



Bureau of Labor Statistics

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# PRODUCTIVITY AND COSTS Third Quarter 1986

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 third quarter of 1986. Based on information now available, the seasonally-adjusted annual rates of productivity increase in the third quarter were:

- 0.1 percent in the business sector,
- 0.2 percent in the nonfarm business sector,
- 4.2 percent in manufacturing,
- 3.8 percent in durable goods manufacturing, and
- 4.9 percent in nondurable goods manufacturing.

Third-quarter measures are summarized in table A and appear in detail in tables 1 through 5.

#### Business

Productivity increased at a 0.1 percent annual rate during the third quarter of 1986 in the business sector, as output rose 2.5 percent and hours of all persons engaged in the sector increased 2.4 percent (seasonally adjusted annual rates). Although productivity gains in both the second and third quarter were small, the third-quarter results reflect stronger underlying gains in both output and hours. During the second quarter of 1986, output rose only 0.3 percent and hours of all persons declined 0.2 percent (table 1).

Hourly compensation increased at a 2.9 percent annual rate during the third quarter of 1986, compared with a 2.8 percent gain during the second quarter. This marked the third quarter during which hourly compensation increases were smaller than 3.0 percent, and only the second time since 1960 so little growth occurred over a 9-month period. 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, increased at a 2.8 percent annual rate during the third quarter, compared with a 2.3 percent increase during the second quarter.

Real hourly compensation, which takes into account the increase in the Consumer Price Index for All Urban Consumers (CPI-U), increased 0.3 percent in the third quarter. Real hourly compensation increased 4.5 proent in the second quarter of 1986, partly reflecting falling consumer prices.

Table A. Productivity and costs: Preliminary third quarter 1986 measures (Seasonally adjusted annual rates)

Sector	Produc- tivity	Output	Hours	Hourly compen- sation	Real hourly compen- sation	Unit labor costs	
	Percen	t change f	rom prece	ding quarte	•		
Business	0.1	2.5	2.4	2.9	0.3	2.8	$\widetilde{\Gamma}$
Nonfarm business	0.2	3.2	3.0	2.3	-0.2	2.1	Gameiras E E
Manufacturing	4.2	3.4	-0.8	2.7	0.1	-1.5	
Durable	3.8	1.8	-2.0	2.7	0.1	-1.1	
Nondurable	4.9	5.9	0.9	3.0	0.4	-1.8	くう
	Percent d	nange from	same qua	rter a year	ago		
Business	0.1	2.1	2.0	3.0	1.3	2.8	
Nonfarm business	0.3	2.5	2.1	2.8	1.2	2.5	7
Manufacturing	2.4	2.1	-0.3	2.6	0.9	0.1	Section Section
Durable	1.9	0.5	-1.3	2.7	1.1	0.9	-
Nondurable	3.5	4.7	1.1	2.5	0.8	-0.9	A1600.0000

The implicit price deflator for the business sector, which reflects changes in unit labor costs and unit nonlabor payments, increased 3.1 percent in the third guarter.

# Nonfarm business

Productivity increased 0.2 percent in the nonfarm business sector during the third quarter of 1986, as output rose 3.2 percent and hours of all persons—employees, proprietors, and unpaid family workers—increased 3.0 percent. As in the more comprehensive business sector, output and hours grew more strongly in the third than in the second quarter, although productivity gains were small (table 2).

Hourly compensation increased a modest 2.3 percent in the third quarter, but fell 0.2 percent when the increase in the CPI-U is taken into account. Although hourly compensation increased at the same rate in the second and third quarters, real hourly compensation moved quite differently, reflecting the changes in the CPI-U. Unit labor costs increased 2.1 percent in the third quarter.

The implicit price deflator for the nonfarm business sector rose 3.1 percent in the third quarter, compared with a 1.0 percent increase one quarter earlier.

## Manufacturing

Productivity increased at a 4.2 percent seasonally adjusted annual rate in manufacturing in the third quarter of 1986, as output rose 3.4 percent and hours of all persons decreased 0.8 percent. During the second quarter, output and hours both declined (table 3). Productivity grew in both durables and nondurables, but hours of all persons declined in durables while increasing slightly in the nondurable subsector (nearly half again as many people are employed in producing durables as are in nondurable goods). Output grew more slowly among durable goods industries (tables 4,5).

Hourly compensation of manufacturing workers increased 2.7 percent during the third quarter, or 0.1 percent when the increase in consumer prices is taken into account. Unit labor costs fell at a 1.5 percent annual rate, compared with a 0.5 percent decrease during the second quarter of 1986. This was the third quarter during which labor costs have fallen in manufacturing.

## Next release date

The next issue of Productivity and Costs is scheduled for release at 10:00 AM EST, Tuesday, December 2, 1986, and will contain revised third-quarter measures for business, nonfarm business, and manufacturing and preliminary measures for nonfinancial corporations.

## 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 cutput is equal to gross national product in constant 1982 dollars, less the rest-of-the-world sector, general government, unincorporated business, cutput of paid employees of private households and nonprofit institutions, rental value of owner-occupied dwelling, the output of corporations engaged in baking, 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; mangerial 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	Compensa- tion per hour(1)	Real compensa- tion per hour(2)	Unit labor cost	Unit non- labor pay- ments(3)	Implicit price deflator(4)
				Ir	ndexes 1977=100				,
1985	I	105.7	121.3	114.8	172.3	98.4	163.1	158.3	161.4
	II	106.4	122.3	115.0	174.5	98.7	164.0	160.0	162.6
	.CIT	107.3	123.5	115.2	176.4	99.1	164.4	161.4	163.4
	IA	106.4	123.8	116.4	178.0	99.0	167.3	159.6	164.6
	ANNUAL.	106.4	122.7	115.3	175.3	98.8	164.8	159.7	163.0
1986	I	107.3	125.3	116.8	179.1	99.2	167.0	162.2	165.3
	II	r107.4	r125.4	r116.7	180.4	100.3	r168.0	161.9	r165.8
	111	p107.4	pl26.2	p117.5	p181.7	p100.4	p169.1	p163.4	p167.1
			Percent	change from p	previous quarte	r at annual rate	(5)		
1985	I	0.9	3.6	2.6	4.2	1.0	3.3	1.6	2.7
	II	2.7	3.3	0.6	5.1	1.0	2.4	4.2	3.0
	III	3.4	4.1	0.7	4.4	1.8	1.0	3.7	1.9
	In	-3.2	1.0	4,3	3,8	-0.5	7.2	-4.3	3.0
	ANNUAL	1.0	3,3	2,2	4,3	0.7	3.2	2.2	2.9
1986		3.3	4.7	1.4	2.5	1.0	-0.7	6.6	1.8
	II	r0.5	r0.3	r-0.2	r2.8	4.5	r2.3	-0.7	rl.2
	III	p0.1	p2.5	p2.4	p2.9	p0.3	p2.8	p3.8	p3.1
	,		Percent ch	ange from cot	rresponding qua	rter of previous	year		
1985		0.8	3.8	3.0	3.9	0.3	3,1	2.7	3.0
	11	0.8	2.8	2.0	4.5	0.7	3.6	2.0	3.1
	III	1.7	3.4	1.7	4.4	1.0	2.6	2.8	2.7
	ΙΛ	0.9	3.0	2.1	4.4	0.8	3,4	1.2	2.7
	ANNUAL	1.0	3,3	2.2	4.3	0.7	3.2	2,2	2.9
1986		1.5	3,3	1.8	3.9	0.8	2.4	2,5	2.4
	II	rl.0	r2.5	1.6	r3.4	1.7	r2.4	1.2	r2.0
	III	p0.1	p2.1	p2.0	p3.0	pl.3	p2.8	pl.2	p2.3

r=revised p=preliminary

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	Compensa- tion per hour(1)	Real compensa- tion per hour(2)	Unit labor cost	Unit non- labor pay- ments(3)	Implicit price deflator(4)
				Ir	vieces 1977=100			<del></del>	
1985		104.4	121.1	116.0	172.1	98,2	164.8	158.9	162.7
	II	104.9	122.1	116.4	174.0	98.4	165.9	160.8	164.1
	l I I	105.4	123.3	116.9	175.4	98.5	166.3	163.0	165.2
	۲۷	104.5	123.6	118.2	177.0	98.4	169.3	160.3	166.2
	ANNUAL	104.8	122.5	116.9	174.6	98.4	166.7	160.6	164.6
1986	I	105.6	125.1	118.5	178.3	98.8	168.8	163.9	167.1
	II	r105.7 🕾	r125.3	118.5	179.3	r99.8	r169.6	r163.7	r167.5
	111	p105.8	p126.3	pl19.4	p180.4	p99.7	p170.5	p165.7	pl68.8
			Percent	change from [	previous quarte	r at annual rate	(5)		
1985	I	0.3	3.2	2.9	3.9	0.7	3.6	2.5	3.2
	II	1.8	3.0	1.2	4.6	0.5	2.7	4.7	3.4
	111	2.2	4.0	1.8	3,2	0.7	1.0	5.7	2.6
	IV	<b>-3.5</b> %	1.0	4.6	3.7	-0.6	7.4	-6.6	2.4
	ANNUAL	0.5	3.0	2.6	4.0	0.4	3.5	2.9	3.3
1986	I	4.3	5.1	0.8	3.1	1.6	-1.2	9.3	2.3
	11	r0.5	r0.6	r0.1	r2.3	r4.0	r1.8	r-0.6	rl.0
	CEE	p0.2	p3.2	p3.0	p2.3	p-0.2	p2.1	p5.0	p3.1
			Percent ch	ange from com	cresponding qua	rter of previous	Year	· ·	
1985	ī	0.5	3,6	3.1	3.9	0.3	3.4	3.7	3.5
	11	0.2	2.5	2,3	4.2	0.5	4.0	2.8	3.6
	, cer	1.0	3.1	2.1	4.0	0.6	3.0	3.7	3.2
	۲۷	0.2	2.8	2.6	3.9	0,3	3.7	1.5	2.9
	ANNUAL.	0.5	3.0	2.6	4.0	0.4	3.5	2.9	3,3
1986	·	1.2	3,3	2.1	3.6	0.5	2.5	3.1	2.7
	£1	r0.8	r2.7	1.8	3.1	1.4	r2,2	rl.8	r2.1
	III	p0.3	p2.5	p2.1	p2.8	p1.2	p2.5	pl.6	p2.2

See footnotes following table 6. rerevised pepteliminary

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

						Real	<b>.</b>		
	Year and quarter	Output per hour of all persons	Output (6)	Hours of all persons	Compensa- tion per hour(1)	compensa- tion per hour(2)	Unit labor cost		
			Ind	exes 1977=100	)				
1985	· · I	119.3	118.8	99.6	173.8	99.2	145.7		
	II	121.7	119.9	98.5	175.6	99.3	144.3		
	III	123.0	121.2	98.5	178.1	100.0	144.8		
	IV	122.9	121.9	99.1	179.3	99.7	145.8		
	ANNUAL	121.7	120.4	98.9	176.7	99.5	145.1		
1986	I	r123.7	r122.8	99.3	180.2	99.8	r145.7		
	II	r124.7	r122.7	98.4	181.4	100.9	r145.5		
	III	p126.0	pl23.7	p98.2	p182.6	p101.0	p144.9		
		Percent cha	nge from pr	evious quarte	er at annual ra	te(5)			
1985	I	3.9	3.2	-0.6	5.5	2.2	1.5		
	II	8.2	3.7	-4.2	4.3	0.3	-3.6		
	III	4.4	4.3	-0.1	5.6	3.0	1.2		
	IA	-0.3	2.4	2.7	2.8	-1.4	3.0		
	ANNUAL	4.4	3.8	-0.5	5.0	1.4	0.6		
1986	I	r2.6	r3.0	0.4	2.1	0.6	r-0.5		
	II	r3.2	r-0.4	r-3.5	r2.7	r4.4	r-0.5		
	III	p4.2	p3.4	p-0.8	p2.7	p0.1	p-1.5		
		Percent chang	e from corr	esponding qua	arter of previo	us year			
1985	I	4.0	4.8	8.0	5.1	1.4	1.1		
	II	5.2	4.0	-1.2	5.3	1.6	0.1		
	III	4.4	3.2	-1.2	5.3	1.9	0.9		
	IV	4.0	3.4	-0.6	4.5	1.0	0.5		
	ANNUAL	4.4	3.8	-0.5	5.0	1.4	0.6		
1986	I	r3.7	r3.4	-0.3	3.7	0.6	r0.0		
	II	r2.5	r2.3	r-0.2	3.3	1.6	r0.8		
	III	p2.4	p2.1	p-0.3	p2.6	p0.9	p0.1		

r=revised

p=preliminary

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

	Year <b>and</b> quar <b>ter</b>	Output per hour of all persons	Output (6)	Hours of all persons	Compensa- tion per hour(1)	Real compensa- tion per hour(2)	Unit labor cost
			Ind	exes 1977=100			
1985	<b>1</b>	121.4	122.6	100.9	172.0	98.2	141.6
	II	124.4	124.1	99.8	173.2	97.9	139.2
	III	126.3	125.6	99.5	176.5	99.2	139.8
	IV	126.4	126.4	100.0	178.0	98.9	140.8
	ANNUAL	124.6	124.7	100.1	174.9	98.5	140.3
1986	I	r127.1	r126.9	99.9	178.9	99.1	r140.8
	II	r127.4	r125.7	98.7	r180.2	100.2	r141.4
	III	p128.6	p126.2	p98.2	pl81.4	p100.2	p141.0
		Percent cha	nge fram pr	evious quarte	r at annual ra	ite(5)	¥ ;
1985	Î	8.2	7.2	-0.9	6.1	2.8	-1.9
	11	10.2	5.1	-4.6	3.0	-1.0	r-6.6
المجادة الجا الحادث الحادث	III	6.1	4.9	-1.1	7.8	5.1	1.6
	IV	0.5	2.7	2.2	3.3	-0.9	r2.8
	ANNUAL	6.8	6.6	-0.2	5.0	1.4	-1.7
1986	I	r2.1	rl.5	-0.6	2.2	0.7	r0.1
	ii .	rl.0	r-3.8	r-4.8	r2.8	r4.5	r1.7
	III	p3.8	pl.8	p-2.0	p2.7	p0.1	p-1.1
		Percent chang	e from corr	esponding qua	rter of previo	us year	
1985	1	6,5	8.7	2.0	4.8	1.1	r-1.7
	II ·	r7.9	7.4	-0.4	4.8	1.1	-2.8
	111	r6.8	5.4	-1.2	5,6	2.1	-1.1
	IV	6.2	5.0		5.0	1,5	<b>al.1</b>
	ANNUAL	6.8	6.6	-0.2	5.0	1.4	-1.7
1986		<b>£4.7</b>	r3.5	-1,1	<b>4.1</b>	0.9	r-0.6
	II	r2.4	rl.3	-1.1	4.0	2.3	rl.6
	III	p1.9	p0.5	p-1.3	p2.7	p1.1	p0.9

r=revised p=preliminary October 29, 1986

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	Compensa- tion per hour(1)	Real compensa- tion per hour(2)	Unit labor cost
			Ind	exes 1977=100	)		
1985	• 1	116.0	113.2	97.6	176.5	100.8	152.1
	II	117.5	113.6	96.7	179.4	101.5	152.7
	III	118.0	114.5	97.0	180.4	101.3	152.8
	IV	117.6	115.1	97.9	181.3	100.8	154.1
	ANNUAL	117.3	114.1	97.3	179.4	101.0	152.9
1986	1	r118.6	r116.7	98.3	182.2	100.9	r153.6
	II	r120.7	r118.2	r97.9	183.5	102.1	r152.1
	111	p122.1	p119.9	p98.2	p184.9	p102.2	p151.4
	7	Percent cha	nge from pr	evious quarte	r at annual ra	te(5)	
1985	I	-2.6	-2.8	-0.2	4.4	1.2	7.2
	11	5.2	1.5	-3.5	6.9	2.8	1.7
	III	. 1.8	3.3	1.5	2.1	-0.4	0.3
	IA	-1.4	19	3,4	1.9	-2.3	3.4
	ANNUAL	0.7	-0.3	-1.0	5.0	1.4	4.3
1986	I	r3.5	r5.6	2.0	2.2	0.7	r-1.3
	II	r7.0	r5.3	r-1.6	r2.9	r4.6	r-3.9
	III	p4.9	p5.9	p0.9	p3.¢	p0.4	p-1.8
		Percent chang	e from corr	esponding qua	rter of previous	us year	
1985	, <b>1</b>	0.1	-0.9	-1.0	5 <b>.3</b>	1.7	5.2
	II	1.2	-1.1	-2.3	6.1	2.3	4.8
	III	0.9	-0.3	-1.1	4.9	1.5	4.0
	IV	0.7	1.0	0.3	3.8	0.3	3.1
	ANNUAL	.0.7	-0.3	-1.0	5.0	"" <b>1.4</b> "	4.3
1986	1	r2.2	r3.1	0.8	3.3	0.2	r1.0
	II	r2.7	r4.0	1.3	2.3	0.6	r-0.4
	III	p3.5	p4.7	p1.1	p2.5	p0.8	p-0.9

See footnotes following table 6. r=revised p=preliminary

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 compensa- tion (1)	Real hourly compen- sation(2)	Unit labor cost	Unit non- labor cost(7)	Total unit cost (8)	Unit pro- fits (9)	Implicit price deflator (4)
					Index	es 1977=100	)		- 1 - N - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1		
1985	I II IV	106.0 106.5 107.8 107.0	123.1 124.2 126.0 126.1	116.6 116.8	169.9 171.6 173.1 174.5	97.0 97.0 97.2 97.0	160.3 161.1 160.5 163.0	178.5 179.8 178.3 179.8	164.9 165.8 165.0 167.2	129.3 130.2 141.7 131.2	160.6 161.6 162.2 162.9
	ANNUAL	106.8	124.8	116.9	172.3	97.0	161.2	179.1	165.8	133.1	161.8
1986	II	106.9 r106.8	126.9 r126.6			97.1 97.9	164.0 r164.8	181.1 r179.9	168.3 r168.6	131.7 r132.3	
			Perce	nt change	from prev	ious quarte	r at annu	al rate(5	)		
1985	II III IV	0.8 2.2 4.9 -2.8	3.2 3.7 5.9 0.5	1.4	3.8 4.2 3.4 3.3	0.6 0.2 0.9 -0.9	3.0 2.0 -1.4 6.3	2.2 3.0 -3.3 3.3	2.8 2.3 -1.9 5.5	-3.6 3.0 40.1 -26.4	2.2 2.3 1.7 1.7
	ANNUAL	1.2	3.7	2.5	3.9	0.3	2.7	2.6	2.7	-0.2	2.4
1986	II I	-0.5 r-0.3	2.6 r-1.1		2.0 rl.6	0.5 r3.3	2.5 rl.9	3.1 r-2.7	2.7 r0.6	1.3 r2.0	
			Percent	change f	rom corres	ponding qua	rter of p	revious y	ear		
1985	I II III IV ANNUAL	0.6 0.6 2.2 1.2	4.1 3.1 4.2 3.3	2.5 2.0 2.1	4.1	0.2 0.4 0.5 0.2	3.2 3.5 1.6 2.4	4.3 3.9 1.1 1.3	3.5 3.6 1.5 2.1	-3.8 -5.9 8.7 0.6	2.7 2.6 2.2 2.0
1986	II	0.9 r0.3	3.2 r2.0			0.2 0.9	2.3 r2.3	1.5 r0.0	2.1 rl.7	1.8 rl.6	2.1 rl.7

r=revised p=preliminary

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 -1.7 and +1.9 index points. This interval is based on the performance of this measure between the first quarter of 1976 and the second quarter of 1985.

# 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.