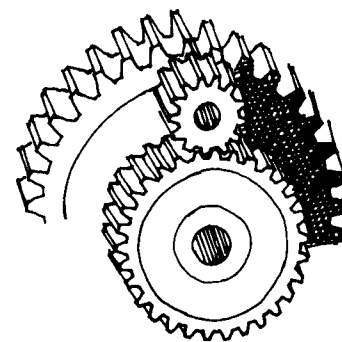


# Productivity Reports



## Recent productivity measures depict growth patterns since 1980

LAWRENCE J. FULCO

Strong productivity advances and falling unit costs prevailed in the second quarter of 1983, as the U.S. economy entered the expansionary phase of the business cycle. Gains in output and hours were substantial, while prices rose only moderately. These results, recently announced by the Bureau of Labor Statistics, are part of an update of the information that affected data from 1980 forward, and are shown in table 1.

Business productivity advanced at a 5.7-percent annual rate during the second quarter of 1983, the largest gain in more than 2 years. Hourly compensation rose only 3.5 percent during the same period, the smallest rise in more than a decade. As a result, unit labor costs—compensation per unit of output—declined 2.1 percent, the first drop in 8 years. Unit nonlabor payments (which include indirect business taxes, capital consumption allowances, and profits) rose, but the increase was largely offset by the drop in unit labor costs. This was reflected in slower price gains.

The productivity gain during the second quarter of 1983 resulted from a 12.5-percent increase in output and a 6.5-percent gain in hours. This provides added evidence that the contraction phase of the cycle has ended. In the first half of 1983, employment in the business sector rose by nearly 1 million persons, and the average workweek increased from 36.1 to 36.4 hours.

The following tabulation summarizes seasonally adjusted annual rates of change in productivity, output, and hours from the first to the second quarter of 1983.

<i>Sector</i>	<i>Productivity</i>	<i>Output</i>	<i>Hours</i>
Business .....	5.7	12.5	6.5
Nonfarm business .....	6.1	12.7	6.2
Manufacturing .....	8.4	20.5	11.2
Durable .....	10.1	23.8	12.4
Nondurable .....	6.1	16.2	9.4
Nonfinancial corporations .....	5.5	13.5	7.6

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Changes in productivity and cost measures are typically stated as quarterly movements expressed at a compound annual rate. Thus, the 5.7-percent increase reported for productivity in the business sector during the second quarter is the amount by which output per hour of all persons would increase in a year if the performance during the second quarter were to continue. Comparing the current quarter with the same period of the previous year yields a more stable series. The following tabulation shows changes in productivity, output, and hours from the second quarter of 1982 to the second quarter of 1983:

	<i>Productivity</i>	<i>Output</i>	<i>Hours</i>
Business .....	3.2	3.2	0.0
Nonfarm business .....	3.3	3.0	-0.3
Manufacturing .....	6.7	5.4	-1.2
Durable .....	7.6	4.6	-2.8
Nondurable .....	5.5	6.7	1.1
Nonfinancial corporations .....	3.3	2.7	-0.6

The productivity measures in this report show the changes in the output of goods and services produced per hour of all persons. As chart 1 shows, productivity has been virtually flat since 1973 while hourly compensation—and unit labor costs—have increased steadily in each sector. The relatively small productivity gains since 1973 contrast sharply with the growth which occurred from 1947 to 1973. For example, in nonfarm business, output per hour advanced 2.5 percent per year prior to 1973, and 0.6 percent per year thereafter.<sup>1</sup> While a large number of potential causes of the slowdown have been investigated, much of it remains unexplained.

Although output is related to hours of all persons engaged in a sector, the productivity series do not measure the separate contribution of labor, capital, or any other specific 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.

The updated figures show that productivity in the business sector declined by 0.1 percent during 1982.

### Compensation and costs

Hourly compensation, which measures employer outlays to secure the services of labor, rose at a 3.5-percent annual rate during the second quarter of 1983, the smallest quarterly

**Table 1. Revised percent change from preceding quarter in productivity, hourly compensation, unit costs, and prices, seasonally adjusted at annual rate, 1980-83**

Sector and measure	1980				1981				1982				1983	
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II
<b>Business:</b>														
Output per hour of all persons	1.5	-2.9	1.3	1.0	5.9	2.2	4.7	-4.1	-0.4	-1.6	1.7	3.3	2.0	5.7
Output	1.0	-10.2	0.4	6.2	8.3	2.3	5.2	-7.8	-6.3	-1.0	-1.1	-2.3	4.2	12.5
Hours	-0.5	-7.5	-0.9	5.1	2.3	0.1	0.5	-3.9	-6.0	0.6	-2.7	-5.4	2.1	6.5
Employment	1.4	-4.5	-0.8	3.3	1.7	1.7	2.0	-2.7	-3.2	-1.0	-1.9	-3.8	0.7	4.4
Average weekly hours	-1.9	-3.2	-0.1	1.7	0.6	-1.6	-1.4	-1.3	-2.9	1.7	-0.9	-1.6	1.4	2.0
Hourly compensation	12.5	11.9	9.5	9.5	11.5	7.4	9.6	7.5	9.4	6.4	6.7	5.7	5.4	3.5
Real hourly compensation	-3.1	-1.8	1.5	-2.6	0.8	-1.0	-2.2	0.3	6.3	1.1	-1.0	3.7	5.8	-0.7
Unit labor costs	10.8	15.2	8.0	8.4	5.3	5.0	4.7	12.2	9.8	8.1	5.0	2.3	3.3	-2.1
Unit nonlabor payments	8.1	4.5	11.5	14.8	24.7	6.9	21.0	0.8	-8.8	-0.1	-2.0	3.2	10.5	15.0
<b>Nonfarm business:</b>														
Output per hour of all persons	0.6	-3.5	2.7	1.3	5.2	0.4	3.8	-4.4	0.1	-0.4	2.3	1.3	3.7	6.1
Output	0.8	-11.0	1.6	6.4	7.8	0.8	4.3	8.3	-6.2	-0.8	-0.6	-4.1	4.9	12.7
Hours	0.2	-7.7	-1.1	5.0	2.2	0.5	0.5	-4.0	-6.2	1.2	-2.9	-5.3	1.2	6.2
Employment	1.4	-4.6	-0.9	3.2	2.0	1.6	2.2	-2.7	-3.5	-0.6	-2.1	-4.0	0.0	3.9
Average weekly hours	-1.1	-3.3	-0.2	1.8	0.4	1.1	-1.7	-1.4	-2.9	1.8	-0.8	-1.4	1.2	2.2
Hourly compensation	11.8	11.6	9.7	10.0	11.5	7.3	9.6	7.6	10.0	5.8	7.2	5.8	6.8	4.3
Real hourly compensation	-3.7	-2.0	1.8	-2.2	0.9	-1.1	-2.1	0.3	6.8	0.5	-0.6	3.7	7.2	0.1
Unit labor costs	11.2	15.7	6.9	8.5	6.0	6.9	5.6	12.6	9.9	6.2	4.7	4.4	3.0	-1.6
Unit nonlabor payments	13.1	8.7	7.1	14.3	24.8	6.0	20.0	3.4	-8.5	3.7	-3.4	2.0	0.6	15.0
<b>Manufacturing:</b>														
Output per hour of all persons	1.4	-7.3	0.0	13.7	5.6	1.4	2.6	-6.3	2.8	0.8	9.6	1.2	8.0	8.4
Output	-0.3	-21.3	-6.5	22.3	7.2	3.8	1.3	-16.8	-11.2	-2.9	0.0	-9.0	12.7	20.5
Hours	-1.7	-15.1	-6.5	7.6	1.5	2.4	-1.3	-11.2	-13.7	-3.7	-8.7	-10.0	4.3	11.2
Employment	-1.1	-11.1	-6.6	4.6	0.7	2.6	0.7	-8.1	-9.3	-6.4	-8.4	-9.2	0.2	6.6
Average weekly hours	-0.6	-4.5	0.1	2.8	0.7	-0.1	-1.9	-3.4	-4.8	2.9	-0.4	-1.0	4.1	4.3
Hourly compensation	13.9	14.2	13.1	9.9	9.8	8.0	7.5	9.8	13.1	5.1	6.5	4.5	10.7	2.1
Real hourly compensation	-1.9	0.3	4.9	-2.3	-0.7	-0.4	4.0	2.4	9.8	-0.2	-1.2	2.5	11.1	-2.1
Unit labor costs	12.3	23.2	13.1	-3.4	4.0	6.5	4.8	17.2	9.9	4.3	2.8	3.3	2.5	-5.9
<b>Nonfinancial corporations:</b>														
Output per all employee hour	-2.0	-2.3	5.9	0.1	5.7	1.4	3.6	-3.2	0.9	-0.5	3.8	0.6	3.4	5.5
Output	-1.7	-10.3	3.0	5.6	8.7	2.3	4.5	-8.5	-6.5	-1.8	-0.5	-6.0	4.6	13.5
Employee hours	0.3	-8.1	-2.8	5.5	2.8	0.9	0.9	-5.4	-7.3	-1.2	-4.1	-6.5	1.2	7.6
Employment	1.7	-5.0	-2.6	3.5	2.1	1.9	2.2	-3.8	-4.3	-2.5	-3.2	-5.2	0.0	4.7
Average weekly hours	-1.4	-3.3	-0.2	1.9	0.7	-1.0	-1.3	-1.6	-3.1	1.3	-0.9	-1.3	1.2	2.8
Hourly compensation	11.9	12.0	10.3	9.6	11.4	7.4	8.7	8.0	10.9	5.4	6.4	5.4	6.0	2.9
Real hourly compensation	-3.6	-1.6	2.3	-2.5	0.7	-1.0	-2.9	0.8	7.7	0.1	-1.3	3.4	6.4	1.3
Unit profits	16.6	-27.6	24.1	30.3	65.3	-10.1	37.6	-15.4	-42.2	-2.1	3.8	-31.4	79.9	98.5
Total unit costs	16.3	18.2	5.5	8.4	7.4	8.0	7.4	12.0	8.8	6.0	1.8	6.7	10.0	-2.5
Unit labor costs	14.2	14.7	4.1	9.5	5.3	5.9	5.0	11.7	9.9	6.0	2.4	4.8	2.5	-2.4
Unit nonlabor costs	22.5	28.7	9.4	5.5	13.3	13.8	14.1	12.9	6.1	6.0	0.1	11.9	-2.8	-2.8

increase since 1971. Including wages, salaries, supplements, and employer contributions to employee benefit plans, these costs typically account for about two-thirds of the value of output in current dollars. The slow rate of increase in hourly compensation coupled with a faster relative increase in productivity during the second quarter contributed to the decline in unit labor costs. The 2.1-percent drop in the second quarter of 1983 was the first decrease in this measure since 1975.

Real hourly compensation, which takes into account changes in consumer prices, declined during the second quarter, as the modest increase in hourly compensation was more than offset by the rise in the Consumer Price Index for All Urban Consumers (CPI-U). During the first quarter of 1983, the seasonally adjusted CPI-U declined somewhat, so real hourly compensation increased faster than the unadjusted series.

### Nonfarm business sector

In the second quarter of 1983, productivity in nonfarm business rose 6.1 percent, reflecting a 12.7-percent gain in output and a 6.2-percent increase in hours of all persons.

Employment and average weekly hours also rose.

Hourly compensation rose 4.3 percent in the second quarter, the slowest rise since 1971, and this was reflected in the 1.6-percent annual rate of decline in unit labor costs. Prices of goods and services produced in the nonfarm business sector rose 3.3 percent in the second quarter, compared with a 5.3-percent rise during the first quarter.

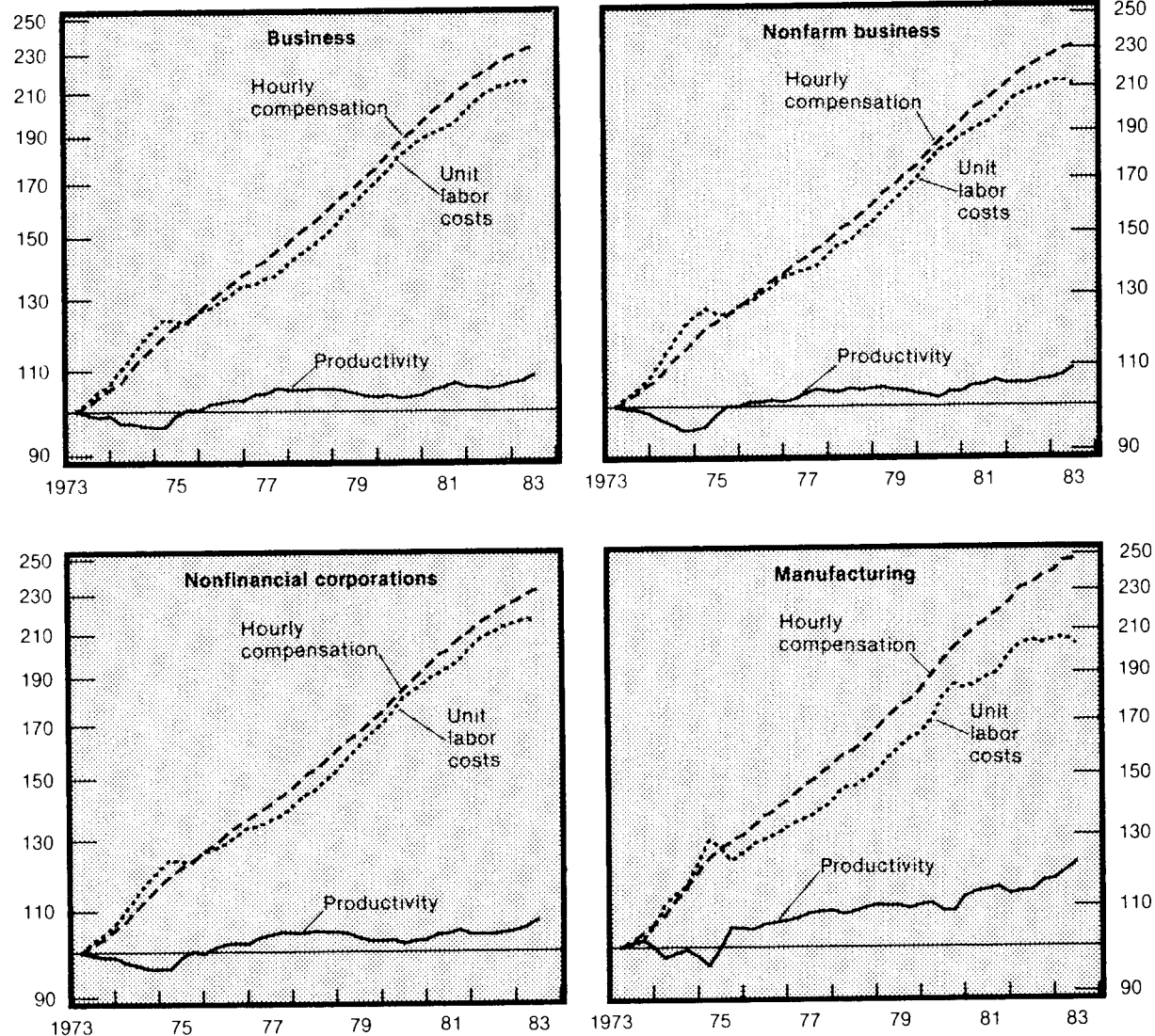
### Manufacturing

The manufacturing sector currently employs about 19 million persons, about a quarter of the nearly 80 million engaged in the business sector as a whole. Productivity in manufacturing posted very strong gains during the second quarter of 1983. Output rebounded strongly and hours of all persons increased rapidly; productivity increased 8.4 percent. Hourly compensation showed a small increase, 2.1 percent, the smallest quarterly gain since 1965, and coupled with the increase in productivity, resulted in a 5.9-percent decline in unit labor costs.

Productivity advanced faster—and unit labor costs declined more rapidly—among durables. The durables subsector is larger and more volatile than nondurables, accounting

**Chart 1. Productivity and related measures in four major sectors in the economy, 1973-83**

Ratio scale (1973 = 100)



for about 11 million persons, compared with 8 million in nondurables

### Nonfinancial corporations

Nearly 55 million persons were employees of nonfinancial corporations in mid-1983. These firms cover a broad spectrum of the economy and are of particular interest because quarterly profit measures are available for them. Their quarterly productivity movements tend to be somewhat different than those of the business sector, partly reflecting the differing importance of industries in each sector. But as can be seen in chart 1, the long-term trends are very similar to those of the larger business sectors. Table 2 shows the relative importance of the hours of the major industrial sub-

divisions in the business, nonfarm business, and nonfinancial corporate sectors in 1982.

Goods-producing industries are relatively more important in the nonfinancial corporate sector than in the nonfarm business sector because these activities are characterized by corporate ownership. In addition, a small number of corporate farms are included, which are not in the nonfarm sector.

In the nongoods-producing subdivision, important exclusions occur in trade (sole proprietorships and partnerships), finance, insurance, and real estate (stock and commodity brokers, finance and insurance companies, banks and credit institutions), and in services (noncorporate organizations).

During the second quarter of 1983, nonfinancial corporate

**Table 2. Industry composition of major sector productivity measures, 1982**

Sector	Hours of labor input					
	Business		Nonfarm business		Nonfinancial corporations	
	Billions of hours	Percent	Billions of hours	Percent	Billions of hours	Percent
Total .....	150.09	100.0	143.70	100.0	102.44	100.0
Goods producing .....	57.62	38.4	51.23	35.7	45.94	44.9
Farms .....	6.39	4.3	0.00	0.0	0.37	0.4
Mining .....	2.61	1.7	2.61	1.8	2.41	2.3
Manufacturing .....	39.01	26.0	39.01	27.2	37.36	36.5
Durable .....	23.15	15.4	23.15	16.1	( <sup>1</sup> )	( <sup>1</sup> )
Nondurable .....	15.86	10.6	15.86	11.1	( <sup>1</sup> )	( <sup>1</sup> )
Construction .....	9.61	6.4	9.61	6.7	5.80	5.7
Nongoods producing .....	92.47	61.6	92.47	64.3	56.50	55.1
Transportation, communications, and public utilities .....	11.00	7.3	11.00	7.7	9.94	9.7
Trade .....	38.71	25.8	38.71	26.9	28.43	27.7
Wholesale .....	11.20	7.5	11.20	7.8	9.66	9.4
Retail .....	27.51	18.3	27.51	19.1	18.77	18.3
Finance, insurance, and real estate .....	11.11	7.4	11.11	7.7	2.17	2.1
Services .....	28.30	18.9	28.30	19.7	15.96	15.6
Government enterprises .....	3.35	2.2	3.35	2.3	0.00	0.0

<sup>1</sup>Not available.

productivity rose 5.5 percent as output increased 13.5 percent and hours rose 7.6 percent. Hourly compensation rose

slowly and unit labor costs declined. Unit nonlabor costs also decreased, but unit profits rose sharply during the second quarter. The 98.5-percent annual rate of growth in unit profits resulted from a 125.2-percent increase in profits coupled with the gain in output. Profits—which are a residual—tend to be very volatile. However, even after allowing for the steep growth in the first half of 1983, unit profits were only 14 percent higher than in 1977. Unit nonlabor costs (the balance of unit nonlabor payments) increased 64 percent, and unit labor costs increased 53 percent over the same period.<sup>2</sup>

The resurgence of profits brought the index of profit per unit of output to 114.1 in the second quarter, the highest level achieved by this index, which covers the 1958 and forward period. The previous peak level (108.6) was attained during the third quarter of 1981. □

—FOOTNOTES—

<sup>1</sup> Percent change was calculated using compound rate formula.

<sup>2</sup> To put these items in perspective, output in nonfinancial corporations during the second quarter of 1983 was nearly \$1,890 billion (annual rate); compensation outlays accounted for \$1,255 billion, profits were almost \$165 billion, and nonlabor costs, \$470 billion. Gross domestic product was \$3,073 billion during the second quarter.