

Strong post-recession gain in productivity contributes to slow growth in labor costs

Hourly compensation growth was modest, with the advance in output per hour in line with other postwar recoveries; spanning 2 years, the productivity rise was the longest sustained increase since 1971–73

LAWRENCE J. FULCO

How do changes in productivity and costs during the current economic recovery compare with earlier ones? Does the six-quarter recovery reflect a resurgence of the higher pre-1973 trend in the growth of output per hour?

Although postwar recessions have differed in length and severity, movements of productivity and cost measures follow a common pattern. Generally, employers tend to delay trimming payrolls in the face of uncertain or slack demand in order to postpone the costs associated with layoffs until the nature of weak demand becomes apparent. The resulting delayed cutback in hours contributes to the initial drop in productivity. If a contraction persists, average weekly hours are initially reduced. Eventually, employment cuts also occur, and productivity may actually increase if the belated declines in hours outstrip the fall in output.

At the trough of the business cycle, capacity utilization is low, with plant and equipment operating below optimum or design rates because of weak demand for output. Inefficient plants and equipment may be idled completely as demand may be met using only the newest, most efficient facilities. Workers who have been retained may also perform deferred maintenance or other duties previously handled by laid-off coworkers. However, these "hoarded" employees may be those with the greatest seniority, experience, and

training specific to the firm's needs, making them the most costly to replace.¹

When demand begins to revive, output can often be boosted without causing commensurate increases in the payroll. Firms respond by using some idle plants and equipment and by redirecting existing labor to production-related tasks. This results in the rapid productivity gains which have characterized the immediate posttrough period of each postwar recovery. The "productivity dividend" continues as long as output gains exceed additions to paid hours.

Employers tend to accommodate growing demand by initially lengthening the workweek. But as the uptrend continues, furloughed workers return and hiring may begin. The pace of productivity growth slackens as hours increase, and when new workers are hired, trained, and assimilated. The least efficient plants are reopened last.

Periods of recovery

During the six quarters since November 1982 (the trough of the last recession), output per hour in the nonfarm and manufacturing sectors grew more than the postwar average trend. A period of faster-than-trend productivity growth also occurred after each of the seven previous postwar recession troughs.² Nonfarm productivity growth averaged 2.5 percent per year between 1947 and 1973. In the six quarters following the trough of the five recessions, growth was nearly half again as fast (at an annual rate). The following

Lawrence J. Fulco is a supervisory economist in the Office of Productivity and Technology, Bureau of Labor Statistics.

tabulation compares the productivity trend with recovery growth rates before and after 1973:

Period	Nonfarm sector		Manufacturing sector	
	Trend	Recovery	Trend	Recovery
1948-73	2.5	3.6	2.9	4.8
1973-83	0.8	3.4	1.8	5.7

After 1973, the long-term trend in productivity growth slowed in the nonfarm sector. During 1973-83, the average annual growth rate fell to 0.8 percent from 2.5 percent in 1948-73.³ However, productivity advances during the six posttrough quarters slowed much less than the overall trend. As indicated, during the first five recoveries, productivity grew at a 3.6-percent annual rate during the first six quarters after the trough. Since 1973, we have experienced three additional recoveries, during which productivity advances averaged 3.4 percent per year. The reduction in the pace of productivity growth during recoveries after 1973 was smaller than the slowdown of the long-term trend. Thus, productivity increased during the pre-1973 recoveries at 1.4 times the long-term rate; after 1973, the recoveries averaged four times the slower trend which characterized the last decade.

The manufacturing sector—which is much smaller than the nonfarm business sector—tends to be more volatile. As in the nonfarm business sector, the trend also slowed; between 1948-73 and 1973-83 the average annual rate of productivity growth declined from 2.9 to 1.8 percent. But in contrast to the more comprehensive nonfarm business sector, the gains in the recovery period have been larger since 1973. In the first five recoveries, productivity advances averaged 4.8 percent annually; in the three most recent

rebounds they averaged 5.7 percent and the most recent recovery showed gains at a 4.5-percent annual rate.

The highest nonfarm productivity growth occurred after the three troughs when output per hour advanced at a 4.1-percent annual rate. The smallest posttrough gain occurred following the 1980 trough. (See table 1.)

From the standpoint of productivity advance, the current recovery is somewhat stronger than the average of similar stages of recovery in the nonfarm sector and weaker than average in manufacturing. Chart 1 compares movements in productivity and related measures in this recovery with the average of the previous seven recovery periods in the nonfarm and manufacturing sectors.

In the six posttrough quarters, nonfarm output has increased at an average annual rate of 7.0 percent in the previous cycles, but the advance after the most recent trough has been faster—9.8 percent. Hours have also rebounded from the trough level more rapidly than during past recoveries.

Table 1 shows the annual rates of change in output, hours, and related measures. Manufacturing output and hours also advanced more rapidly in this recovery, although the rate of productivity gain is smaller than average.

Hourly compensation increases during the present recovery have been smaller than during earlier upturns. This measure, which includes wages and salaries, supplements, and employer payments to all employee benefit plans, represents the largest cost to most producers. In the seven previous recoveries, hourly compensation increased at a 6.4-percent annual rate in the nonfarm business sector, while in the present recovery, the increase was 4.2 percent over the six quarters. Moreover, in recent recovery periods, hourly

Table 1. Changes in productivity and related measures six quarters after the trough of postwar recessions

[Percent change at compound annual rate]

Trough quarter	Productivity	Hourly compensation	Unit labor costs	Output	Hours	Employment
Nonfarm business						
1949 IV	4.1	9.1	4.7	11.1	6.8	5.8
1954 II	3.2	3.8	0.5	7.7	4.3	3.4
1958 II	2.5	3.9	1.4	6.8	4.2	3.6
1961 I	4.1	3.7	0.0	6.3	2.1	1.8
1970 IV	4.0	6.6	2.5	6.5	2.4	2.3
1975 I	4.1	7.9	3.7	6.7	2.5	2.5
1980 III ¹	2.0	9.5	7.4	3.8	1.8	2.0
Average, 7 cycles	3.4	6.4	2.9	7.0	3.4	3.1
1982 IV	4.0	4.2	0.2	9.8	5.6	4.3
Manufacturing						
1949 IV	6.1	9.8	3.5	20.3	13.4	10.8
1954 II	3.6	4.2	0.5	9.3	5.5	3.5
1958 II	3.6	3.8	0.2	9.5	5.7	4.1
1961 I	5.3	3.4	-1.9	10.1	4.6	3.2
1970 IV	5.3	5.7	0.4	8.4	3.0	1.4
1975 I	7.1	7.9	0.8	10.7	3.4	2.1
1980 III ¹	5.5	8.4	2.8	7.9	2.3	2.0
Average, 7 cycles	5.2	6.2	0.9	10.9	5.4	3.9
1982 IV	4.5	3.0	-1.5	12.5	7.6	5.4

¹Percent change over four posttrough quarters.

Chart 1. Productivity and related measures in the first six quarters after cyclical trough

(Index, trough quarter = 100)

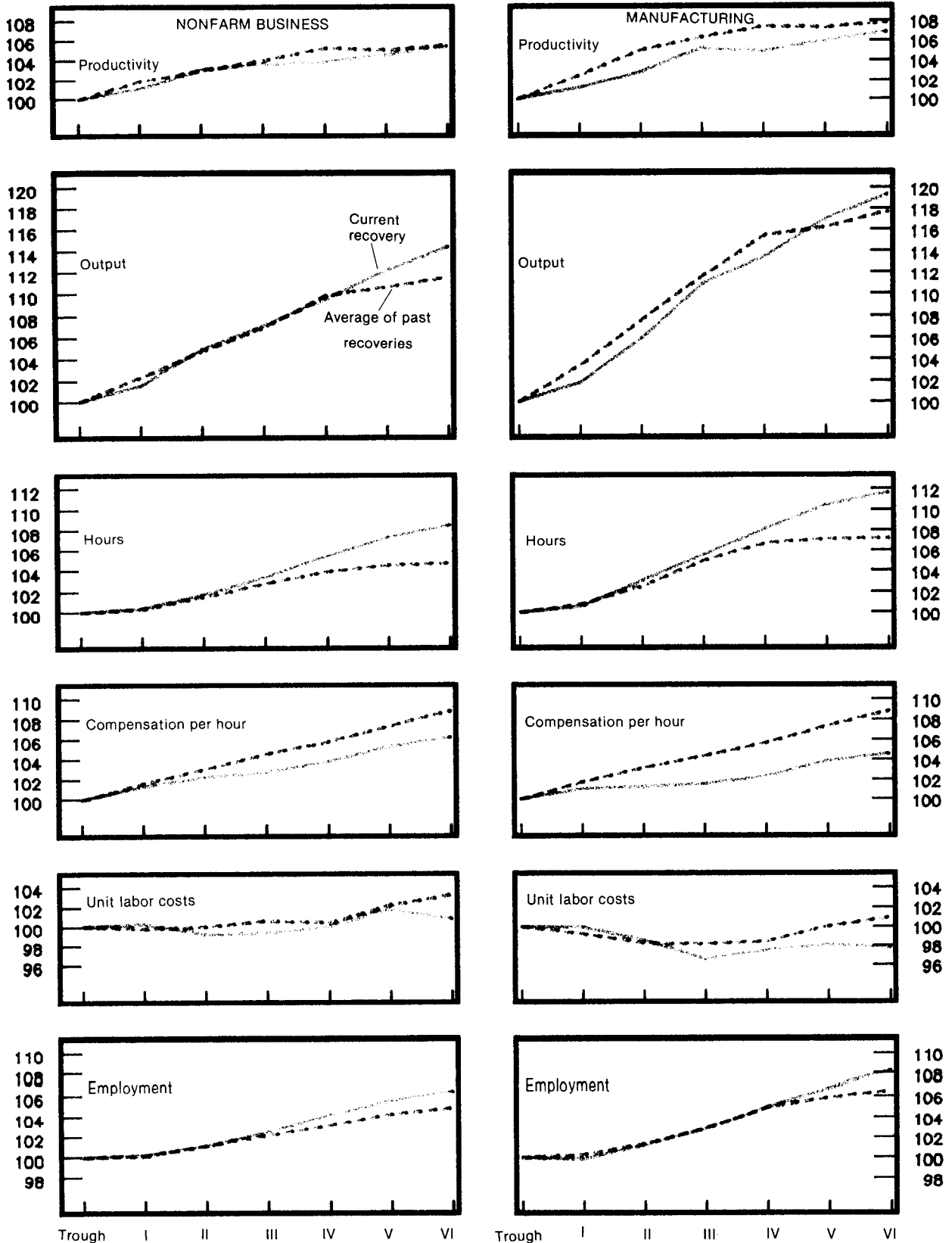


Table 2. Nonfarm business productivity and related measures following the trough of the business cycle

[Index, trough quarter = 100]

Quarter after trough	Cycle trough								
	1949 IV	1954 II	1958 II	1961 I	1970 IV	1975 I	1980 III	Average, 7 cycles	1982 IV
	Productivity								
I.....	103.8	101.6	101.1	102.0	102.0	102.5	100.3	101.9	101.1
II.....	105.7	102.3	103.0	102.9	102.4	104.2	101.5	103.1	103.1
III.....	106.9	104.0	103.8	104.5	103.8	103.7	101.4	104.0	103.6
IV.....	107.5	105.0	105.0	105.4	103.8	105.1	102.0	104.8	103.9
V.....	106.4	105.5	103.3	104.8	104.9	106.0	(¹)	105.2	104.6
VI.....	106.2	104.9	103.8	106.2	106.1	106.2	(¹)	105.6	106.0
	Hourly compensation								
I.....	102.6	100.8	101.1	101.1	101.8	101.8	102.4	101.7	101.4
II.....	104.2	101.4	102.1	101.8	103.6	103.5	105.1	103.1	102.3
III.....	106.1	102.4	103.2	102.7	105.3	105.4	107.0	104.6	102.8
IV.....	108.9	103.4	104.2	104.3	105.9	107.6	109.5	106.3	103.9
V.....	111.6	104.8	105.0	104.9	108.6	109.9	(¹)	107.5	105.4
VI.....	113.9	105.8	105.9	105.6	110.1	112.1	(¹)	108.9	106.4
	Unit labor costs								
I.....	98.8	99.2	100.0	99.1	99.8	99.3	102.1	99.8	100.3
II.....	98.6	99.2	99.1	98.9	101.2	99.3	103.5	100.0	99.2
III.....	99.3	98.4	99.4	98.2	101.5	101.6	105.6	100.6	99.3
IV.....	101.3	98.5	99.3	98.9	102.0	102.4	107.4	101.4	100.0
V.....	104.9	99.3	101.6	100.1	103.5	103.6	(¹)	102.2	100.8
VI.....	107.2	100.8	102.1	99.4	103.8	105.6	(¹)	103.2	100.3
	Output								
I.....	104.5	101.2	102.5	102.1	102.5	101.5	101.6	102.3	101.5
II.....	109.2	103.4	106.1	103.6	103.1	104.2	103.4	104.7	104.9
III.....	113.9	106.7	108.7	106.4	104.2	105.4	103.3	106.9	107.1
IV.....	115.7	109.1	111.9	107.7	105.5	108.6	103.8	108.9	109.5
V.....	116.4	110.7	110.0	108.5	107.9	109.5	(¹)	110.5	112.2
VI.....	117.1	111.7	110.4	109.6	109.9	110.2	(¹)	111.5	115.1
	Hours								
I.....	100.6	99.6	101.4	100.1	100.4	99.0	101.2	100.3	100.4
II.....	103.3	101.1	103.0	100.7	100.7	100.1	101.9	101.5	101.8
III.....	106.6	102.6	104.8	101.7	100.4	101.7	101.9	102.8	103.4
IV.....	107.6	103.9	106.6	102.2	101.6	103.3	101.8	103.9	105.4
V.....	109.4	104.9	106.5	103.5	102.8	103.3	(¹)	105.1	107.3
VI.....	110.3	106.5	106.4	103.2	103.6	103.7	(¹)	105.6	108.5
	Employment								
I.....	100.2	99.7	100.9	100.0	100.4	99.2	100.8	100.1	100.2
II.....	102.4	100.7	102.0	100.5	100.7	100.0	101.3	101.1	101.1
III.....	105.3	101.8	103.5	101.3	100.8	101.1	101.6	102.2	102.5
IV.....	106.2	103.0	105.1	101.9	101.5	102.3	102.0	103.1	104.2
V.....	107.9	103.9	105.1	102.7	102.7	103.1	(¹)	104.2	105.5
VI.....	108.8	105.2	105.4	102.7	103.5	103.8	(¹)	104.9	106.5

¹Excluded; past cyclical peak.

compensation advances have approached 10 percent in the six quarters following the trough. (See tables 2 and 3.) Thus, the slower gain in hourly compensation, coupled with the productivity increase, resulted in a small rise in unit labor costs (compensation per unit of output) for the nonfarm sector. Nonfarm unit labor costs rose at a 0.2-percent annual rate in the six quarters after the trough; in the preceding recovery (after the 1980 trough) these costs rose 7.4 percent in just four quarters.

In manufacturing, hourly compensation increased at a 3.0-percent rate over the six quarters of the recovery, compared with an average rate of gain of 6.2 percent during previous recoveries. This slower increase, combined with the advances in labor productivity, resulted in a 1.5-percent

rate of decline in unit labor costs. In past recoveries, these costs rose somewhat over the like period.

Because labor compensation is such an important part of total costs, the more favorable performance of unit labor costs during the current recovery means less upward pressure on prices. This also allows for noninflationary growth of profits and nonlabor cost items, which can be a source of business saving and investment.⁴

Quarterly measures of profits and profits per unit of output are only available since 1958 and only for the nonfinancial corporate sector.⁵ The following tabulation shows the average annual rate of change (in percent) in profits in the six posttrough quarters for the sector. (Third-quarter 1980 shows the change in just four posttrough quarters.)

<i>Trough quarter</i>	<i>Unit labor costs</i>	<i>Profits</i>	<i>Profits per unit of output</i>
1958 II	-0.1	25.8	14.5
1961 I	-1.4	23.9	13.9
1970 IV	1.8	26.3	16.4
1975 I	3.3	41.8	31.0
1980 III	7.0	33.0	27.5
1982 IV	-0.2	74.9	58.7

The very large increase in total corporate profits and in profits per unit of output partly reflects the downturn in unit labor costs during the current recovery. Unit labor costs declined 0.2 percent in the six quarters after the 1982 trough, compared with an increase of 7.0 percent in just four quar-

ters after the July 1980 trough. This contributed to the very different performance of profits in these two cycles.

Periods of contraction

In response to major cyclical contractions in the demand for goods and services, output, employment, productivity, and prices all diverge from long-term trends. Little can be inferred about the divergence in productivity from the length of the recession alone. Two of the earlier contractions (1948-49 and 1969-70) lasted 11 months; in one case, productivity growth slowed to 0.6 percent in the nonfarm sector, and in the other it grew 1.1 percent. (See table 4.) Two contractions (1952-53 and 1960-61) lasted 10 months; in the former, productivity was unchanged, while in the latter it rose 0.7

Table 3. Manufacturing productivity and related measures following the trough of the business cycle
[Index, trough quarter = 100]

Quarter after trough	Cycle trough								
	1949 IV	1954 II	1958 II	1961 I	1970 IV	1975 I	1980 III	Average, 7 cycles	1982 IV
	Productivity								
I.....	101.4	101.4	102.7	102.7	102.2	104.1	103.1	102.5	101.2
II.....	105.1	102.5	105.2	105.0	103.7	109.2	104.2	105.0	102.8
III.....	108.0	104.7	106.6	106.6	104.9	109.0	104.6	106.3	105.2
IV.....	107.4	106.0	108.6	107.2	106.0	109.0	105.5	107.1	104.9
V.....	108.9	105.9	105.1	106.7	106.9	110.2	(¹)	107.3	105.9
VI.....	109.3	105.5	105.4	108.1	108.0	110.8	(¹)	107.9	106.9
	Hourly compensation								
I.....	102.1	100.6	101.6	100.6	102.1	102.2	102.4	101.7	101.0
II.....	104.0	102.2	102.8	101.2	103.3	104.0	104.4	103.1	101.2
III.....	105.4	102.7	103.3	102.1	104.5	105.6	106.3	104.3	101.5
IV.....	109.4	103.2	104.3	103.7	105.3	107.7	108.4	106.0	102.2
V.....	111.9	104.9	104.9	104.4	107.4	110.2	(¹)	107.3	103.8
VI.....	115.1	106.3	105.7	105.1	108.6	112.1	(¹)	108.8	104.5
	Unit labor costs								
I.....	100.7	99.3	98.9	97.9	99.9	98.2	99.3	99.2	99.9
II.....	98.9	99.7	97.7	96.4	99.6	95.2	100.2	98.2	98.5
III.....	97.6	98.1	96.8	95.8	99.6	96.9	101.7	98.1	96.5
IV.....	101.9	97.4	96.0	96.8	99.4	98.9	102.8	99.0	97.4
V.....	102.7	99.0	99.8	97.8	100.5	100.0	(¹)	100.0	98.0
VI.....	105.3	100.8	100.3	97.2	100.6	101.2	(¹)	100.9	97.7
	Output								
I.....	104.5	100.0	104.6	104.4	102.9	102.2	105.0	103.4	101.8
II.....	113.4	102.7	109.3	107.9	104.3	108.9	106.5	107.6	105.9
III.....	123.3	107.8	114.8	111.7	104.8	111.1	107.4	111.6	110.9
IV.....	126.0	112.1	120.3	113.1	106.9	113.8	107.9	114.3	113.4
V.....	130.6	112.5	114.7	114.3	109.8	115.2	(¹)	116.2	116.9
VI.....	131.9	114.2	114.6	115.6	112.8	116.4	(¹)	117.6	119.4
	Hours								
I.....	103.1	98.6	101.8	101.6	100.8	98.2	101.8	100.8	100.6
II.....	107.8	100.2	103.9	102.8	100.7	99.7	102.2	102.5	103.0
III.....	114.1	102.9	107.7	104.7	99.9	101.9	102.7	104.9	105.5
IV.....	117.3	105.8	110.7	105.5	100.9	104.5	102.3	106.7	108.1
V.....	119.9	106.2	109.1	107.1	102.8	104.5	(¹)	108.3	110.4
VI.....	120.7	108.3	108.7	107.0	104.5	105.1	(¹)	109.1	111.6
	Employment								
I.....	102.1	98.4	100.7	100.8	100.1	98.0	101.1	100.2	99.8
II.....	105.7	99.4	102.2	101.7	99.9	98.6	101.4	101.3	101.1
III.....	110.5	100.9	104.8	102.7	99.5	100.1	101.9	102.9	102.8
IV.....	113.5	103.2	107.2	103.7	99.8	101.9	102.0	104.5	104.9
V.....	116.0	103.9	106.3	104.7	100.8	102.8	(¹)	105.8	106.7
VI.....	116.7	105.3	106.2	104.8	102.1	103.2	(¹)	106.4	108.2

¹Excluded; past cyclical peak.

percent. Two contractions (1957–58 and 1980) lasted less than 10 months; in the former, productivity rose 1.7 percent during the downturn, and in the latter, it declined 0.2 percent. There was only one other contraction (1973–75) that lasted as long as the 1981–82 downturn and while in the most recent case productivity declined 0.3 percent, in the earlier instance, it fell 2.6 percent during the 16-month period. Growth of output per hour of all persons in nonfarm business either slowed or ceased in the first five postwar business cycles, but following the peaks in 1973 and 1980, productivity actually declined during the contraction.

As noted, there have been eight business cycle contractions since World War II. The most recent contraction began in July 1981 and ended in November 1982, 16 months later. We have seen that only the 1973–75 contraction lasted as long; on average, the upturn has come 10 months after the peak of the business cycle. Nonfarm business output declined more during 1981–82 than the average of previous contractions, and the cutbacks in hours and employment were also more severe. Hours were reduced in four of the five quarters following the onset of the 1981–82 contraction.

Nonfarm employment had not been cut as sharply since the late 1950's, and manufacturing employment fell a record amount—10.2 percent. This situation may be partly explained by the fact that there was a relatively short interval between this contraction and the previous one—only 12 months—and employers did not maintain employment because demand was falling again. In addition, the period of rapid growth of hourly compensation carried over into the downturn, which made labor “hoarding” increasingly expensive. Both nonfarm hourly compensation and unit labor costs rose almost twice as much during the 1981–82 downturn as during the average contraction. Hourly compensation also advanced rapidly in manufacturing during the contraction.

Unit labor costs (compensation per unit of output) are affected by changes in productivity (output per hour) and compensation per hour. If productivity and hourly compensation change equally, unit labor costs are unaffected. Chart 2 shows the relationship between these series since 1973. Declines in productivity during postwar contractions are thus related to periods of rapid increases in unit labor costs.

Table 4. Changes in selected economic indicators and in productivity and related measures during business cycle contractions from designated peak to trough

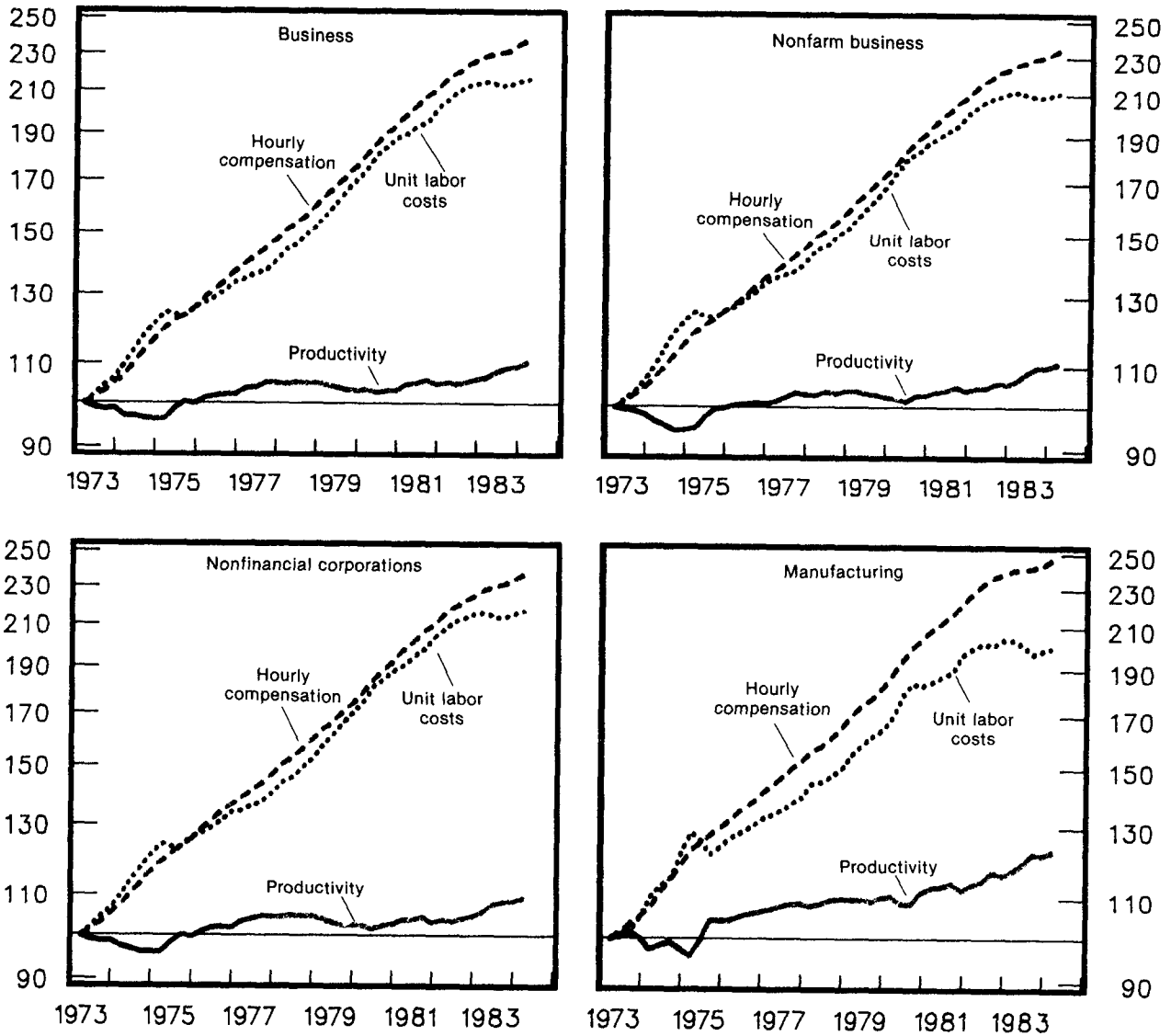
[In percent]

Cyclical peak and trough	Duration (in months)	Change in:			Peak jobless rate	Lowest operating rate ¹
		Gross national product	Industrial production	Consumer Price Index		
Nov. 48—Oct. 49	11	-1.4	-8.5	-2.1	7.9	71.7
July 53—May 54	10	-2.6	-8.9	0.2	5.9	79.8
Aug. 57—Apr. 58	8	-2.7	-12.6	2.4	7.4	71.3
Apr. 60—Feb. 61	10	-0.1	-6.1	0.9	6.9	73.5
Dec. 69—Nov. 70	11	-0.1	-5.8	5.7	5.9	75.9
Nov. 73—Mar. 75	16	-4.9	-15.1	14.5	8.6	69.0
Jan. 80—July 80	6	-2.2	-8.3	5.2	7.8	75.5
Average, 7 cycles	10	-2.0	-9.3	3.8	7.2	73.7
July 81—Nov. 82	16	-3.0	-12.3	6.2	10.7	68.8
	Output per hour	Output	Hours	Employment	Unit labor costs	Compensation per hour
Nonfarm business						
Nov. 48—Oct. 49	0.6	-4.3	-4.9	-4.0	0.3	0.9
July 53—May 54	0.0	-3.6	-3.6	-3.2	2.2	2.1
Aug. 57—Apr. 58	1.7	-4.3	-5.9	-4.8	1.1	2.7
Apr. 60—Feb. 61	0.7	-1.6	-2.3	-1.6	1.4	2.2
Dec. 69—Nov. 70	1.1	-1.7	-2.8	-1.4	5.6	6.8
Nov. 73—Mar. 75	-2.6	-7.4	-4.9	-2.7	16.8	13.7
Jan. 80—July 80	-0.2	-2.5	-2.2	-1.4	5.5	5.2
Average, 7 cycles	0.2	-3.6	-3.8	-2.7	4.7	4.8
July 81—Nov. 82	-0.3	-4.6	-4.3	-3.2	9.5	9.1
Manufacturing						
Nov. 48—Oct. 49	1.6	-8.2	-9.7	-9.1	-0.7	0.9
July 53—May 54	0.3	-8.8	-9.0	-7.6	3.3	3.5
Aug. 57—Apr. 58	-3.0	12.8	-10.2	-8.4	6.2	3.1
Apr. 60—Feb. 61	-0.6	-6.5	-5.9	-4.9	2.5	2.1
Dec. 69—Nov. 70	1.7	-7.6	-9.1	-7.3	4.7	6.5
Nov. 73—Mar. 75	-4.4	16.1	-12.2	-9.1	22.5	17.1
Jan. 80—July 80	-1.9	-7.4	-5.6	-4.6	8.7	6.6
Average, 7 cycles	-0.9	-9.6	-8.8	-7.3	6.7	5.7
July 81—Nov. 82	1.6	-10.2	-11.7	-10.2	7.9	9.7

¹Index of capacity utilization, Board of Governors of the Federal Reserve.

Chart 2. Productivity and related measures in four major sectors of the economy, 1st-quarter 1973-1st-quarter 1984

Ratio scale (1st quarter 1973=100)



Recent data

In the second quarter of 1984, productivity advanced in all of the major sectors for which the Bureau of Labor Statistics prepares quarterly measures. Growth in output and hours remained strong while increases in hourly compensation were moderate. The second-quarter compensation outlays partly reflect changes in employer contributions to social security, which were effective January 1. These mandated increases accounted for about 30 percent of the first-quarter rise in hourly compensation.

In the nonfarm business sector, productivity advanced 5.5 percent; gains in output and hours were strong in the second quarter, although not as large as during the first quarter. Productivity has advanced for the last eight quarters, the longest period of such uninterrupted gains since 1971-73. Hourly compensation growth was very modest and, combined with the increase in productivity, resulted in a decline in unit labor costs. Movements in the business sector were much the same as in nonfarm business in the second quarter.

Contrasting trends were evident in manufacturing. While productivity grew modestly in durables as large increases occurred in both output and hours, a more rapid productivity gain was experienced in nondurable goods manufacturing, where increases in output and hours were not as robust. As a result, unit labor costs declined more in nondurables. There is also a significant difference between the second-quarter productivity advance in nonfarm business (5.5 percent) and that for nonfinancial corporations (2.8 percent), which account for more than 75 percent of nonfarm business output. Most of this difference can be explained by the larger rate of increase of hours in the nonfinancial corporate sector than in nonfarm business, which includes the self-employed and financial activities.

The following tabulation shows the percent changes at annual rates in productivity, output, and hours for the second quarter of 1984:⁶

Sector	Productivity	Output	Hours
Business	4.9	11.2	6.0
Nonfarm business	5.5	10.6	4.8
Manufacturing	4.0	8.9	4.6
Durables	3.1	9.5	6.2
Nondurables	5.5	8.0	2.4
Nonfinancial corporations	2.8	9.8	6.8

Compensation and labor costs. Compensation per hour of all persons engaged in the nonfarm business sector rose at a 3.7-percent annual rate in second-quarter 1984, but remained unchanged after allowing for the increase in the Consumer Price Index for All Urban Consumers (CPI-U). Unit labor costs declined 1.7 percent in the second quarter, compared with a 3.1-percent annual rate of increase in the first quarter.

In manufacturing, hourly compensation increased at a 2.9-percent annual rate in the second quarter (or fell 0.8 percent after allowing for the increase in the CPI-U), and unit labor costs declined 1.1 percent.

Employment and hours. Labor input used in BLS productivity measures is hours of paid labor time. Adjustments to labor input in response to changes in demand can be accomplished through changes in the workweek as well as changes in employment. In the nonfarm business sector, employment maintained the high growth rate of the first quarter, while average weekly hours decelerated in the second quarter. This marked the sixth consecutive quarter of increasing average weekly hours, the longest period of such growth in the series. Employment growth slowed, and the workweek was shortened somewhat in manufacturing in the second quarter. □

—FOOTNOTES—

ACKNOWLEDGMENT: John Glaser, an economist in the Office of Productivity and Technology, Bureau of Labor Statistics, provided statistical assistance.

¹A recent attempt to directly measure labor hoarding indicates that as much as 8 percent of manufacturing blue-collar payrolls during trough quarters may be hoarded labor, that is, labor paid for but not required for current output levels. See James L. Medoff and Jon A. Fay, "Labor and Output Over the Business Cycle: Some Direct Evidence" (National Bureau of Economic Research, 1983).

²These are the troughs identified by the National Bureau of Economic Research.

³There was a slowdown in the rate of growth of capital per hour (capital intensity) in nonfarm business that accounted for about one-fifth of the

slowdown of labor productivity in that sector, but not in manufacturing. Other possible reasons for the slowdown have been studied; however, no consensus has emerged on the specific role of these other factors. See Jerome A. Mark and William H. Waldorf, "Multifactor productivity: A new BLS measure," *Monthly Labor Review*, December 1983.

⁴See John F. Early and others, "Inflation and the business cycle during the postwar period," *Monthly Labor Review*, November 1984, pp. 3-7.

⁵The nonfinancial corporate sector includes all corporations doing business in the United States with the exception of banks, financial institutions, stock and commodity brokers, and insurance agents. This sector accounts for about 75 percent of nonfarm business output, and about 60 percent of the gross national product.

⁶Data for additional measures and for previous quarters appear in tables 29-32 of the Current Labor Statistics section of the *Monthly Labor Review*.