV	r1.2	r5.3	r4.1	r5.3	r4.0
	ANNUAL	3.4	6.6	3.1	3.5	0.1
1989	I	3.6	4.2	0.5	4.5	0.8
----- Percent change from corresponding quarter of previous year						
1988	I	3.4	6.0	2.5	2.5	-0.9
	II	3.3	7.3	3.8	3.1	-0.2
	III	3.6	7.2	3.4	3.8	0.1
	IV	3.3	r6.0	2.7	r4.6	r1.3
	ANNUAL	3.4	6.6	3.1	3.5	0.1
1989	I	3.2	6.0	2.7	4.0	0.7

See footnotes following table 6.
r=revised

May 3, 1989
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							
1988	I	123.9	125.6	101.4	193.2	100.6	156.0
	II	124.8	126.4	101.3	195.7	100.8	156.8
	III	126.9	128.8	101.5	197.9	100.8	156.0
	IV	r127.5	r130.3	102.2	200.2	100.8	r157.0
	ANNUAL	125.8	127.8	101.6	196.8	100.8	r156.5
1989	I	128.8	132.0	102.5	202.0	100.4	156.9
----- Percent change from previous quarter at annual rate(5)							
1988	I	2.3	5.1	2.7	2.9	-0.7	0.6
	II	3.2	2.7	-0.5	5.2	0.6	2.0
	III	6.8	7.7	0.9	4.6	-0.1	-2.0
	IV	r2.0	r4.8	2.7	4.7	r0.2	r2.6
	ANNUAL	2.9	r5.2	2.3	3.5	-0.6	r0.7
1989	I	4.0	5.3	1.2	3.7	-1.7	-0.4
----- Percent change from corresponding quarter of previous year							
1988	I	3.1	6.4	3.2	2.8	-1.1	-0.3
	II	2.0	4.9	2.9	3.2	-0.7	1.1
	III	2.7	4.6	1.8	3.7	-0.4	1.0
	IV	r3.5	r5.0	1.4	r4.3	0.0	r0.8
	ANNUAL	2.9	r5.2	2.3	3.5	-0.6	r0.7
1989	I	4.0	5.1	1.1	4.5	-0.2	0.5

See footnotes following table 6.
r=revised

May 3, 1989
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											
1987	I	110.1	131.3	119.3	182.9	99.0	166.2	180.8	-169.9	128.5	164.9
	II	110.9	133.3	120.2	184.3	98.6	166.1	182.6	170.3	129.8	165.4
	III	112.2	136.1	121.3	186.1	98.7	165.9	183.0	170.2	136.4	166.1
	IV	112.2	137.7	122.8	188.5	99.0	168.1	183.6	172.0	128.3	166.7
	ANNUAL	111.3	134.6	120.9	185.5	98.9	166.6	182.5	170.6	130.8	165.8
1988	I	113.3	140.1	123.6	189.9	98.9	167.5	183.4	171.5	132.5	166.9
	II	112.9	141.2	125.0	191.9	98.8	170.0	185.1	173.8	132.6	168.8
	III	112.7	142.0	126.1	194.5	99.0	172.6	187.8	176.4	129.6	170.8
	IV	112.7	143.6	127.4	196.6	99.0	174.4	189.6	178.3	133.9	172.9
	ANNUAL	r112.8	r141.7	125.6	r193.1	r98.9	r171.1	r186.5	r175.0	r132.2	169.9

Percent change from previous quarter at annual rate(5)											
1987	I	-1.0	2.9	4.0	1.6	-3.6	2.6	2.5	2.6	-3.5	2.0
	II	3.1	6.1	2.9	2.9	-1.8	-0.2	4.1	1.0	3.9	1.2
	III	4.7	8.8	4.0	4.1	0.4	-0.6	0.8	-0.2	21.9	1.7
	IV	-0.1	4.7	4.8	5.2	1.5	5.3	1.3	4.2	-21.5	1.5
	ANNUAL	1.5	4.3	2.7	3.4	-0.3	1.8	2.3	1.9	-1.2	1.6
1988	I	4.3	7.2	2.8	3.0	-0.6	-1.2	-0.3	-1.0	13.8	0.3
	II	-1.6	3.0	4.7	4.2	-0.3	5.9	3.7	5.3	0.3	4.8
	III	-0.8	2.5	3.3	5.5	0.8	6.4	6.1	6.3	-8.9	4.8
	IV	0.2	4.5	4.2	4.6	0.1	4.3	3.8	4.2	14.1	5.0
	ANNUAL	r1.3	r5.3	3.9	r4.1	0.0	r2.7	r2.2	r2.6	r1.1	2.5

Percent change from corresponding quarter of previous year											
1987	I	0.5	2.0	1.5	3.3	1.1	2.8	2.3	2.6	-3.8	2.0
	II	1.5	3.9	2.4	3.2	-0.6	1.7	3.2	2.1	-2.2	1.7
	III	2.3	5.6	3.2	3.3	-0.9	0.9	1.5	1.1	2.0	1.2
	IV	1.6	5.6	3.9	3.4	-0.9	1.8	2.2	1.9	-1.1	1.6
	ANNUAL	1.5	4.3	2.7	3.4	-0.3	1.8	2.3	1.9	-1.2	1.6
1988	I	3.0	6.7	3.6	3.8	-0.2	0.8	1.5	1.0	3.1	1.2
	II	1.8	5.9	4.1	4.1	0.2	2.3	1.4	2.1	2.2	2.1
	III	0.4	4.3	3.9	4.5	0.3	4.0	2.7	3.7	-5.0	2.8
	IV	0.5	4.3	3.7	4.3	0.0	3.8	3.3	3.7	4.3	3.7
	ANNUAL	r1.3	r5.3	3.9	r4.1	0.0	r2.7	r2.2	r2.6	r1.1	2.5

See footnotes following table 6.
r=revised

May 3, 1989
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. The measures are first 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 initial value by between -1.8 and +2.1 index points. This interval is based on the performance of this measure between the first quarter of 1976 and the second quarter of 1988.

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. For nonfinancial corporations, rental income of persons is zero by definition.
- (8) Total unit cost is the sum of labor and nonlabor costs.
- (9) Unit profits include corporate profits with inventory valuation and capital consumption adjustments.