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In this issue:
A new measure of productivity, and a
special section on the family

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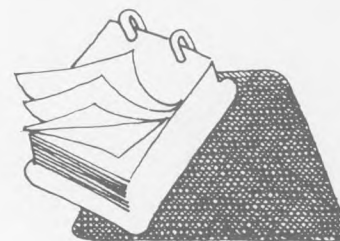
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Labor Month In Review



OLDER WORKERS. The National Commission for Employment Policy, an independent agency established under the Job Training Partnership Act, published a series of studies exploring the employment problems of older workers. One of the studies notes that older workers are unemployed longer than other workers; for example, in October 1982, men age 45 and over were, on average, unemployed for 15 weeks, compared with 10 weeks for all men age 16 and over.

This study, devoted specifically to displaced older male workers, focuses on the relationship between age and the wage loss associated with displacement and reemployment. The study, which used the National Longitudinal Survey of Mature Men (aged 45-59 when first interviewed in 1966), examines the age/wage relationship among male workers 45 years and older who were displaced and subsequently found new jobs between 1966 and 1978.

Findings. The findings of the study were:

- For workers under the age of 65, the age/wage pattern of displaced older male workers on their post-displacement job is similar to the age/wage pattern on previous jobs. But workers over age 65 suffer wage penalties, compared to the pre-displacement earnings pattern of displaced men.
- Some of the age-related loss in earnings can be attributed to changes in the occupations of displaced men. Among those who return to work, older workers are more likely to change occupations than younger workers.
- The loss of firm-specific human capital (i.e., skills and knowledge particularly useful at a specific firm) associated with seniority on the pre-displacement job accounts for a 3.5-percent drop in the average hourly earnings of men in constant dollars, representing nearly 90 per-

cent of the average wage loss for the sample.

- Those workers who lost their jobs between 1966 and 1969 when the national unemployment rate was relatively low did not, on average, experience a wage loss, while those who were displaced during a period of higher unemployment experienced an average loss of 6 percent of their pre-displacement average hourly earnings.

The sample. Comparing the sample of displaced men with the full survey group provides an indication of the characteristics of men who are more likely to experience involuntary displacement. Seventy percent of the survey group in 1966 were white, 28 percent were black, and the remainder were of other races. But whites account for 68.5-percent of the sample of job losers and blacks, 31 percent, reflecting the slightly greater likelihood that blacks would suffer involuntary displacement. Older workers in the original group were somewhat less likely than their younger counterparts to lose jobs involuntarily.

The displaced workers have somewhat lower levels of schooling, on average, relative to the full sample. Although college graduates are particularly under-represented (at least among whites), job-losers can be found in every educational attainment group.

Craftworkers make up more than a third of the displaced workers, and they, along with laborers (farm and nonfarm), are the occupational groups that are particularly prone to displacement. While half of the *full* sample is composed of craftworkers, operatives, and laborers, these blue-collar workers account for more than 70 percent of the sample of displaced workers. Involuntary displacement is especially common among construction workers. Sixty-five percent of the displaced men were in construction or manufacturing, although job-losers can be found in every industry.

Job tenure appears to be significantly related to the likelihood of displace-

ment: proportionately nearly twice as many displaced workers compared to the full survey sample had tenure of 5 years or less, and among job-losers a quarter of whites and a third of blacks were displaced from jobs that they had held for less than 1 year. This suggests that there may well be a substantial number of older workers for whom job loss is a recurring phenomenon, such that they keep moving from one short-term job to another. At the same time, however, job displacement is by no means confined to workers with limited service with their employers: nearly a third of the displaced workers lost jobs that they had held for more than 10 years.

Finding the same job. Craftworkers are most likely to remain in their occupation group following loss of a job. Salesworkers also exhibit relatively high occupational stability. Clerical workers, service workers, and managers are the *least* occupationally stable following job displacement.

Construction workers, while most likely to experience job displacement, are also most prone to find subsequent employment in the same industry from which they were displaced. While the distribution by industry of post-displacement jobs is rather similar to the distribution of pre-displacement jobs (with net movement out of manufacturing and transportation/utilities and into services and public administration), there is substantial mobility of individuals across industries. Thirty-eight percent of the displaced workers were subsequently employed in different industries.

Copies of the report, *Age Discrimination and Labor Market Problems of Displaced Older Male Workers*, by David Shapiro and Steven H. Randall, and of the other reports on older workers are available in limited numbers from the National Commission for Employment Policy, 1522 K Street, N.W., Washington, D.C. □

Multifactor productivity: a new BLS measure

New annual indexes for private business show that advances in the output per unit of labor and capital input account for most of the growth of output per hour of all persons during 1948–81

JEROME A. MARK AND WILLIAM H. WALDORF

The Bureau of Labor Statistics now publishes three measures of productivity: (1) the familiar index of labor productivity, which relates output to hours of all persons involved in the production process; (2) a new index of capital productivity, which relates output to capital inputs; and (3) a new index of multifactor productivity, which relates output to inputs of labor and capital.

The new annual measures help explain that, between 1948 and 1981, when private business sector output grew by 3.4 percent annually, the growth was due about equally to increases in labor and capital inputs (such as hours of all persons and plant and equipment) and to more productive use of these resources, as measured by multifactor productivity.

This article reports on the development of the multifactor and capital productivity measures and shows how the new measures can be used to analyze the long-term trend and the post-1973 productivity slowdown.

Three objectives

Unlike the familiar BLS productivity measures for the business sector, the new ones for private business exclude government enterprises. (See exhibit 1.) Each of the productivity measures has its own purposes; the multifactor productivity series has at least three. First, it is an important indicator of progress in the U.S. economy because it shows the rise in private business output obtained from a fixed

quantity of resource inputs. For example, as a result of the growth in multifactor productivity, the private business sector produced 65 percent more output from a fixed amount of resource inputs in 1981 than it did in 1948,¹ the initial year of the new series.

Among a host of factors contributing to the rise in multifactor productivity were changes in technology and in the skill composition of the work force, changes in resource utilization resulting from shifts in aggregate demand, differences in effort per worker, changes in energy costs, economies of scale, and research and development expenditures.

A second, and closely related, purpose of the multifactor productivity measure is to help explain the long-term growth—and post-1973 slowdown—in output per hour of all persons (labor productivity). In effect, changes in output per hour are divided into changes in the contribution of capital services per hour (capital intensity) and changes in multifactor productivity. For example, between 1948 and 1981, output per hour of all persons in the private business sector grew at an average annual rate of 2.5 percent; the rise in capital services per hour accounted for roughly 40 percent of this growth and the gain in multifactor productivity, for the remaining 60 percent. The rate of growth of capital services per hour decelerated after 1973, helping to slow the growth rate of output per hour, but most of the sluggish advance resulted from a falloff in the growth rate of multifactor productivity.

A third purpose of the multifactor productivity measure is to help analyze cost and price movements. The Bureau regularly publishes annual and quarterly measures showing

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Exhibit 1. Productivity measures for major sectors of the economy

Measure	Inputs	Frequency	Period
Output per hour of all persons			
Business ¹	Labor	Quarterly	1947 to present
Nonfarm business	Labor	Quarterly	1947 to present
Nonfinancial corporations	Labor	Quarterly	1947 to present
Manufacturing	Labor	Quarterly	1947 to present
Durable	Labor	Quarterly	1947 to present
Nondurable	Labor	Quarterly	1947 to present
Output per unit of capital			
Private business	Capital ²	Annually	1948 to present
Private nonfarm business	Capital ²	Annually	1948 to present
Manufacturing	Capital ²	Annually	1948 to present
Multifactor productivity			
Private business	Labor and capital	Annually	1948 to present
Private nonfarm business	Labor and capital	Annually	1948 to present
Manufacturing	Labor and capital	Annually	1948 to present

¹Includes government enterprises.

²In constant dollars (1972).

NOTE: In 1981, business accounted for 78 percent of the gross national product in 1972 dollars; nonfarm business, 75 percent; nonfinancial corporations, 59 percent; manufacturing, 24 percent; durable goods, 14 percent, and nondurable goods, 10 percent. Private business accounted for 76 percent of the gross national product; private nonfarm business, 74 percent; and manufacturing, 24 percent.

the relationship between unit labor cost, hourly compensation, and output per hour. Unit labor cost is directly related to hourly compensation but inversely related to output per hour. Hence, increases in labor productivity help to offset rises in hourly compensation, dampening increases in unit labor cost.

There is a more comprehensive but also simple relationship between prices and multifactor productivity: The changes in the price of net output (that is, the sector's implicit price deflator) are directly related to changes in both hourly compensation and the price of capital services, but inversely related to changes in multifactor productivity.² Thus, increases in multifactor productivity help to offset rises in input prices so that increases in output prices are moderated.

As noted, the multifactor productivity index measures changes in output per combined units of labor and capital inputs. To construct this index, the Bureau resolved several major measurement issues.³ These involved (1) determining the appropriate output measure, (2) establishing the maximum coverage that could be meaningfully obtained, (3) developing the appropriate capital input measure, (4) developing the appropriate labor input measure, and (5) aggregating the capital and labor inputs into a composite input measure. The formal model underlying the multifactor productivity measure is shown in the appendix.

Output measure

In general, the analysis uses a net output measure which is the value of final goods and services produced, adjusted for price change, less the value of purchased materials and services, also adjusted for price change. The output measure includes capital depreciation, as in the more familiar BLS output-per-hour indexes; it is consistent with the gross national product (GNP) concept. Is it appropriate to include capital depreciation in the output measure? Some private

researchers developing multifactor productivity measures have, like the Bureau, done so, while others have not.

In deriving the multifactor productivity measures, the Bureau included capital depreciation in output, in part, for consistency with existing measures, but, more importantly, in order to have the productivity measures consistent within a framework for examining changes in prices, costs, and productivity, all of which include depreciation.

Extent of coverage

The coverage was based on two considerations: First, whether the output data available (in this case from the national income and product accounts) are measured by inputs; and, second, whether there are labor and capital input measures that correspond to the available output measures.

In some sectors of the national accounts, because of the unavailability of suitable alternatives, output is measured essentially by labor compensation, which is extrapolated by changes in employment. Because this method implies no change in productivity, such output measures are not useful for productivity measurement and were excluded from the BLS measures. The method is used primarily for the general government, households, and nonprofit institutions components of the national accounts.

For other sectors—such as rest-of-world and owner-occupied housing—the output data are derived independently of the labor input data, but there are no corresponding labor input measures available. Therefore, these sectors have also been excluded from the Bureau's productivity measures.

Government enterprises were also excluded from the multifactor productivity measures because there are no data available for measuring capital's share of output, and it would be extremely difficult to estimate.

Capital input

The capital input series attempts to measure the flow of services derived from the stock of physical assets. In the measurement of capital input, three major issues had to be addressed: (1) the definition of capital, (2) whether gross or net stock should be used, and (3) how to aggregate the stock measures.

With regard to the first issue, a broad definition including equipment, structures, land, and inventories was used. Equipment and structures were assigned to 47 asset classes to take into account differences among types of capital goods. Financial assets are presently not included.

The question of whether capital should be measured in terms of gross or net stock is a difficult empirical issue. For productivity measurement, the appropriate concept is "productive" capital stock, which represents the stock used to produce the capital services employed in current production. To measure the productive stock, it is necessary, for each type of asset, to take account of possible loss of efficiency of the asset as it ages. That is, assets of different vintages

Table 1. Productivity indexes and related measures, percent change from 1981 to 1982

Measure	Private business ¹	Private nonfarm business ¹	Manufacturing
Productivity:			
Output per hour of all persons	-0.1	-0.1	1.2
Output per unit of capital	-5.1	-5.2	-8.4
Multifactor productivity ²	-1.9	-1.9	-1.3
Output	-2.8	-2.8	-6.9
Inputs:			
Hours of all persons	-2.8	-2.8	-8.0
Capital services	2.4	2.5	1.6
Combined units of labor and capital input ³	-1.0	-1.0	-5.7
Capital services per hour of all persons	5.3	5.4	10.4

¹Excludes government enterprises.

²Output per unit of combined labor and capital input.

³Hours of all persons combined with capital service input index, weighted by labor and capital shares.

have to be aggregated. Some analysts have used measures of the gross stock, in which an asset shows no decline in efficiency until it is discarded. Others have used a net concept which shows the asset's efficiency declining as it ages. Those who have used net capital stock have assumed different age/efficiency patterns. After carefully considering the alternatives, BLS chose a concave form (slower declining efficiency during earlier years) and used available empirical evidence to confirm its shape. In addition, some members of the Bureau's Business Research Advisory Council canvassed companies they represent to confirm the "reasonableness" of using a concave form. We shall discuss the choice of an age/efficiency pattern in more detail later when we report a sensitivity analysis comparing the BLS method of measuring capital stock with methods used by others.

Finally, in combining the various types of capital stock, the weights applied were implicit rental prices of each type of asset. The implicit rental price can also be viewed as a "user cost" of capital. It reflects the implicit rate of return to capital, the rate of depreciation, capital gains, and taxes. Its use as a weight is based on the principle that capital services inputs should be combined with weights that reflect their marginal productivity—and rental price is the appropriate price.⁴ The final capital input measure then is a weighted sum of the percent changes in net capital stocks by asset type. The weights are the averages of the respective rental prices for the current and past year; the measure is a Tornqvist index.

Labor input

The Bureau's measures of output per hour of all persons used in the multifactor productivity indexes are primarily derived from the Current Employment Survey and, in general, refer to hours paid. Although it would be desirable to have a measure based on hours worked, suitable historical data are not now available. We shall discuss changes in the ratio of hours at work to hours paid based on sparse information and recent BLS surveys.

Hours data for the multifactor productivity index, which are aggregated for all persons—namely, production workers, nonproduction workers, self-employed and unpaid family workers—are not differentiated in terms of the composition of the work force (age, sex, education, experience, and so on).

Aggregating capital and labor inputs

Before the overall input and hence multifactor productivity measures could be developed, the labor and capital shares for weighting the factor inputs had to be derived. Data are available for employees' labor compensation and for corporate capital income, but they are not available separately for proprietors' income. Thus, the labor share of proprietors' income had to be estimated.

Various assumptions can be made to do this. For example, production worker earnings can be imputed to the self-employed, but this frequently results in negative nonlabor proprietor income (which is obtained as a residual). Conversely, the rate of return on capital in the corporate sector can be applied to the proprietors' capital, but this frequently implies negative proprietor labor income.

In the Bureau measures, proprietor and unpaid family worker hours were assigned the same average wages received by paid employees, and capital income was measured by assigning noncorporate capital the same rental price as corporate capital. This computed value was compared with reported noncorporate income in the national income accounts, and both the labor and capital income totals were scaled to agree with those levels. With these scaled weights, labor and capital inputs were combined using the Tornqvist index number formula.

Recent developments

In 1982, the most recent year for which data are available, multifactor productivity fell 1.9 percent in the private business sector (table 1). This reflected a 2.8-percent drop in output, the largest annual decline since 1948, coupled with a 1.0-percent decrease in combined labor and capital inputs. There was a 2.4-percent rise in capital services and a 2.8-percent decline in hours, entailing a 5.3-percent increase in the amount of capital per hour.

Output per hour of all persons in the private business sector, the more familiar measure of productivity, declined only 0.1 percent compared with the 1.9-percent decrease in multifactor productivity. This difference was due to the increase in the amount of capital per hour (5.3 percent) which, when multiplied by capital's share of output, indicates that the increased capital per hour offset 1.8 percentage points of the decline in multifactor productivity. Output per unit of capital services (capital productivity) in the private business sector dropped 5.1 percent in 1982. This reflects a reduction in capacity utilization, among other things.

The percent changes in the output, input, and productivity measures in 1982 were virtually the same in private nonfarm

Table 2. Average annual rates of growth in productivity indexes and related measures by major sector, 1948 to 1981¹

[In percent]

Measure	Private business ²			Private nonfarm business ²			Manufacturing		
	1948 to 1981	1948 to 1973	1973 to 1981	1948 to 1981	1948 to 1973	1973 to 1981	1948 to 1981	1948 to 1973	1973 to 1981
Productivity indexes:									
Output per hour of all persons	2.5	3.0	0.8	2.1	2.5	0.6	2.6	2.9	1.6
Output per unit of capital services	-0.1	0.2	-0.9	-0.1	0.2	-1.0	-0.2	0.6	-2.6
Multifactor productivity ³	1.5	2.0	0.2	1.3	1.7	0.1	1.8	2.2	0.6
Output	3.4	3.7	2.3	3.5	3.9	2.2	3.4	4.0	1.3
Inputs:									
Hours of all persons	0.9	0.7	1.4	1.4	1.3	1.6	0.7	1.1	-0.2
Capital services	3.5	3.6	3.2	3.6	3.6	3.3	3.5	3.4	3.6
Combined labor and capital inputs ⁴	1.8	1.7	2.0	2.1	2.1	2.2	1.5	1.8	0.8

¹Average annual rates based on compound rate formula using data in the appendix tables.²Excludes government enterprises.³Output per unit of combined labor and capital input.⁴Hours of all persons combined with capital service inputs index, weighted by labor and capital shares.

business as in the private business sector.

Multifactor productivity in the manufacturing sector decreased 1.3 percent in 1982, somewhat less than in the other two sectors. This reflected sharp decreases in both output (-6.9 percent) and combined inputs of labor and capital (-5.7 percent). Capital services increased only 1.6 percent, the smallest percent rise since 1972, and hours declined 8.0 percent, the largest relative decrease since 1975.

Output per hour actually increased in the manufacturing sector by 1.2 percent in 1982. This was because the increase in capital per hour (10.4 percent), when multiplied by capital's share, resulted in a 2.5-percentage-point offset to the decline in multifactor productivity. Output per unit of capital services fell 8.4 percent in manufacturing in 1982.

Long-term trends

Productivity varies over the business cycle and, in order to measure trends, average annual rates of change are calculated between periods of peak activity in the cycle. The year 1981 is used as the last year in the comparison of long-term trends because it is the most recent peak year of a business cycle as designated by the National Bureau of Economic Research.

Table 2 summarizes average annual rates of change of the new BLS measures for the private business, private nonfarm business, and manufacturing sectors. Between 1948 and 1981, output in the private business sector, which accounted for about three-fourths of gross national product in 1981, grew at an average rate of 3.4 percent per year. Of this increase, 1.8 percentage points resulted from increases in combined labor and capital inputs, and the remaining 1.5 percentage points was due to growth of multifactor productivity.

There was a sharp slowdown in the rate of growth of output between 1948-73 and 1973-81 which coincided with an even greater slackening in multifactor productivity growth. Nearly all of the growth in output after 1973 came from increases in combined labor and capital inputs. This reflected a moderate slowdown in the annual rate of growth of capital inputs and a doubling of the rate of growth of hours of all persons between the two periods.

In private nonfarm business, multifactor productivity hardly grew after 1973; virtually all of the annual rise in output (2.2 percent) came from increases in labor and capital inputs. There was also a moderate slowdown in the annual rate of growth of capital services coupled with only a small rise in inputs of hours of all persons. The much smaller increase, after 1973, in the annual growth rate of hours of all persons in nonfarm business, compared with that for all private business, is due to a large shift of workers from the farm to nonfarm sector during 1948-73.

The picture is essentially the same in manufacturing. Over the three decades, growth in multifactor productivity and combined labor and capital inputs contributed about equally

Table 3. Average annual rates of growth in output per hour of all persons, contribution of capital services per hour, and multifactor productivity, by major sector, 1948 to 1981¹

[In percent]

Measure	1948 to 1981 (1)	1948 to 1973 (2)	1973 to 1981 (3)	Slowdown (4) (Col. 3- Col. 2)
Private business				
Output per hour of all persons	2.5	3.0	0.8	-2.2
Minus: Contribution of capital services per hour ²	1.0	1.0	0.6	-0.4
Equals: Multifactor productivity ³	1.5	2.0	0.2	-1.8
Private nonfarm business				
Output per hour of all persons	2.1	2.5	0.6	-1.9
Minus: Contribution of capital services per hour ²	0.8	0.8	0.5	-0.3
Equals: Multifactor productivity ³	1.3	1.7	0.1	-1.6
Manufacturing				
Output per hour of all persons	2.6	2.9	1.6	-1.3
Minus: Contribution of capital services per hour ²	0.8	0.7	1.0	0.3
Equals: Multifactor productivity ³	1.8	2.2	0.6	-1.6

¹Average annual rates based on compound rate formula using data in the appendix tables.²Change in capital per unit of labor weighted by capital's share of total output.³Output per unit of combined labor and capital input.

to the growth in output. And, a slowdown in the growth rate of output after 1973 was accompanied by a falloff in productivity growth. Manufacturing differed from the other two sectors in that capital services rose at a faster rate after 1973, while hours of all persons showed an absolute decline. This means that all of the growth in hours in the nonfarm business sector after 1973 occurred outside manufacturing and outside farming.

Table 2 also shows average annual rates of growth of the new BLS measures of output per unit of capital services (capital productivity). This series exhibited only a negligible downward trend, between -0.1 and -0.2 percent per year, in each of the three sectors during 1948–81. In effect, there was no saving in capital per unit of output over the three decades.

As shown in chart 1 for the private business sector, the annual movements in output per unit of capital services were largely cyclical.⁵ Output per hour of all persons and multifactor productivity also exhibited cyclical patterns. Although the numbers differ somewhat, the analysis for private nonfarm business and manufacturing is essentially the same.

Table 3 summarizes the relationship between average annual rates of growth of output per hour, capital per hour, and multifactor productivity. In this form, it extends the Bureau's work toward explaining the growth and post-1973 slowdown in labor productivity.

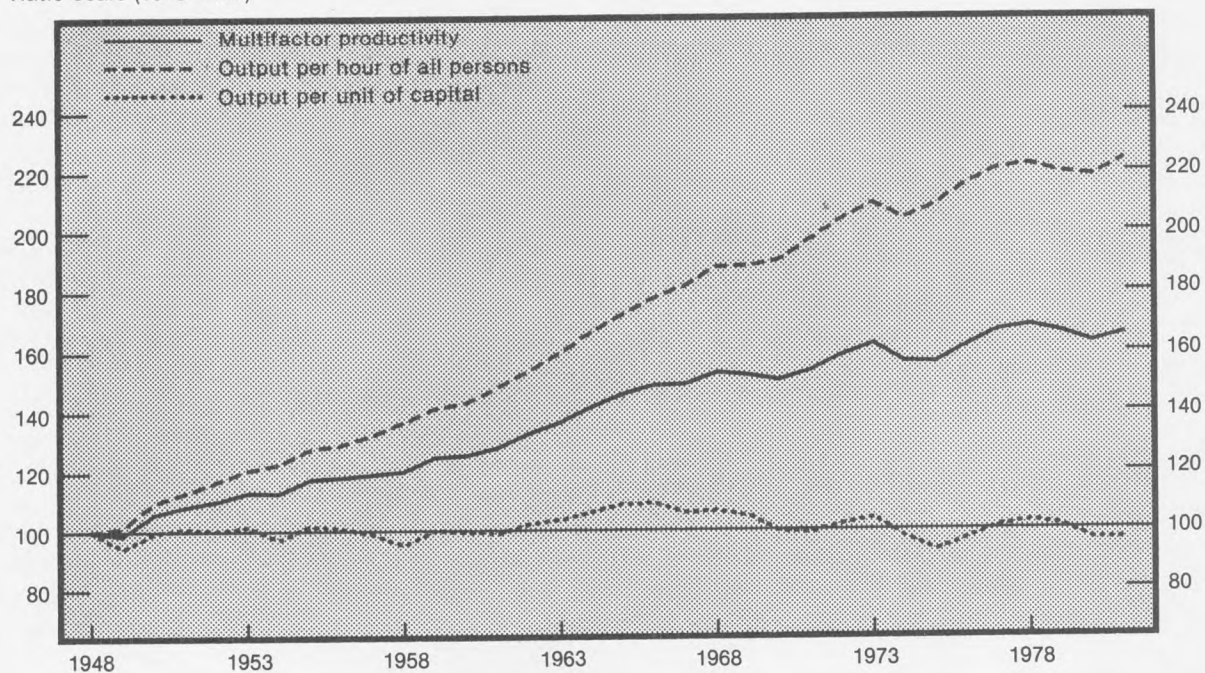
From 1948 to 1981, output per hour of all persons in the private business sector grew at an average annual rate of 2.5 percent. The growth of capital services per hour contributed 1.0 percentage points to the growth in labor productivity, and multifactor productivity accounted for the balance. From 1973, after the trend rate slowed, to 1981, output per hour of all persons grew at an annual rate of 0.8 percent compared with 3.0 percent between 1948 and 1973, a falloff of 2.2 percentage points per year. There was also a slowdown in the annual rate of growth of capital services per hour. However, this contributed only 0.4 percentage point to the deceleration in labor productivity; the falloff in the rate of growth of multifactor productivity—1.8 percentage points—accounted for most of the slowdown.

The picture was essentially the same for private nonfarm business. The major share of the growth of output per hour from 1948 to 1981 was accounted for by growth in multifactor productivity; the opposite occurred after 1973, with growth in the contribution of capital services also slowing.

The experience in manufacturing differed somewhat from that in the other two sectors. In contrast to private business and private nonfarm business, capital services per hour in manufacturing grew at a faster annual rate after 1973 than before and, consequently, the slowdown in the annual rate of growth was somewhat less for output per hour than for multifactor productivity.

Chart 1. Indexes of output per hour of all persons, output per unit of capital, and multifactor productivity in the private business sector, 1948 to 1982

Ratio scale (1948 = 100)



Some sensitivity analyses

Only about 18 percent of the slowdown in the rate of growth of output per hour in the private business sector between 1948–73 and 1973–81 can be explained by the slowdown in the growth rate of capital per hour. (See table 3.) The fraction is slightly smaller (16 percent) for the private nonfarm sector and, in the case of manufacturing, the higher rate of growth of capital per hour after 1973 helped to offset part of the multifactor productivity slowdown.

Given the importance of this result, it is useful to address the following quantitative question: How sensitive is this finding to some frequently debated measurement issues? Specifically, is the broad conclusion about the relative importance of capital to the slowdown in output per hour significantly affected by the following:

- (1) the choice of terminal years after 1973;
- (2) the inclusion of land, inventories, or tenant-occupied residential structures, or all, as part of the aggregate capital service measure; or
- (3) the use of different age/efficiency functions in computing the productive capital stock.

Effect of changing the terminal year

In general, there are at least two considerations in selecting specific intervals when measuring productivity growth rates. First, we want a period that is long enough to “establish” a statistical trend. Second, we want to select end

points which represent similar points of the economic cycle and thus minimize the effects of cyclical changes. The most common method is to select peaks of business cycles as the end points. The presumption is that labor and capital are fully—or at least about equally—used during both periods. Given these criteria, we selected the periods 1948 through 1973 and 1973 through 1981. Each of the terminal years includes a cyclical peak designated by the National Bureau of Economic Research.⁶

To examine whether the choice of a different end year would significantly affect the explanation of the productivity slowdown, we analyzed the slowdown by looking at periods varying from 1973 to 1977, 1978, 1979, 1980 and 1981. In 1981, the annual index of business output reached a peak in July. The year 1979 was also a somewhat higher year than the two earlier ones but not as high as 1981. The other three years (1977, 1978, and 1980) are included only for comparison. (See table 4.)

When 1979 and 1981 are used as terminal years, the slowdown in the annual growth rate of output per hour is the same—2.2 percentage points. However, for the 1973–79 period, 27 percent of the slowdown in labor productivity is attributable to a slower rate of growth in the capital-labor ratio and 73 percent to a deceleration in multifactor productivity. As previously indicated, the respective proportions based on 1973–81 are about 18 percent and 82 percent. The proportions for the other 3 years are approximately within the range of those for 1979 and 1981. These patterns are similar for the nonfarm business sector.

The story in manufacturing is somewhat different. Although there was a slowdown in the rate of growth of output per hour for each of the five periods compared, there was none during which a falloff in the growth in capital per hour was a contributing factor. In fact, in 4 of the 5 comparisons, the rate of growth of capital per hour accelerated in the later period, so that the slowdown in multifactor productivity was actually larger than that for output per hour.

Therefore, for private business and nonfarm business, there is some change in the relative importance of capital in explaining the slowdown in output per hour when the terminal year is changed from 1981 to 1979 or other years. However, in the case of manufacturing, changes in the capital-labor ratio did not contribute to the productivity slowdown in any of the five periods.

Regardless of the periods selected, the smaller growth in the capital-labor ratio never accounts for the bulk of the slowdown in output per hour and, at most, accounts for less than 30 percent, while multifactor productivity accounts for at least 70 percent. This applies to all three categories: private business, private nonfarm business, and manufacturing.

The capital services measure

The second measurement issue concerns the composition of the capital service measure. The BLS measure is designed

Table 4. Contributions to the slowdown in the annual growth rate of output per hour of all persons, by major sector, for selected periods compared with 1948–73

Measure	1973 to 1977	1973 to 1978	1973 to 1979	1973 to 1980	1973 to 1981
Private business					
Output per hour of all persons	-1.6	-1.8	-2.2	-2.4	-2.2
Minus: Contribution of capital services per hour	-0.2	-0.5	-0.6	-0.4	-0.4
Equals: Multifactor productivity	-1.4	-1.3	-1.6	-2.0	-1.8
Percent of slowdown:					
Capital services per hour	12	28	27	17	18
Multifactor productivity	88	72	73	83	82
Private nonfarm business					
Output per hour of all persons	-1.3	-1.4	-1.9	-2.1	-1.9
Minus: Contribution of capital services per hour	-0.1	-0.3	-0.5	-0.3	-0.3
Equals: Multifactor productivity	-1.2	-1.1	-1.4	-1.8	-1.6
Percent of slowdown:					
Capital services per hour	8	21	26	14	16
Multifactor productivity	92	79	74	86	84
Manufacturing					
Output per hour of all persons	-1.1	-1.3	-1.4	-1.6	-1.3
Minus: Contribution of capital services per hour	0.3	0.0	0.1	0.3	0.3
Equals: Multifactor productivity	-1.4	-1.3	-1.5	-1.9	-1.6
Percent of slowdown:					
Capital services per hour	-27	0	-7	-19	-23
Multifactor productivity	127	100	107	119	123

to gauge the flow of capital services to the production process and comprises business structures and equipment, tenant-occupied residential structures, inventories, and land. Scholars working on productivity generally agree that inventories and land should be counted in capital inputs, but there is a question about how these nondepreciable assets should be combined with the depreciable ones—that is, business structures and equipment. (BLS aggregates different asset types using rental prices; the rental prices for depreciable assets include depreciation.) A question has also been raised about whether tenant-occupied structures should be included because owner-occupied dwellings are excluded.

To judge the sensitivity of the results to these questions, we excluded tenant-occupied dwellings, inventories, and land individually and together from the measure of the productive capital stock. In the case of the private business sector, excluding land or inventories has only a negligible effect on the annual rates of growth of capital services per hour during both 1948–73 and 1973–81. (See table 5.) Excluding tenant-occupied residential structures has a larger effect on the growth rates of the capital-labor ratio, but the differences are too small to significantly affect capital's contribution to the growth rates of output per hour during the two subperiods. This is because the contribution is measured by weighting the growth in the capital-labor ratio by capital's share of output, which was about 35 percent.

The net result of these experiments for the private business sector is that changing the composition of the capital input measure would alter the contribution of the capital-labor ratio to the falloff in output per hour by no more than 0.1 percentage point. The results are the same for the private nonfarm business sector; and the earlier conclusions for manufacturing remain unchanged.⁶

The age/efficiency function

The third and last sensitivity analysis with regard to capital involves the choice of the age/efficiency function. To measure the productive capital stock, BLS used the so-called perpetual inventory method, which is simply a weighted sum of past investments. The weights are based on an age/efficiency function which describes the pattern of services derived from the capital good as it ages. Unfortunately, the best available empirical evidence does not provide a clear answer on the shape of the function. In fact, different researchers have used different forms based largely on their own observations.

BLS and some private researchers have assumed that assets lose efficiency at a slow rate early in their life and at a much faster rate as they age.⁷ Other researchers assume that an asset's efficiency decreases at a constant rate throughout its life,⁸ and others assume a function in which an asset loses no efficiency until the end of its life, followed by a 100-percent loss.⁹ The Bureau of Economic Analysis of the U.S. Department of Commerce uses a straight-line decay function for developing its measures of capital wealth for the National

Table 5. Effects of excluding selected assets from published measures for private business, selected periods

[In percent]

Period	All assets ¹	All assets excluding:			
		Land	Inventories	Residential	Residential, land, and inventories
Contribution of capital services²					
1948–1981	0.9	0.9	0.9	1.0	1.1
1948–1973	1.0	1.1	1.0	1.1	1.2
1973–1981	0.6	0.6	0.6	0.7	0.8
Slowdown	-0.4	-0.5	-0.4	-0.4	-0.4
Multifactor productivity³					
1948–1981	1.5	1.5	1.5	1.4	1.3
1948–1973	2.0	1.9	2.0	1.9	1.8
1973–1981	0.2	0.2	0.2	0.1	0.0
Slowdown	-1.8	-1.7	-1.8	-1.8	-1.8

¹All assets include equipment structures, rental residential capital, inventories, and land.

²Rate of growth of capital services per hour weighted by capital's share of output.

³Output per unit of combined labor and capital inputs where the combined input is a weighted average of capital and labor (hours of all persons) inputs. The respective weights are capital's share (approximately 35 percent during the period) and labor's share (approximately 65 percent during the period).

Income and Product Accounts.

BLS calculated the contribution of the growth of the capital-labor ratio and the growth rates of multifactor productivity under each assumption and concluded that the choice of function had very little effect on either the multifactor productivity growth rates or the contribution of capital services per hour to the growth rate of output per hour. (See table 6.) In fact, the differences in the annual growth rate of multifactor productivity are at most 0.1 percentage point regardless of the form of the function or the period.

In sum, selecting a different terminal year for the post-1973 productivity slowdown, changing the composition of the capital input measure, or choosing a different age/efficiency function would not significantly alter the broad findings that most of the slowdown in output per hour after 1973 is attributable to factors affecting the growth in multifactor productivity.

We should note that there is another, possibly significant, measurement issue. In the brief statement on the age/efficiency function, we observed that the BLS and all other measures of capital input for productivity analysis assume a fixed pattern of efficiency loss as assets age. Some analysts have hypothesized that the slowdown in output per hour after 1973 may have been caused by a decrease in the services of capital relative to the *measured* capital stock.¹⁰ Presumably, the principal reason is increased obsolescence as a result of the sharp rise in oil prices in 1973 and 1979 and the shift of part of capital spending to energy-saving techniques. This hypothesis has been much debated in the literature. It is an important issue, and the Bureau has undertaken research to measure its significance.

Sources of change in multifactor productivity

As we have indicated, many factors have influenced the long-term growth and the post-1973 slowdown in the BLS measure of multifactor productivity. We will briefly review

several of the more empirically manageable sources of these changes.¹¹ These include (1) intersectoral shifts in resources; (2) compositional changes in the workforce; (3) changes in capacity utilization; (4) growth of research and development (R&D) outlays; and (5) changes in *hours at work* relative to *hours paid*. While these factors help to explain part of the longer term annual growth rate of multifactor productivity and its falloff after 1973, the part left unexplained remains uncomfortably large.

Long-term growth. Improved allocation of labor and capital among sectors obviously results in increased multifactor productivity. The most dramatic shift during the postwar period was the movement of labor from the farm to the nonfarm sector of the economy. In 1948, the number of persons engaged in farming accounted for about 16 percent of the total number engaged in the private business sector; by 1973, the ratio had dropped to 5 percent, and by 1981, to 4 percent. In fact, the shift was virtually completed by the mid-1960's. According to BLS estimates, this reallocation of labor contributed about 0.1 percentage point to the multifactor productivity growth rate from 1948 to 1981.

The BLS measure of multifactor productivity is based on hours of all persons and assumes that their skills are homogeneous. Consequently, shifts from less to more skilled labor are not reflected in the BLS measure of labor input but, instead, are attributed to growth in multifactor productivity. The change in the composition of the labor force—particularly in higher educational attainment—has been one of the most important sources of growth in multifactor productivity between 1948 and 1981. Increases in the efficiency of an hour's work resulting from a shorter workweek, as well as increased work experience (at least as suggested by changes in the age-sex composition of the labor force) have also contributed to changes in the BLS measure of multifactor productivity. Based on estimates made by Edward F. Denison, the sum of these compositional changes—mainly increased education—contributed about 0.4 percentage point per year to the growth of multifactor productivity over the 33 years.¹²

Available information on capacity utilization for manufacturing indicates that the rates were about the same in 1948 and 1981. This at least suggests that changes in the rate of capital utilization probably did not affect the long-term trend in the BLS measure of multifactor productivity.

Technological improvements in production are generally viewed as one of the major sources of growth in multifactor productivity. Consequently, research and development have been a major area of study in connection with multifactor productivity. Judging from estimates made by Zvi Griliches for the mid-1960's and 1970's and by Nestor Terleckyj from the late 1940's to the early 1980's, R&D may have contributed between 0.2 and 0.3 percentage points to the annual growth in multifactor productivity from 1948 to 1981.¹³

The BLS series on labor inputs is based on hours paid rather than hours worked and therefore includes paid vacations and sick leave. For productivity measurement, it would be more appropriate to use an hours worked measure, but the necessary data are not now available.¹⁴ The Bureau has experimented with varied sources of data on leave practices and so on for 1952, 1972, and 1977 to obtain a rough approximation to the trend in the ratio of hours at work to hours paid for all employees in the private nonfarm business sector. According to these rough estimates, the ratio decreased by 0.1 percent per year between 1952 and 1977. Therefore, adjusting the BLS measure of hours paid to an hours at work concept would reduce the average annual rate of growth of labor inputs by 0.1 percent per year during the 15-year period and, consequently, raise the annual rate of growth of multifactor productivity by somewhat less than 0.1 percentage point.¹⁵ (Estimates for manufacturing suggest that the decrease in hours at work relative to hours paid was somewhat larger (−0.2 percent per year) during the same period, 1972–77, and therefore the upward adjustment in the growth rate of multifactor productivity would be somewhat more than 0.1 percentage point.)

Adding the effects of the five sources we have briefly discussed indicates that, together, they explain about 0.6-percentage point of the 1.5-percent average annual rate of growth in multifactor productivity in the private business sector during 1948–81. That is, these measured factors explain about 40 percent of the long-term rise in multifactor productivity—about 60 percent remains unexplained.

The post-1973 slowdown. The measured sources account for an even smaller fraction of the post-1973 multifactor productivity slowdown. As indicated, the shift of workers out of farming had virtually come to an end by 1965 and this contributed 0.2 percentage points to the productivity slowdown after 1973. Compositional changes in the labor force occurred at about the same rate before and after the slowdown and consequently were not a contributing factor. There was a slowdown in the rate of growth of R&D during the 1970's and this could have been a factor, but probably did not contribute more than 0.1 percentage points. And, using hours paid rather than hours at work in measuring hours of all persons could have contributed another 0.1 percentage point to the measured productivity slowdown.

The effects of these four sources, taken together, account for 0.4 percentage points—or about 22 percent—of the 1.8-percent-per-year falloff in multifactor productivity growth in the private business sector between 1948–73 and 1973–81. Data are not available for measuring changes in capacity utilization for private business but, judging from an analysis of manufacturing, changes in the rates of capacity utilization could account for a significant proportion of the multifactor productivity slowdown in private business after 1973. Even with this additional adjustment, the percentage left unexplained would probably still be large.

Table 6. Sensitivity of multifactor productivity measure, and the contribution of the capital-labor ratio to output per hour for selected age/efficiency functions in private business

[In percent]

Year	BLS (Hyperbolic)	Hulten/Wyckoff (Best geometric approximation) ¹	Gross (One-hoss-shay)	Straight line
Multifactor productivity				
1948-1981.....	1.5	1.6	1.5	1.5
1948-1973.....	2.0	2.0	2.0	1.9
1973-1981.....	0.2	0.3	0.2	0.3
Slowdown.....	-1.8	-1.7	-1.8	-1.6
Contribution of capital services per hour				
1948-1981.....	1.0	0.9	1.0	1.0
1948-1973.....	1.0	1.0	1.0	1.1
1973-1981.....	0.6	0.5	0.6	0.5
Slowdown.....	-0.4	-0.5	-0.4	-0.6

¹Charles R. Hulten and Frank C. Wyckoff, "The Measurement of Economic Depreciation," in Charles R. Hulten, ed., *Depreciation, Inflation and the Taxation of Income from Capital* (Washington, The Urban Institute Press, 1981), pp. 81-125.

Summary

As we pointed out in the beginning, the new BLS measures of capital service inputs and multifactor productivity extend the Bureau's work in measuring the causes of the growth of labor productivity and its slowdown after 1973. The major conclusions at this stage are that, between 1948 and 1981, about two-fifths of the growth of output per hour of all

persons in the private business sector resulted from increases in the amount of capital per hour used in production and about three-fifths came from the growth of multifactor productivity, or economic progress. Although the growth rate of capital per hour slowed between 1948-73 and 1973-81, most of the labor productivity deceleration reflected a falloff in multifactor productivity growth.

These findings virtually prescribe the Bureau's future research in this area. It includes trying to determine whether the method of measuring capital stock has tended to overstate its growth, particularly after 1973, because of unaccounted-for increases in obsolescence rates due to the sharp rises in energy prices in 1973 and 1979. The Bureau is also attempting to measure the sources of growth and the slowdown of multifactor productivity, including the sources we have discussed. And, in addition, BLS is constructing multifactor productivity measures at the two-digit Standard Industrial Classification (SIC) level in manufacturing which will relate gross output to inputs of energy, other purchased materials, and purchased services, as well as to inputs of capital services and labor. These disaggregated measures will make it possible to measure the direct and indirect effects of changes in energy and other materials prices on the growth and slowdown of multifactor productivity.¹⁶ □

FOOTNOTES

¹Part of the increase in output per unit of combined capital and labor inputs in the private business sector reflects gains from resources employed in other sectors of the economy. These include, for example, resources used by government and nonprofit institutions for education and training programs. The Bureau of Labor Statistics presently treats education of the work force as a source of growth of multifactor productivity. The Bureau is currently developing measures showing the compositional changes in the labor force that reflect, among other things, the resources used in education and training. These will be used to adjust the hours series in order to obtain a more comprehensive measure of labor input.

²Technically speaking, the relationship between the price of net output, factor prices, and multifactor productivity is the "dual" of the relationship between net output, labor and capital service inputs, and multifactor productivity.

³The methodology and sources of data underlying the measures of productivity are discussed in detail in *Trends in Multifactor Productivity, 1948-81*, Bulletin 2178 (Bureau of Labor Statistics, 1983).

⁴Dale W. Jorgenson and Zvi Griliches, "The Explanation of Productivity Change," *The Review of Economic Studies*, July 1967, pp. 249-83.

⁵Changes in the BLS measures of output per unit of capital services were closely correlated with changes in the Federal Reserve Board index of capacity utilization in manufacturing. For 1948-81, the correlation coefficient was 0.90.

⁶The choice of these terminal years was also based on an analysis of BLS quarterly data on output per hour of all persons. For the detailed discussion, see *Trends in Multifactor Productivity*.

⁷The BLS calculations for private nonfarm business and for manufacturing are reported in *Trends in Multifactor Productivity*. See also Edward F. Denison, *Accounting for Slower Economic Growth* (Washington, The Brookings Institution, 1979); and *Capital Stock Estimates for Input-Output Industries: Method and Data* (Bureau of Labor Statistics, 1979). These estimates were mainly developed by Jack Faucett Associates.

⁸Barbara Fraumeni and Dale Jorgenson, "The Role of Capital in U.S. Economic Growth, 1948-76," in George M. von Furstenberg, ed., *Capital Efficiency and Growth* (Cambridge, Mass, Ballinger Publishing Co., 1980).

⁹John Kendrick and Elliot Grossman, *Productivity in the United States* (Baltimore, Md., The Johns Hopkins University Press, 1980).

¹⁰Martin Neil Baily, "Productivity and the Services of Capital and Labor," *Brookings Papers on Economic Activity*, Vol. 1, 1981, pp. 1-66; and E. R. Berndt and D. O. Wood, "Engineering and Econometric Interpretations of Energy-Capital Complementarity," *American Economic Review*, June 1979, pp. 342-54.

¹¹For a more detailed discussion of factors affecting the BLS measure of multifactor productivity, see *Trends in Multifactor Productivity*. For analyses of possible sources contributing to the productivity growth and slowdown besides those discussed in this section, see Edward F. Denison, "The Interruption of Productivity Growth in the United States," *Economic Journal*, March 1983, pp. 1-22, and references cited there.

¹²Edward F. Denison has kindly made his estimates through 1981 available to us. For a discussion of his methodology in arriving at these estimates, see Edward F. Denison, *Accounting for United States Economic Growth, 1929-69* (Washington, The Brookings Institution, 1974).

¹³Zvi Griliches, "R&D and the Productivity Slowdown," *American Economic Review*, May 1980, pp. 343-48; and Nestor E. Terleckyj, "R&D, Innovation and the Economy: What do Economists Know?" Remarks delivered at the White House Conference on Productivity, held in San Diego, Calif., July 20, 1983.

¹⁴The BLS started a survey in 1981 which collects statistics on hours at work, and this will make it possible in the future to adjust the hours measure to a more appropriate one. At the time of this writing, the survey data for 1982 are being processed. An article showing the findings and the methodology will be published in the *Monthly Labor Review*.

¹⁵The contribution of the decline in the ratio to multifactor productivity growth is measured by multiplying labor's share of total output (0.65) by the annual rate of decline in the ratio of hours at work to hours paid.

¹⁶Dale W. Jorgenson, "Energy Prices and Productivity Growth," in Jerome M. Rosow, ed., *Productivity Prospects for Growth* (New York, Van Nostrand Reinhold Co., 1981), pp. 35-53; and E. R. Berndt and D. O. Wood, "Engineering and Econometric Interpretations of Energy-Capital Complementarity."

APPENDIX: The multifactor productivity model

As indicated in the text, the BLS multifactor productivity measure includes capital in addition to labor inputs. It also incorporates recent theoretical developments in productivity measurement using an index number framework based on a fairly flexible form of the production function.

The production function underlying the multifactor productivity measure assumes Hicks' neutral technical change and constant returns to scale (which is used later in the analysis). The general form of the function can be written as,¹

$$(1) \quad Q(t) = A(t) f[K(t), L(t)]$$

where,

$Q(t)$ = real net output at time t ;

$K(t)$ = input of capital services at time t ;

$L(t)$ = input of labor services at time t ; and

$A(t)$ = index of Hicks' neutral technical change or multifactor productivity at time t .

Differentiating (1) with respect to time, t , and with some algebraic manipulations, the derived "sources of growth" equation (with t omitted) is,²

$$(2) \quad \frac{\dot{Q}}{Q} = \frac{\dot{A}}{A} + \left[\left(\frac{\partial Q}{\partial K} \frac{K}{Q} \right) \frac{\dot{K}}{K} + \left(\frac{\partial Q}{\partial L} \frac{L}{Q} \right) \frac{\dot{L}}{L} \right]$$

where a dot over the variable indicates the derivative of the

Table A-1. Productivity and related measures in private business, 1948-82¹

[1977 = 100]

Year	Productivity			Output ³	Inputs			
	Output per hour of all persons	Output per unit of capital	Multifactor productivity ²		Hours of all persons ⁴	Capital ⁵	Combined units of labor and capital inputs ⁶	Capital per hour of all persons
1948	45.3	99.0	60.0	36.8	81.3	37.2	61.3	45.7
1949	46.0	93.5	59.3	36.1	78.6	38.6	60.9	49.2
1950	49.7	98.6	63.6	39.5	79.5	40.1	62.1	50.4
1951	51.2	100.1	65.1	41.8	81.8	41.8	64.3	51.1
1952	52.9	99.3	66.3	43.2	81.8	43.5	65.2	53.2
1953	54.6	100.6	68.0	45.1	82.6	44.9	66.4	54.3
1954	55.6	96.2	67.7	44.3	79.8	46.1	65.5	57.7
1955	57.8	100.9	70.7	47.9	82.9	47.5	67.8	57.3
1956	58.5	100.0	70.9	49.2	84.2	49.2	69.4	58.5
1957	60.0	97.9	71.6	49.7	82.9	50.7	69.4	61.2
1958	61.8	94.3	72.0	48.9	79.0	51.9	67.9	65.6
1959	63.9	99.3	74.9	52.5	82.1	52.9	70.0	64.4
1960	64.8	98.5	75.4	53.3	82.2	54.1	70.7	65.8
1961	67.0	98.0	76.9	54.2	80.9	55.3	70.5	68.4
1962	69.6	101.2	79.7	57.2	82.2	56.6	71.8	68.8
1963	72.2	102.6	82.0	59.7	82.7	58.2	72.9	70.4
1964	75.3	105.2	84.9	63.3	84.0	60.2	74.5	71.6
1965	78.0	107.8	87.6	67.6	86.7	62.7	77.2	72.4
1966	80.4	108.0	89.3	71.3	88.7	66.0	79.9	74.5
1967	82.3	104.9	89.6	72.9	88.6	69.5	81.4	78.5
1968	85.1	105.5	91.7	76.7	90.1	72.7	83.7	80.7
1969	85.3	103.7	91.2	78.9	92.5	76.1	86.5	82.3
1970	86.1	98.5	90.2	78.3	90.9	79.4	86.8	87.4
1971	89.2	98.1	92.2	80.6	90.4	82.2	87.5	91.0
1972	92.3	101.0	95.2	86.0	93.2	85.2	90.4	91.5
1973	94.7	103.0	97.5	91.8	96.9	89.1	94.1	92.0
1974	92.4	96.5	93.8	89.9	97.2	93.1	95.8	95.8
1975	94.5	92.0	93.6	88.0	93.1	95.7	94.0	102.8
1976	97.6	96.1	97.1	93.7	95.9	97.5	96.5	101.6
1977	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1978	100.6	101.8	101.0	105.5	104.9	103.6	104.4	98.8
1979	99.3	100.3	99.7	107.9	108.6	107.5	108.2	99.0
1980	98.8	95.5	97.7	106.4	107.7	111.4	108.9	103.4
1981	101.2	95.8	99.3	109.8	108.4	114.6	110.5	105.7
1982	101.1	90.9	97.4	106.6	105.4	117.3	109.4	111.3

¹The private business sector includes all of gross national product except the rest-of-world sector, the rental value of owner-occupied real estate, the output arising in nonprofit organizations, the rental value of real estate occupied by nonprofit organizations, the output of paid employees of private households, government, and the statistical discrepancy in preparing the national income accounts. The private nonfarm business sector also excludes farms but includes agricultural services.

²Output per unit of combined labor and capital inputs.

³Gross Domestic Product originating in the sector, in constant dollars.

⁴Paid hours of all employees, plus the hours of proprietors and unpaid family workers engaged in the sector.

⁵A measure of the flow of capital services used in the sector.

⁶Hours of all persons combined with capital input, using labor and capital shares of output as weights.

SOURCE: Output data are from Bureau of Economic Analysis (BEA), U.S. Department of Commerce, and the Federal Reserve Board. Compensation and hours data are from the Bureau of Labor Statistics, and BEA. Capital measures are based on data supplied by BEA and the U.S. Department of Agriculture.

Table A-2. Productivity and related measures in private nonfarm business, 1948-82¹

[1977 = 100]

Year	Productivity			Output ³	Inputs			
	Output per hour of all persons	Output per unit of capital	Multifactor productivity ²		Hours of all persons ⁴	Capital ⁵	Combined units of labor and capital inputs ⁶	Capital per hour of all persons
1948	51.2	97.9	64.6	35.6	69.6	36.4	55.2	52.3
1949	52.3	92.7	64.2	34.9	66.8	37.7	54.5	56.4
1950	55.6	98.2	68.1	38.3	69.0	39.0	56.3	56.6
1951	56.6	100.4	69.5	40.8	72.2	40.7	58.8	56.3
1952	58.0	99.6	70.4	42.2	72.8	42.4	60.0	58.2
1953	59.0	100.8	71.4	44.1	74.7	43.7	61.7	58.5
1954	59.9	96.1	71.0	43.2	72.1	44.9	60.9	62.3
1955	62.3	100.9	74.1	46.8	75.1	46.4	63.2	61.8
1956	62.5	100.0	74.0	48.1	77.0	48.1	65.1	62.5
1957	63.6	98.0	74.3	48.7	76.6	49.7	65.6	64.9
1958	65.1	94.0	74.3	47.8	73.4	50.8	64.3	69.3
1959	67.4	99.5	77.5	51.6	76.6	51.9	66.6	67.7
1960	67.9	98.4	77.6	52.3	77.0	53.2	67.4	69.0
1961	70.0	98.0	78.9	53.3	76.1	54.4	67.5	71.4
1962	72.5	101.3	81.7	56.4	77.8	55.7	69.0	71.6
1963	74.9	102.7	83.8	58.9	78.6	57.4	70.3	73.0
1964	77.8	105.6	86.7	62.7	80.5	59.4	72.3	73.7
1965	80.3	108.2	89.2	67.0	83.5	62.0	75.1	74.2
1966	82.2	108.7	90.7	71.0	86.4	65.3	78.3	75.6
1967	83.8	105.3	90.7	72.5	86.5	68.9	79.9	79.6
1968	86.6	106.0	92.9	76.4	88.2	72.1	82.3	81.7
1969	86.4	104.1	92.1	78.7	91.1	75.6	85.4	83.0
1970	86.8	98.6	90.6	77.8	89.7	78.9	85.9	88.0
1971	89.7	98.0	92.4	80.1	89.3	81.8	86.7	91.5
1972	93.0	101.1	95.7	85.8	92.2	84.8	89.7	92.0
1973	95.3	103.2	97.9	91.7	96.2	88.8	93.6	92.3
1974	92.9	96.5	94.1	89.7	96.6	93.0	95.4	96.3
1975	94.7	91.7	93.6	87.6	92.5	93.6	93.6	103.4
1976	97.8	96.1	97.2	93.6	95.7	97.4	96.3	101.8
1977	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1978	100.6	101.9	101.1	105.7	105.1	103.7	104.6	98.7
1979	99.0	100.1	99.4	108.0	109.0	107.9	108.6	99.0
1980	98.3	95.2	97.3	106.4	108.2	111.7	109.4	103.2
1981	100.2	95.0	98.4	109.3	109.0	115.1	111.1	105.5
1982	100.2	90.0	96.6	106.2	106.0	118.0	110.0	111.2

NOTE: See table A-1 for sources and footnotes.

variable with respect to time (i.e., $\dot{Q} = \frac{dQ}{dt}$).

Equation (2) shows the rate of change of output as the sum of (a) the rate of change of multifactor productivity, $\left(\frac{\dot{A}}{A}\right)$, and (b) a weighted average of the rates of change of capital and labor inputs, the terms in brackets. Conceptually, multifactor productivity indicates the changes in output resulting from shifts of the production function whereas the terms in brackets measure changes in output resulting from movements along the production function (that is, from increases in combined capital and labor inputs).

The terms in brackets that measure the movements along the production function have a straightforward interpretation: the first term in parenthesis, $\left(\frac{\partial Q}{\partial K} \frac{K}{Q}\right)$, is the elasticity of output with respect to the input of capital services, that is, the percent change in output per 1-percent change in the input of capital service. This is multiplied by the percent change in capital input, $\frac{\dot{K}}{K}$, so that the product,

$\left(\frac{\partial Q}{\partial K} \frac{K}{Q}\right) \left(\frac{\dot{K}}{K}\right)$, is simply the percent change in output resulting from the relative increase in capital services—holding labor inputs constant. The interpretation of the terms for labor input shown in the brackets is the same as that for capital services. Thus, the sum of the terms in brackets measures the contribution of changes in both capital service and labor inputs to changes in output. It shows the change in output that would be realized if there were no change in multifactor productivity.

Transferring the term for the relative change in multifactor productivity in (2) to the lefthand side of the equation, we have,

$$(3) \quad \frac{\dot{A}}{A} = \frac{\dot{Q}}{Q} - \left[\left(\frac{\partial Q}{\partial K} \frac{K}{Q}\right) \frac{\dot{K}}{K} + \left(\frac{\partial Q}{\partial L} \frac{L}{Q}\right) \frac{\dot{L}}{L} \right]$$

In this expression, multifactor productivity can be seen as a measure of economic progress; it shows the rate of growth in output in excess of the increases simply due to increases in labor and capital inputs. This is the first major purpose of the multifactor productivity measure referred to in the introduction.

Table A-3. Productivity and related measures in the manufacturing sector, 1948-82¹

[1977 = 100]

Year	Productivity			Output ³	Inputs			
	Output per hour of all persons	Output per unit of capital	Multifactor productivity ²		Hours of all persons ⁴	Capital ⁵	Combined units of labor and capital inputs ⁶	Capital per hour of all persons
1948	45.1	93.9	56.1	35.8	79.4	38.1	63.8	48.0
1949	46.9	85.6	55.9	33.9	72.4	39.6	60.7	54.8
1950	49.4	94.5	59.9	38.6	78.2	40.9	64.6	52.3
1951	51.1	99.2	62.2	43.0	84.2	43.4	69.2	51.5
1952	52.0	95.5	62.2	44.5	85.4	46.6	71.5	54.5
1953	52.9	98.4	63.5	47.5	89.8	48.3	74.8	53.8
1954	53.7	89.0	62.2	44.1	82.1	49.6	70.9	60.4
1955	56.4	95.6	65.8	48.9	86.6	51.1	74.2	59.0
1956	56.0	92.4	64.8	49.2	87.9	53.3	76.0	60.6
1957	57.1	89.5	65.1	49.5	86.5	55.3	76.0	63.9
1958	56.9	80.4	62.8	45.2	79.4	56.2	72.0	70.8
1959	59.6	89.1	67.0	50.5	84.7	56.7	75.4	66.9
1960	60.0	88.0	67.0	50.7	84.4	57.5	75.6	68.2
1961	61.6	86.9	68.0	50.7	82.3	58.3	74.6	70.9
1962	64.3	92.9	71.5	55.1	85.6	59.2	77.0	69.2
1963	68.9	98.3	76.3	59.6	86.5	60.7	78.2	70.1
1964	72.3	102.3	79.8	63.9	88.4	62.4	80.0	70.6
1965	74.5	107.3	82.8	69.8	93.6	65.1	84.3	69.5
1966	75.3	108.6	83.7	75.1	99.8	69.2	89.8	69.3
1967	75.3	101.1	81.8	75.0	99.6	74.2	91.7	74.5
1968	78.0	101.1	83.7	79.1	101.4	78.2	94.4	77.1
1969	79.3	100.5	84.6	81.7	103.1	81.3	96.6	78.9
1970	79.1	91.8	82.3	77.0	97.3	83.9	93.6	86.2
1971	83.9	92.3	86.0	78.7	93.7	85.2	91.5	90.9
1972	88.2	99.8	91.1	86.2	97.8	86.4	94.7	88.3
1973	93.0	108.2	96.8	95.9	103.2	88.6	99.1	85.9
1974	90.8	99.6	93.0	91.9	101.2	92.2	98.8	91.1
1975	93.4	89.4	92.2	85.4	91.4	95.5	92.6	104.4
1976	97.5	96.1	97.1	93.6	95.9	97.4	96.4	101.5
1977	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1978	100.8	101.5	101.0	105.3	104.5	103.8	104.3	99.3
1979	101.5	99.5	101.0	108.2	106.6	108.8	107.2	102.1
1980	101.7	90.7	98.7	103.5	101.8	114.1	104.8	112.1
1981	105.3	90.2	101.2	106.5	101.2	118.0	105.2	116.7
1982	106.5	82.7	99.9	99.1	93.0	119.9	99.2	128.8

NOTE: See table A-1 for sources and footnotes.

The assumption of constant returns to scale means that the weights (that is, the elasticities) in brackets sum to unity. Using this, we can obtain the important relationship,

$$(4) \quad \left(\frac{\dot{Q}}{Q} - \frac{\dot{L}}{L} \right) = \frac{\dot{A}}{A} + \left[\left(\frac{\partial Q}{\partial K} \frac{K}{Q} \right) \left(\frac{\dot{K}}{K} - \frac{\dot{L}}{L} \right) \right]$$

This expression shows that the rate of change of labor productivity, $\left(\frac{\dot{Q}}{Q} - \frac{\dot{L}}{L} \right)$, is equal to the sum of the rate of change of multifactor productivity, $\frac{\dot{A}}{A}$, and the contribution of the change in capital per hour (capital intensity) to output, where the contribution is measured by the elasticity of output with respect to the input of capital services, $\left(\frac{\partial Q}{\partial K} \frac{K}{Q} \right)$, times the rate of change of capital services per hour, $\left(\frac{\dot{K}}{K} - \frac{\dot{L}}{L} \right)$. This relationship helps to explain the growth and post-1973 slowdown of labor productivity, the second major purpose of multifactor productivity measurement noted in the introduction.

The elasticities, or weights, in equations (2) through (4) are not observable and, in order to estimate these, it is necessary to make the further assumption that the marginal products of capital and labor are equal to their respective real market prices. This is equivalent to assuming a competitive economy operating at long-run equilibrium. Thus, it is assumed that,

$$(5) \quad \frac{\partial Q}{\partial K} = \frac{C}{P} \text{ and } \frac{\partial Q}{\partial L} = \frac{W}{P}$$

where,

P = price of net output;
 C = rental price of capital services; and
 W = price of labor services.

Substituting the expressions in (5) for the marginal productivities in the elasticity equations yields the capital and labor shares, S_K and S_L , respectively.

$$(6) \quad S_K = \frac{CK}{PQ}, \text{ and } S_L = \frac{WL}{PQ}$$

where, $S_K + S_L = 1$.

Equations (2) through (4) can now be written as:

$$(2') \quad \frac{\dot{Q}}{Q} = \frac{\dot{A}}{A} + \left[S_K \frac{\dot{K}}{K} + S_L \frac{\dot{L}}{L} \right]$$

$$(3') \quad \frac{\dot{A}}{A} = \frac{\dot{Q}}{Q} - \left[S_K \frac{\dot{K}}{K} + S_L \frac{\dot{L}}{L} \right]$$

$$(4') \quad \frac{\dot{Q}}{Q} - \frac{\dot{L}}{L} = \frac{\dot{A}}{A} + S_K \left(\frac{\dot{K}}{K} - \frac{\dot{L}}{L} \right)$$

Equations (2') through (4') are *Divisia* indexes with changing weights, and require continuous data. The BLS multifactor productivity indexes are based on the Tornqvist index number formula which is a discrete approximation to the *Divisia* index.³ More specifically, the discrete index number formula used for measuring (2') is:

$$(2'') \quad \ln \frac{Q(t)}{Q(t-1)} = \ln \frac{A(t)}{A(t-1)} + \left[\bar{S}_{Kt} \ln \frac{K(t)}{K(t-1)} + \bar{S}_{Lt} \ln \frac{L(t)}{L(t-1)} \right]$$

where

$$\bar{S}_{Kt} = 1/2 [S_{Kt} + S_{Kt-1}]; \text{ and}$$

$$\bar{S}_{Lt} = 1/2 [S_{Lt} + S_{Lt-1}].$$

Tables A-1, A-2, and A-3 present index numbers of the BLS annual measures (of the antilogarithms) of the variables shown in equation (2'') and of the Tornqvist approximations of (3') and (4'). Thus, table A shows for the private business sector yearly index numbers (1977=100) of output, $\frac{Q(t)}{Q(t-1)}$, multifactor productivity, $\frac{A(t)}{A(t-1)}$, and combined units of labor and capital inputs, the antilogarithm of the sum of the terms in brackets.

—FOOTNOTES—

¹For simplicity, the analysis is limited to two inputs, capital and labor; more generally, K and L can be viewed as vectors of capital and labor inputs, respectively.

²For the derivation of this growth equation and its interpretation, see Robert M. Solow, "Technical Change and the Aggregate Production Function," *Review of Economics and Statistics*, August 1957, pp. 312-20; and Dale W. Jorgenson and Zvi Griliches, "The Explanation of Productivity Change," *Review of Economics Studies*, July 1967, pp. 249-80.

³The Tornqvist quantity index is said to be an *exact* index for the homogeneous translogarithmic production function. This means that the change in output resulting from changes in inputs and input prices as measured by the Tornqvist index is the same as would be obtained by using a homogeneous translogarithmic production function. See W. E. Diewert, "Aggregation Problems in Measurement of Capital," in Dan Usher, ed., *The Measurement of Capital*, Studies in Income and Wealth Vol. 45, National Bureau of Economic Research (Chicago, University of Chicago Press, 1980), pp. 446-52, and cited references.

Labor force statistics from a family perspective

Over time, the family unit has become a major focus for policy planning, program evaluation, and research; two data series, which are now part of the regular CPS, more quickly capture the effects of the business cycle on the employment and earnings of family members

ELIZABETH WALDMAN

“As are families so is society . . . If well ordered, well instructed, and well governed, they are springs from which go forth the streams of national greatness and prosperity—of civil order and public happiness.”¹

Families are the basic unit of American society that provide the country with its current labor supply and mold the character of its future workers. But, in contrast to the “well ordered,” ideal state described above, family life is more often depicted as in flux or crisis. This has been especially true of the years following World War II, during which families changed from an extended to a nuclear structure, moved from a rural to an urban setting, and adjusted from wartime pressures to periods of peacetime prosperity or recession.

In 1940, a monthly sample survey was initiated to measure changes in the characteristics of the Nation’s labor force.² This article draws on the results of that survey to present a historical perspective on the labor market activities of family members. Subsequent sections review recent developments in survey procedures that permit the tracking of broad secular trends and of business-cycle effects on family employment and income, and suggest future directions for family-oriented economic analyses.

Trends: 1940’s to early 1980’s

Since 1940, but especially over the last decade, families have become substantially smaller, and the variety of living

arrangements has increased. For example, today’s school-age and preschool children are more likely to be living with one parent or a stepparent and are far more likely to have a working mother. Factors contributing to such changes include unusually low fertility rates, exceptionally high divorce rates, later marriage, the aging of the population, and greater labor force participation by married women.

Some other results of these developments are shown in table 1. Since 1940, the number of married couples has nearly doubled, but the number of families maintained by women has nearly tripled, and half a million more men now do not live with their spouses but maintain their own families.

The 43-year span which saw broken families become more numerous and their employment and unemployment problems more prominent also witnessed the gradual transformation of more than half of all married couples to multi-earner families, and the labor force from one that was predominately male to one that is currently 45 percent female. Married women have accounted for the majority of additional workers demanded by the economy, except during 1941–44, when men and single women dominated the wartime influx to the labor force.

Despite the grave national emergency of World War II, married women continued to be utilized in the civilian labor force along traditional prewar lines. If a wife had no children, she was generally free to take a paid job, but if she had even one young child, society expected her to stay at home. The largest single source of additional wartime work-

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ers were male and female youths of high-school or college age. Women over the age of 35 were the second largest labor pool.³ These "extra" workers were recruited mainly from the ranks of married women who either had no children or whose children were old enough not to require their mothers' full-time care. Married women's wartime labor force participation rates were:

	Participation rate (in percent)	
	1940	1944
Age 18 to 64	14	23
Age 35 to 44	15	26
With no children under 10 years	20	35
With children under 10 years	8	13

The labor force recruitment of women ages 20 to 34 was limited because of the wartime rise in marriages and child-birth within this age group.

Labor force participation rates for married women did not decline in the postwar period. In 1950, participation rates of wives were much the same as they had been in 1944 (table 2). Over the ensuing decades, wives' rates moved up, pausing only occasionally, mostly during some recessions. For wives with young children, labor force participation rates have quadrupled since 1950.

Age of youngest child

One of the effects of the general increase in married mothers' labor force activity is that many differences in their participation rates that previously were correlated with the age of the youngest child in the home have become blurred or have disappeared entirely in recent years (table 3). In 1970, married mothers' participation rates ranged from 24 percent for those whose youngest child was less than a year old to 57 percent where the youngest was 14. Moreover, participation rates exhibited a step-wise progression closely related to the age of the youngest child. On balance, the participation rates for mothers of children 0 to 2 years old were about 30 percent or lower; for mothers with 3- to 5-year-olds, they were in the mid- to upper-30-percent range; and for those with 6- to 11-year-olds, rates were in the 40- to 50-percent range. Participation rates exceeded 50 percent only among those women with junior-high or high-school age children.

By March 1983, these four distinct "steps" or ranges of participation rates had been reduced to three. The rate for mothers of infants was 45 percent, with rates for those with children 2 to 5 years old falling in a narrow band between 50 and 57 percent, and rates for mothers with school-age children concentrated in an almost equally small range between 60 and 67 percent. In addition, by 1983, the entire range of participation rates had contracted. In 1970, the highest rate (57 percent) was more than twice the lowest (24 percent), but by 1983, the highest (67 percent) was only about half again as great as the lowest (45 percent). That

45 percent of all wives with infant children are now in the labor force reflects many interrelated factors, such as inflation and recession. It also attests to the turnaround in society's attitude about mothers working outside the home and to women's persistence in the labor market despite higher-than-average unemployment rates.

As in the past, mothers with young children have a more difficult time in the labor market than other mothers.⁴ In March 1983, the unemployment rate for married women with toddlers under 3 was 12.8 percent, about twice that of mothers whose youngest child was at least 6 years old. In part, unemployment rates of mothers of young children may be higher because child-care responsibilities may restrict the types of jobs these women can accept. When employed, however, more than 60 percent of toddlers' mothers work at full-time jobs. This proportion rises to more than 70 percent when the children are school age. Of all 46 million children under age 18 in married-couple families, half had both parents in the labor force. (The issue of child care for working mothers is discussed by Sheila Kamerman elsewhere in this issue.)

Husbands

In March 1983, when 52 percent of all wives were in the work force, 79 percent of the husbands were, too. But, over time, husbands' labor force participation rates have drifted down considerably:

Year	Participation rate (in percent)
1940	93
1950	92
1960	89
1970	87
1980	81
1983	79

Much of the decline is attributable to a reduction in the number of husbands 55 or older in the labor force. This is due in large part to the growth of a great variety of private

Table 1. Families by type, selected years, 1940-83

[Numbers in thousands]

Year ¹	All families	Married-couple families	Other families		
			Maintained by men	Maintained by women	
				Total	As percent of all families
1940	32,166	26,971	1,579	3,616	11.2
1947	35,794	31,211	1,186	3,397	9.5
1950	39,303	34,440	1,184	3,679	9.4
1955	41,951	36,378	1,339	4,234	10.1
1960	45,062	39,293	1,275	4,494	10.0
1965	47,836	41,649	1,181	5,006	10.5
1970	51,227	44,415	1,239	5,580	10.9
1975	56,257	47,528	1,412	7,316	13.0
1980	59,910	49,132	1,769	9,009	15.0
1983	61,834	49,947	2,059	9,828	15.9

¹Data were collected in April of 1940, 1947, and 1955, and in March of all other years.

NOTE: Data for 1975 have been revised since initial publication.

retirement plans and better social security benefits, including a broadening of the eligibility requirements for disability benefits. In 1982, the labor force participation rate for husbands age 65 or over was 19 percent, compared with 48 percent in 1952. Corresponding rates for husbands 55 to 64 years of age were 71 and 89 percent. But participation rates for younger husbands have also drifted downward, a development probably related, to some degree, to the increasing participation of their wives. (More details about the current labor force activity and income of husbands and wives by race and Hispanic origin are provided in Howard Hayghe's article on page 26 of this issue. Information on men's reasons for early retirement and the effects on the family is presented in Kezia Sproat's article on page 40.)

Divorce

Divorce is . . . "a symptom of general family illness due to vast social changes confusing to individuals. But will these confusions be resolved as long as women insist upon feministic movements and men in baffled protest cry out that women are usurping their place in the world."⁵

These thoughts from a 1939 treatise, "The American Family in A Changing Society," could easily have been written during the turbulent 1970's, when the divorce rate hit the highest level ever recorded,⁶ and a million women were added to the labor force in every year but one. The Depression of the 1930's had placed enormous strains on family life as the economic foundations of a great many families crumbled. Although neither divorce nor the employment of wives was as common as in recent years, both were viewed as destroyers of family life. The 1970's—like the 1930's—were also years of great stress for many families, but for different reasons, including inflation and changing lifestyles.

In 1940, there was 1 divorce for every 6 marriages, while in 1980, there was 1 for every 2 marriages. During both periods, an extensive amount of remarriage occurred, so that married-couple families predominated—84 percent in 1940 and 80 percent in 1980. However, divorces have also swelled the number of families maintained by women in recent years, a factor that raises the labor force participation rate of women maintaining families because divorcees have historically registered the highest participation rates of any marital group of women. In 1983, 60 percent of women maintaining families were in the labor force, compared with 44 percent in 1946 when widows dominated the group. (More details on families maintained by women are provided in Beverly Johnson's article on page 30 of this issue.)

Current data

All of the family labor force statistics discussed so far are derived from detailed data collected only once each year. Since 1940, these statistics have typically been collected in the March supplement to the Current Population Survey, to provide a "snapshot" of the employment status of family members. When the structure of families changed exten-

sively in the 1970's, the Bureau of Labor Statistics (BLS) began developing two new series of monthly and quarterly data that would more quickly capture the effects of business-cycle changes on the employment situation of families and their members.⁷

BLS now publishes a series of person-family data every month in *Employment and Earnings*. Introduced in July 1977 on a quarterly basis, this series confirms long-term trends. For example, families in which the husband is employed are more likely to have other employed members than families where the husband is either unemployed or not in the labor force. Of the 36.8 million families where the husband was employed in the second quarter of 1983, 64 percent had at least one other employed person, while of the 2.6 million families where the husband was unemployed, 58 percent had some other person employed. Only 18 percent of the unemployed women maintaining families lived with another relative who was employed. The monthly statistics thus enable analysts to track the extent of unemployment within families as a recession develops or abates, and report on the cushioning effect when other family mem-

Table 2. Labor force participation rates of married women, husband present, by presence and age of own children, 1950-83

Year ¹	Participation rate				
	Total	With no children under 18 years	With children under 18 years		
			Total	6 to 17 years, none younger	Under 6 years
1950	23.8	30.3	18.4	28.3	11.9
1951	25.2	31.0	20.5	30.3	14.0
1952	25.3	30.9	20.7	31.1	13.9
1953	26.3	31.2	22.4	32.2	15.5
1954	26.6	31.6	22.7	33.2	14.9
1955	27.7	32.7	24.0	34.7	16.2
1956	29.0	35.3	24.5	36.4	15.9
1957	29.6	35.6	25.3	36.6	17.0
1958	30.2	35.4	26.5	37.6	18.2
1959	30.9	35.2	27.9	39.8	18.7
1960	30.5	34.7	27.6	39.0	18.6
1961	32.7	37.3	29.6	41.7	20.0
1962	32.7	36.1	30.3	41.8	21.3
1963	33.7	37.4	31.2	41.5	22.5
1964	34.4	37.8	32.0	43.0	22.7
1965	34.7	38.3	32.2	42.7	23.3
1966	35.4	38.4	33.2	43.7	24.2
1967	36.8	38.9	35.3	45.0	26.5
1968	38.3	40.1	36.9	46.9	27.6
1969	39.6	41.0	38.6	48.6	28.5
1970	40.8	42.2	39.7	49.2	30.3
1971	40.8	42.1	39.7	49.4	29.6
1972	41.5	42.7	40.5	50.2	30.1
1973	42.2	42.8	41.7	50.1	32.7
1974	43.1	43.0	43.1	51.2	34.4
1975	44.4	43.8	44.9	52.2	36.7
1976	45.1	43.7	46.1	53.6	37.5
1977	46.6	44.8	48.2	55.5	39.4
1978	47.5	44.6	50.2	57.1	41.7
1979	49.3	46.6	51.9	59.0	43.3
1980	50.1	46.0	54.1	61.7	45.1
1981	51.0	46.3	55.7	62.5	47.8
1982	51.2	46.2	56.3	63.2	48.7
1983	51.8	46.6	57.2	63.8	49.9

¹Data were collected in April of 1951-55 and March of all other years.

NOTE: Children are defined as "own" children of the women and include never-married sons and daughters, stepchildren, and adopted children. Excluded are other related children such as grandchildren, nieces, nephews, and cousins, and unrelated children.

bers are employed. (The article by Deborah Klein on page 21 of this issue provides more details on this subject.)

A second new statistical series concerns the weekly earnings of families. Between 1967 and 1978, BLS reported once a year on the usual weekly wage and salary earnings of individuals by age, sex, race, and occupation. The information was obtained from supplemental CPS questions asked each May. As part of the shift in emphasis to current, family-based statistics during the late 1970's, steps were taken to relate the earnings of individual workers to the families in which they lived and to collect the data more frequently.

The new quarterly series of weekly family earnings began with data for 1979 and was first published early in 1980.⁸ Since that time, quarterly news releases have illustrated the different earnings patterns among families and the general effects of inflation on their purchasing power. For instance, during the second quarter of 1983, median weekly earnings for married-couple families were \$517 per week—\$354 if there was one earner and \$646 if there was more than one. Multi-earner families continued to account for slightly more than half of all married-couple families. These families were a little better off than others over the year, because their median earnings had increased somewhat more (4.4 percent) than the increase in the Consumer Price Index (3.5 percent). For families maintained by women, median weekly earnings (\$271) were well below those of married couples, but had at least kept pace with inflation.

The present and future

Increasingly, the family unit itself has become the focus for policy planning, program evaluation, and research. The data series currently published by BLS permit policymakers and planners to address the social and economic issues that affect the daily lives of people in families on a more timely basis than ever before. We can now examine the ways in which children and youth, their parents or stepparents, elderly couples, and those living in minority families are affected by the dynamics of the labor market.

Most importantly, the analysis of family statistics aids in shaping our thinking about family life in the future. Clearly, we know a great deal about the demographic characteristics of the population and can estimate the age and race distributions of the population for 1990, the year 2000, and

Table 3. Labor force participation rates of wives by age of youngest child, selected years, 1970–83

Presence and age of children	1970	1975	1980	1983
All wives	40.8	44.5	50.1	51.8
With no children under 18	42.2	43.8	46.0	46.6
With children under 18	39.7	44.9	54.1	57.2
Age of youngest child:				
0 to 1 year	24.0	31.0	39.0	44.6
2 years	30.5	37.1	48.1	50.4
3 years	34.5	41.1	51.7	56.1
4 years	39.4	41.2	51.5	57.2
5 years	36.9	44.0	52.4	56.6
6 years	42.0	46.4	58.5	59.4
7 years	44.7	51.3	61.7	61.1
8 years	44.6	52.1	62.3	65.0
9 years	48.5	52.4	60.8	60.4
10 years	48.7	56.2	63.3	62.4
11 years	47.6	52.8	63.4	66.4
12 years	51.8	49.7	65.7	66.6
13 years	51.8	54.0	64.6	65.3
14 years	56.9	52.5	62.6	66.4
15 years	52.8	55.3	60.8	64.1
16 years	54.3	54.7	62.3	66.8
17 years	55.1	52.6	55.6	62.2

beyond. We can apply current age-, sex-, and race-specific labor force participation rates to the extrapolated population to obtain estimates of the future size and configuration of the labor force.⁹

But how far off are such estimates likely to be? What are the long-term trends in the nondemographic factors affecting the proportions of women who will be in the labor force at some future date? What will be the effect of today's technological changes and worker dislocations; of more flexible work schedules; of later retirement? Is the nuclear family in its classical form (father, mother, children, but no grandparents or other relatives) truly "rapidly breaking down today, not because of 'loose morals' or 'permissiveness,' but because it no longer serves the needs of the population?"¹⁰ Some of these nondemographic factors may have as much to do with shaping the future labor force as similar factors—such as the birth control pill, the transistor, the computer, and the laws governing employment—have had in molding today's work force. As the articles on family statistics in this issue suggest, it is appropriate to monitor both the current status of workers in families and emerging demographic and nondemographic trends in constructing statistics for the future. □

FOOTNOTES

¹ William Makepeace Thayer, American author, 1820–1898, as quoted in Ralph Emerson Browns, ed., *The New American Dictionary of Thoughts* (New York, Standard Book Co, 1957), p. 204.

² The survey referred to is the Current Population Survey (CPS). Detailed information about the survey's background, concepts, and reliability is published in "Labor Force, Employment, and Unemployment from the Current Population Survey," *Handbook of Methods, Volume I*, Bulletin 2134-1 (Bureau of Labor Statistics, 1982).

Unless otherwise indicated, labor force data in this report were obtained from the CPS.

³ See "Source of Wartime Labor Supply in the United States," *Monthly Labor Review*, August 1944, pp. 264–78.

⁴ See reprints of special labor force reports on the marital and family status of workers, beginning with *Marital Status of Workers, March 1959*, Special Labor Force Report 2 (Bureau of Labor Statistics, 1960). Also see Elizabeth Waldman and others, "Working mothers in the 1970's: a look

at the statistics," *Monthly Labor Review*, October 1979, pp. 39-49, and other articles in that issue.

⁵Harriet Ahlers Houdlette, *The American Family in a Changing World* (Washington, American Association of University Women, 1939), p. 25.

⁶See Waldman and others, "Working mothers in the 1970's." Also see U.S. Department of Health and Human Services, National Center for Health Statistics, "Births, Marriages, Divorces, and Deaths for 1982," *Monthly Vital Statistics Report*, Mar. 14, 1983, p. 3.

⁷See Howard Hayghe, "New data series on families shows most jobless have working relatives," *Monthly Labor Review*, December 1976, pp. 46-48; and Janet Norwood, "New approaches to statistics on the family," *Monthly Labor Review*, July 1977, pp. 31-34.

⁸See U.S. Department of Labor, Bureau of Labor Statistics "New Data Relate Workers' Earnings to the Families in Which They Live," USDL 80-188, Mar. 27, 1980.

⁹Articles in the November 1983 issue of the *Review* present the results of the Bureau's most recent projections of economic growth, distribution of demand, and employment through 1995. See also Richard W. Riche, Daniel E. Hecker, and John U. Burgan, "High technology today and tomorrow: a small slice of the employment pie," in the same issue for a discussion of the employment implications of the growth of high technology industries.

¹⁰Alvin Toffler, *The Eco-Spasm Report* (New York, Bantam Books, 1975), p. 89.

Achieving pay equality

Although most people are familiar with the implications of the Equal Pay Act . . . and Title VII of the 1964 Civil Rights Act . . . [the struggle against] pay discrimination has a long and confusing history. It began as far back as the National War Labor Board (NWLB) in World War II with the movement of women into industrial jobs. Title II of Executive Order 9250 established the Wage and Salary Stabilization Policy; Paragraph Two of the order set standards for wage adjustments to be "the correction of maladjustments or inequalities, the elimination of substandards of living and the correction of gross inequities." The NWLB also issued General Order No. 16, which stated that wages for women could be increased without approval of the NWLB to "equalize the wage or salary rate paid to females with rates paid to males for comparable quality and quantity of work on the same or similar operations." . . .

Beyond Title VII and the Equal Pay Act there still exist two other possibilities regarding legal action for comparable worth plaintiffs: The first is that the cases may be tried under the 14th amendment, which provides equal treatment under the law, and this is where plaintiffs might venture. The guarantees of the 14th amendment have been raised in questions including reverse discrimination. Many cases in this area have been tried and are continuing to be developed. Another resort is to have new legislation passed that makes it clear that jobs are to be priced based on comparable worth

—RICHARD W. BEATTY AND JAMES R. BEATTY

"Job Evaluation and Discrimination: Legal, Economic, and Measurement Perspectives on Comparable Worth and Women's Pay," in H. JOHN BERNARDIN, *Women in the Work Force* (New York, Praeger Publishers, 1982), pp. 211 and 215.

Trends in employment and unemployment in families

Multi-earner families have extra protection against financial reversals, but economic recession tends to erode this cushion; during the most recent downturn, the employment of married women declined less than that of married men who are more likely to work in cyclically sensitive industries

DEBORAH PISETZNER KLEIN

The monthly employment and unemployment statistics receive a great deal of national attention because they are a useful yardstick of the state of the economy. In addition to the overall measures, the Bureau of Labor Statistics issues a wide range of data series focusing on specific worker groups. In recent years, there has been an expansion in the data series that enable us to examine the situation of individual workers in a family context. These data provide additional insights into the personal impact of employment and unemployment, because family members often pool their earnings and support each other both financially and emotionally when out of work. This article explores recent trends in employment and unemployment in families.¹

In 1982, 85 percent of the labor force lived in family units. (Of the remainder, 10 million lived alone and 7 million lived with nonrelatives, such as roommates or housemates.) As table 1 shows, more than a third of the labor force consisted of husbands and nearly a quarter were wives. Including other related persons (mostly teenagers and young adults), more than 70 percent of the labor force lived in married-couple families. In recent years, however, there has been a very marked increase in the number of families maintained by women on their own. In 1982, nearly one-tenth of the labor force lived in such families, including the

women themselves, their older children (age 16 and over), and other relatives. Families maintained by unmarried men constituted the remainder of the labor force.

With the increase in the number of families maintained by women, and growing labor force participation by wives, husbands are no longer the mainstay of the market economy. Married men accounted for only 36 percent of the labor force in 1982, down from 41 percent just 5 years earlier and 52 percent in 1955.

Employment

Over the long run, the number of employed persons changes in line with population movements, variations in the desire for work among persons in different demographic groups, and the availability of jobs. During the 1970's, the number of employed persons increased by a whopping 20 million, as the crest of the baby boom reached working age, the proportion of married women working outside the home increased dramatically, and the rapidly expanding service-producing sector provided many new jobs. These developments translated into significant growth in the number of multiworker families. Today more than 60 percent of all husband-wife families have at least two persons employed, compared with fewer than 40 percent in 1955.

More recently, cyclical movements in employment have dominated secular ones. Between April 1981 and February 1983, the number of married men with jobs dropped by 1.8

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Table 1. Labor force, unemployment, and employment by family status, 1982 annual averages

[In percent]			
Family status	Labor force	Unemployment	Employment
All persons	100.0	100.0	100.0
In married-couple families:			
Husbands	36.0	23.3	37.4
Wives	23.2	17.1	23.8
Relatives	12.6	23.3	11.4
In families maintained by women:			
Women who maintain families	5.2	6.3	5.1
Relatives	4.4	11.4	3.7
In families maintained by men:			
Men who maintain families	1.7	1.7	1.7
Relatives	1.4	2.6	1.2
Persons living alone	9.5	7.0	9.7
All others	6.1	7.2	5.9

million, but by June 1983, the recovery had returned 500,000 to employment.

The impact of the 1981–82 recession was much less severe among married women. The number employed declined for several months during 1981—for a total reduction of about 500,000—but began rising again shortly. By June 1983, the number of employed wives was 24.3 million, more than 700,000 above the 1981 low. Thus, in mid-1983, the number of employed married women stood at an all-time high while the number of employed married men was 2 million below its peak of 39.9 million recorded before the 1980 recession.

Employment among women maintaining families on their own has increased over time along with their expanded population. More recently, their employment level has held at about 5 million, but the proportion with jobs declined from 54 to 52 percent over the course of the 1981–82 recession and showed no appreciable improvement in the first half of 1983. (See chart 1.)

Unemployment

With lower-than-average unemployment rates, husbands and wives account for a much smaller share of unemployment (two-fifths in 1982) than they do of the labor force (three-fifths). Women who maintain families on their own account for a slightly larger share of unemployment (6 percent) than of the labor force (5 percent). Relatives, regardless of their family type, are typically young people with high unemployment rates; they account for less than one-fifth of the labor force but nearly two-fifths of the unemployed.

These relationships change over the business cycle, with married men comprising a greater share of unemployment when economic conditions are at their worst. For example, husbands' share of the jobless total rose from 19 percent in July 1981 to 24 percent in December 1982, before receding slightly to 23 percent by June 1983.² (See table 2.)

Married men generally have strong attachment to the labor force and typically have relatively low unemployment rates.

In 1979, for example, when the overall rate was 5.8 percent, the rate for husbands was below 3 percent. However, unemployment for this group is highly cyclical because many married men work in the goods-producing sector of the economy. Thus, their jobless rate rises sharply in every recession and tends to show the most improvement during recoveries. Over the past recession, for instance, the rate for husbands was 3.8 percent in April 1981, peaked in December 1982 at 7.8 percent, and came down about a percentage point in the first half of 1983. While the recovery was still in progress in mid-1983 and further reductions could therefore be expected, it should be noted that, in the business cycles shown in chart 2, married men began each recession with a higher unemployment rate than the previous one.

The unemployment rate for all adult men surpassed the rate for all adult women in 1982, but this was not true among married persons. The jobless rate for married women has consistently been higher than that for married men, although the gap did narrow considerably during the 1981–82 recession. With recovery underway in 1983, the rate for married men dropped more sharply than that for married women, and by midyear, the gap was back to more than a full percentage point. (See chart 2.)

Unemployment among women who maintain families tends to be very high. These women, on average, have completed fewer years of school than wives and are concentrated in lower skilled, lower paying jobs, where there is considerable turnover.³ During the late 1960's, the unemployment rates for married women and for women who maintained families on their own were very similar. Since the early 1970's, however, the rates have diverged. As can be seen in chart 2, women who maintain families have shown little or no improvement in their jobless situation during expansionary periods.

The unemployment cushion in families

With the rising incidence of multiworker families comes the greater likelihood that there will still be a worker in the family when someone becomes unemployed. However, recession not only increases unemployment but also serves

Table 2. Unemployment by family status, selected months, seasonally adjusted

[Numbers in thousands]

Family status	July 1981		December 1982		June 1983	
	Number	Percent	Number	Percent	Number	Percent
Total, all persons	7,854	100.0	12,036	100.0	11,146	100.0
Husbands	1,508	19.2	2,907	24.2	2,586	23.2
Wives	1,398	17.8	2,036	16.9	1,970	17.7
Relatives in married-couple families	1,916	24.4	2,735	22.7	2,558	22.9
Women who maintain families	613	7.9	763	6.3	730	6.5
Relatives in such families	932	11.9	1,389	11.5	1,303	11.7
Other persons	1,483	18.9	2,206	18.3	1,999	17.9

Chart 1. Employment-population ratios¹ for husbands, wives, and women who maintain families, quarterly averages, 1968—second quarter 1983, seasonally adjusted

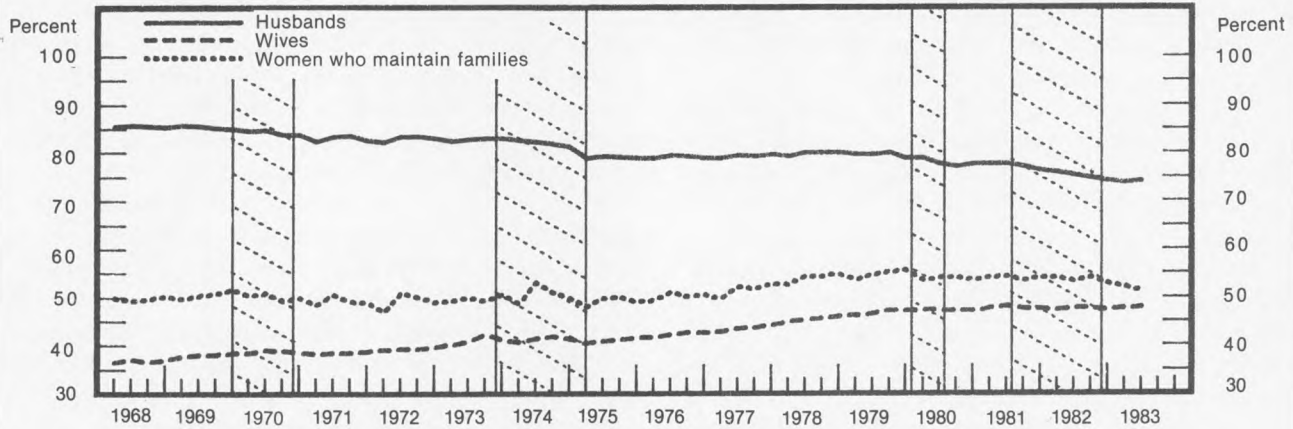


Chart 2. Unemployment rates for husbands, wives, and women who maintain families, by month, 1968–83, seasonally adjusted

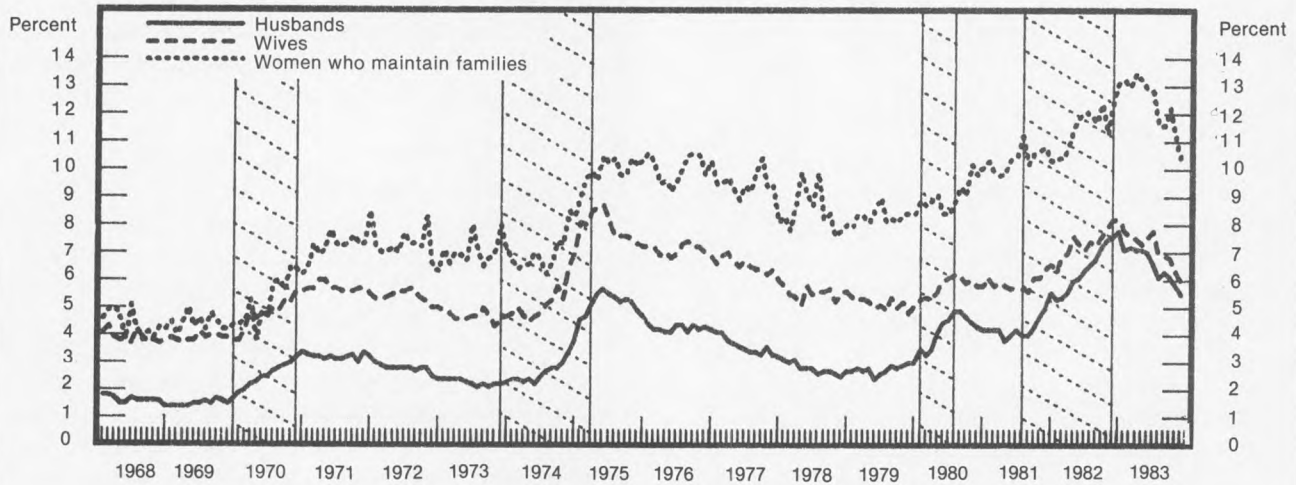
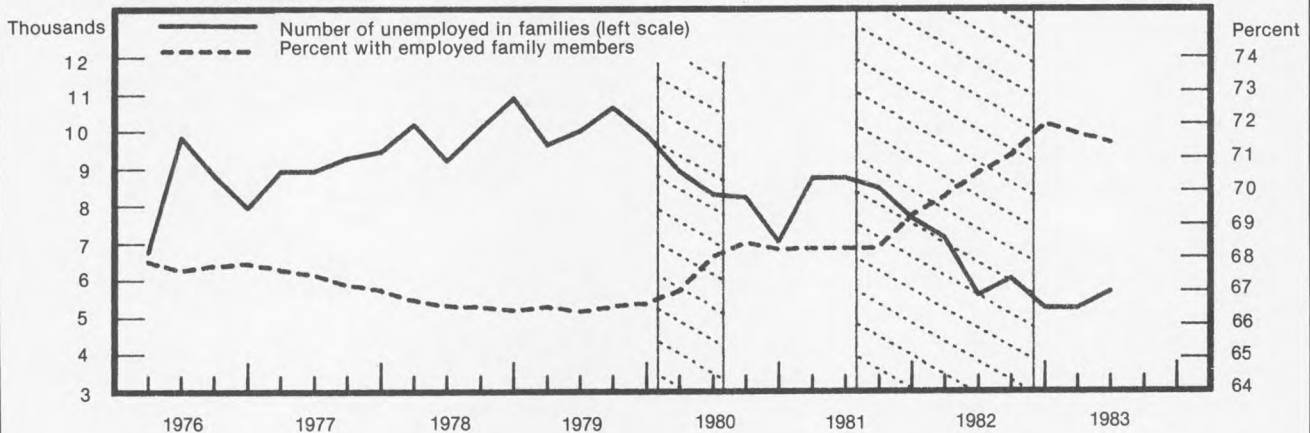


Chart 3. Number of unemployed persons in families and the percentage with someone in family employed, quarterly averages, 1976—second quarter 1983, seasonally adjusted



¹ The employment-population ratio is the proportion of all employed civilians in the civilian noninstitutional population age 16 and over.

NOTE: Shaded areas indicate recessionary periods as designated by the National Bureau of Economic Research.

to reduce the cushion provided by other family members. From the middle of 1981 to the end of 1982, for example, the number of unemployed family members rose from 7 to 10 million; at the same time, the proportion of the unemployed living in a family with an employed member dropped from 70 to 66 percent. (See chart 3.) The major reason for this decline was the general contraction of employment caused by the recession as well as the increasing share of unemployment accounted for by persons with a relatively lower likelihood of having employed family members.

Relatives in husband-wife families—most typically teenage and young adult children of the couple—are the most likely group to live in a family with workers; in 9 out of 10 cases, at least one of their parents has a job. In 1979, these relatives constituted more than 28 percent of the unemployed; in 1982, with the sharp increases in joblessness for groups with traditionally lower unemployment rates, their share was down to 23 percent. Even among this group, there was a recessionary decline in the family employment cushion. The number of unemployed relatives in married-couple families rose from 1.9 to 2.7 million during the 1981–82 recession, and the proportion with an employed person in their family edged down from 93 to 86 percent.

Unemployed wives are also very likely to have an employed person in their family. In 1978, the proportion peaked at nearly 90 percent. Because the person most likely to be working is the husband and because the employment levels of married men were reduced during the recession, the proportion of unemployed wives with working husbands declined sharply, from 87 percent in mid-1981 to 75 percent in mid-1982. With the pickup in employment in 1983, the proportion edged up to 77 percent by midyear.

As married women have entered the labor force, the proportion of unemployed husbands with a working family member has increased markedly. Between 1977 and 1981, the proportion of unemployed husbands with a working wife increased from 48 to 55 percent. As mentioned earlier, the 1981–82 recession drove up unemployment among married men, but the proportion with an employed person in the family did not drop as sharply as among other groups. This was primarily because employment levels for wives did not decline nearly as much as for husbands. With the onset of the recovery, the proportion of unemployed husbands with a worker in the family began to rise, and by June 1983, had reached 56 percent.

Difficulties in coping with economic downturns are exacerbated by the fact that, to a certain extent, unemployment tends to run in families. Persons with high levels of educational attainment and good preparation for careers often marry each other, as do persons with more limited labor market skills. Even more important, when high unemployment hits a specific geographic area, it can affect more than one family member. The fact that the unemployment rate for persons with unemployed spouses runs about three times the rate for persons with employed spouses illustrates this

point most dramatically. Thus, in 1982, the unemployment rate for wives with unemployed husbands was 20.7 percent, compared with 6.3 percent for wives with employed husbands. While the number of married couples who are both unemployed is relatively small—it peaked at 400,000 in December 1982 and was down to 300,000 by mid-1983 (not seasonally adjusted)—the impact of multiple unemployment on their financial well-being is considerable.

Unemployment is a particularly severe problem for families maintained by women. Because there are smaller numbers of persons of working age, on average, in these families, the likelihood of there being an employed member to cushion the effects of unemployment is also smaller. Since quarterly data of this type first became available in 1976, the proportion of unemployed women who maintain families that include an employed person has never been as high as 22 percent. Moreover, unemployed relatives in such families are substantially less likely to have an employed person in their family than relatives in married-couple families. However, in both cases, the problems are principally structural in nature, and the business cycle does not bring about substantial change.

Blacks and Hispanics

Because the cushioning effect of working family members is so different by family type, an understanding of the family composition of different groups in the population is important.

In particular, the family composition of blacks and Hispanics is quite different from that of whites. (See table 3.) Whites are most likely to live in married-couple families where unemployment rates are relatively low and multiple workers most frequent. Blacks, on the other hand, are more likely than whites or Hispanics to live in families maintained by women, which, as we have just seen, are relatively disadvantaged in the labor market. In 1982, 28 percent of the black working-age population lived in a family maintained by a woman, compared with only 8 percent of the

Table 3. Family status of the civilian noninstitutional population by race and Hispanic origin, 1982 annual averages

[In percent]

Family status	White	Black	Hispanic
All persons	100.0	100.0	100.0
In married-couple families:			
Husbands	30.0	19.1	26.3
Wives	30.0	18.6	27.1
Relatives	12.8	11.9	15.7
In families maintained by women:			
Women who maintain families	4.4	14.5	7.6
Relatives	3.8	13.6	6.9
In families maintained by men:			
Men who maintain families	1.3	2.0	1.8
Relatives	1.3	2.3	2.3
Persons living alone	11.2	12.3	6.3
All others	5.2	5.6	5.8

white population and 15 percent of the Hispanic population. Primarily because of these differences in family composition, the likelihood that unemployed black workers lived in a family with someone employed is lower than for other

groups. In 1982, about half of all unemployed blacks lived in a family that included an employed person, compared with about 60 percent of unemployed whites and 56 percent of unemployed Hispanics.⁴ □

—FOOTNOTES—

ACKNOWLEDGMENT: The author thanks Stella Cromartie, Kenneth Buckley, and George Methee of the Office of Employment and Unemployment Statistics for their technical assistance in the preparation of this article.

¹The source of data is the Current Population Survey, a monthly sample survey of households conducted by the Bureau of the Census for the Bureau of Labor Statistics. Data relate to the civilian noninstitutional population 16 years of age and over. A description of the survey appears in the Bureau of Labor Statistics publication, *Employment and Earnings*. Some of the series were seasonally adjusted for the first time for this article.

²For a discussion of the economic recovery during the first half of 1983, see Norman Bowers, "Employment on the rise in the first half of 1983,"

Monthly Labor Review, August 1983, pp. 8–14. A discussion of the 1981–82 downturn may be found in Michael A. Urquhart and Marillyn A. Hewson, "Unemployment continued to rise in 1982 as recession deepened," *Monthly Labor Review*, February 1983, pp. 3–12.

³A discussion of the labor market situation of women maintaining families may be found in Beverly Johnson and Elizabeth Waldman, "Most women who maintain families receive poor labor market returns," in this issue.

⁴Other articles in this issue focus on specific family types and compare the labor market experience of whites, blacks, and Hispanics in each family type.

Women paid less—why?

Remuneration is an area in which the difference between the position of men and women is particularly marked. Women are generally more numerous in the "low-paid" category; in France, for example, a survey carried out by the Centre for the Study of Incomes and Costs, published in 1981, showed that 33 percent of women workers and 13 percent of men in a representative sample were in this category. Furthermore, whether one takes the average or the median, women's earnings are lower than men's in almost all countries and in most sectors and occupations. In 1977, women's earnings in the industrialized countries amounted in real terms to between 55 and 80 percent of those of men.

These differences are caused by a variety of factors. Skill and education, experience and seniority as well as hours of work partly explain them; it is well known that women are numerous at the low-skill levels, that they often have little seniority because of interruptions in their careers owing to maternity or turnover in arduous jobs, and that they work fewer hours (limits on overtime imposed by legislation or family constraints). In industry the prohibition of night work, which inhibits their recruitment for certain posts, deprives them also of the wage differential for the night shift.

It will be noted also—and this is probably the main cause of wage differences—that women workers are unevenly distributed in the various sectors and occupational categories and levels. We have already drawn attention to the existence of a dual employment market assigning men and women to different jobs (paradoxically, it is sometimes because of the competence displayed by women in a precise technique that any access to better-paid jobs is difficult for them).

—MARIE-CLAIRE SEGURET

"Women and Working Conditions: Prospects for Improvement?" *International Labour Review*, May–June 1983, p. 301.

Married couples: work and income patterns

Differences in family income among whites, blacks, and Hispanics are rooted in the work patterns of husbands and wives

HOWARD HAYGHE

Today's married-couple families—whether white, black, or Hispanic—supply the U.S. labor force with most of its workers. By the turn of the century—a little less than two decades from now—most of these men, women, and children will still be alive. A clearer understanding of the current status of work patterns in white and minority families permits valuable insights into the nature of work and the family and needs of the family in the closing years of this century.

This article deals with white, black, and Hispanic married-couple families, highlighting their current work-income profiles and exploring briefly some of the major differences. More than 8 of 10 white families are married couples, as are 5 of 10 black families and 7 of 10 Hispanic families. Together these families supply about 71 percent of the Nation's workers. The data used were obtained primarily from supplemental questions to the March 1983 Current Population Survey.¹

Spouses at work

Husbands and wives in white, black, and Hispanic families² display considerable differences in age and education, which, in turn, influence their respective labor force participation patterns and income levels. In general, black families today are more likely to be multi-earner families than white or Hispanic married couples. Nonetheless, black married-couple families (like their Hispanic counterparts) have

lower incomes and a higher incidence of unemployment than white families.

About 87 percent of the Hispanic husbands were in the labor force in March 1983 compared with 79 percent of whites and 76 percent of blacks (table 1). On average, Hispanic husbands are substantially younger than their black or white counterparts. But, their relative youth (which implies inexperience for many) works against them by contributing to a higher unemployment rate than for whites (but about the same as for black husbands). The majority of black and white husbands have completed high school, whereas more than half of Hispanics left prior to completion.

Wives present a somewhat different labor force pattern and the underlying reasons for it are complex. Black wives historically have been more likely to be in the labor force than white wives, as shown by labor force participation rates for selected years:

	<i>Year</i>	<i>White</i>	<i>Black</i>
March 1950	22.8	37.0
March 1960	29.6	40.8
March 1970	39.7	52.5
March 1980	49.3	59.0

This gap continued in March 1983, when the participation rates for white and black wives were 51.0 and 60.8 percent, respectively.

The historically higher labor force participation rate of black wives reflects several interrelated elements, including the impact of economic problems stemming from many black husbands' longstanding labor market difficulties and

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Table 1. Selected characteristics of married-couple families by race and Hispanic origin, March 1983

Selected characteristics	White	Black	Hispanic
Married-couple families, total (in thousands)	45,273	3,504	2,456
As percent of all families	84.2	52.9	71.9
Husbands and wives			
Median age:			
Husband	45.4	43.8	38.9
Wife	42.5	41.2	35.9
Median years of school completed:			
Husband	12.7	12.2	11.5
Wife	12.7	12.2	11.6
Labor force participation rate: ¹			
Husband	79.4	76.3	86.9
Wife	51.0	60.8	46.9
Unemployment rate: ¹			
Husband	7.8	12.3	13.2
Wife	6.8	11.3	16.5
Presence of own children² under 18			
Married couples with children under 18, total (in thousands)	21,702	1,911	1,691
As percent of all married-couple families	47.9	54.5	68.9
Percent with:			
Children 6 to 17, none younger	53.1	52.1	43.1
Children under 6	46.9	47.9	56.9

¹Not seasonally adjusted.

²Own children include only never-married sons, daughters, stepchildren, and adopted children. All other children in the household are excluded.

the greater frequency of marital breakups among black families.³ Undoubtedly, the long history of black men's above average unemployment rates⁴ has influenced their wives' decisions to work outside the home. The following information from different periods illustrates this point.

During the sharp labor force buildup prior to World War II, Howard Meyers wrote, "The demand (for labor) . . . is restricted largely to young white males. . . . Negroes are apparently almost entirely barred from many lines of defense production."⁵ From the early 1960's: "Negro women in cities have always been able to get steadier jobs, usually as domestics, than men. This often meant that a black man was capable of being a biological father but not an economic father."⁶ Finally, Richard Freeman found that in the 1960's (especially after the passage of the Civil Rights Act of 1964) black women were much more able to improve their economic position than were black men, in part because of the relatively greater ease with which the women were hired into higher-paying occupations.⁷

While economic factors are among the principal reasons for black wives' high labor force participation, the cultural heritage of Hispanic women appears to lead, in part, to their relatively low participation rates. As stated by Morris J. Newman, Hispanics are "an amalgam of several historically and culturally distinct ethnic groups linked together by the shared background of Spanish colonialism in the New World."⁸ Part of this background is an emphasis on the homemaking and childbearing and rearing role of women.

Whether white, black, or Hispanic, wives' employment

status appears to be related to their husbands' status (table 2). While black wives' labor force participation is relatively high regardless of their husbands' employment status, all wives whose husbands were employed were more likely themselves to be employed than wives with unemployed husbands or husbands not in the labor force.

At first glance, this relationship may appear contrary to logical expectations. Shouldn't the wife try to replace earnings lost when the husband is jobless or out of the labor force? Indeed, this is the idea behind the additional-worker hypothesis of labor market activity during cyclical downturns.⁹ The reality, however, is that wives of unemployed husbands have lower participation rates and experience greater difficulty finding work than wives whose husbands are at work. For instance, among whites, 3 percent of the wives of employed husbands were jobless compared with 11 percent of those whose husbands were unemployed. For those not in the labor force, age is an obvious explanatory factor; close to 80 percent of the husbands who were not in the work force were 65 years old or over and retired, as were their wives.

Children. Conventional wisdom decrees that wives with preschool children are less likely to be in the labor force than wives whose youngest child is school age. While this is true for whites and Hispanics, it has never been true for black wives. Not only do black married mothers continue to have higher labor force participation rates than white or Hispanic mothers, there is also no appreciable difference in the black rates by age of youngest child, as shown below for March 1983:

	White	Black	Hispanic
Wives with children			
under 18	56.2	68.5	46.8
6 to 17, none younger	63.4	69.1	53.5
Under 6	48.2	67.8	41.9

Table 2. Employment status of wives by employment status of husbands, race, and Hispanic origin, March 1983

Employment status of wives	Husband's employment status		
	Employed	Unemployed	Not in labor force
White			
Percent of wives who were:			
Employed	55.3	50.1	19.1
Unemployed	3.4	11.1	1.1
Not in labor force	41.3	38.8	79.7
Black			
Percent of wives who were:			
Employed	63.1	48.9	30.8
Unemployed	7.0	16.9	1.2
Not in labor force	29.9	34.2	67.9
Hispanic origin			
Percent of wives who were:			
Employed	43.8	30.7	19.6
Unemployed	6.4	20.4	1.6
Not in labor force	49.8	48.9	78.8

Table 3. Children¹ in married-couple families by employment status of parents, race, and Hispanic origin, March 1983

Item	White	Black	Hispanic
Children under 18 years, total ² (in thousands)	40,814	3,769	3,722
Percent with:			
No employed parent	6.6	10.9	14.0
One employed parent or more	93.4	89.1	86.0
One employed parent only	48.8	42.2	54.2
Father	44.2	31.8	49.2
Mother	4.6	10.4	5.0
Two employed parents	44.3	46.9	31.8

¹Children are defined as "own" children and include only never-married sons, daughters, stepchildren, and adopted children. All other children in household are excluded.

²Includes children whose fathers are in the Armed Forces and living with the family on or off base in the United States. These fathers are treated as employed.

Because most fathers and just over half of mothers are in the labor force (94 and 54 percent, respectively, for whites, blacks, and Hispanics combined), the overwhelming majority of children have at least one employed parent (table 3). White children are somewhat more likely to have an employed parent than black or Hispanic children, reflecting the higher unemployment rates among black and Hispanic husbands and wives.

Income and poverty

Whatever the number of earners, the 1982 average annual income of married-couple families continued to be higher for whites than for blacks or Hispanics. Median income for black (\$14,200) and Hispanic (\$13,800) families was roughly 60 percent of median income for white families (\$23,500). For two-earner families where both spouses worked, the difference between whites and blacks was about 12 percentage points, and 21 points between whites and Hispanics (table 4). In addition, white married couples averaged more income from sources other than wages and salaries than either the black or Hispanic couples.¹⁰

These income differences are partly explained both by differences in weekly earnings of spouses (especially hus-

bands) and by the number of weeks husbands and wives worked during the year. As shown in the following text tabulation, usual weekly earnings (full-time wage and salary) were more than \$100 above the medians for blacks and Hispanics in 1982, while the differences among wives' earnings were considerably less:

	White	Black	Hispanic
Husbands	\$412	\$303	\$297
Wives	\$246	\$231	\$213

The effect of these differences in weekly earnings on differences in yearly family income is strengthened by the fact that 74 percent of white husbands who were employed at any time in 1982 worked full time all year compared with 68 percent of their black or Hispanic counterparts.

The size of the gap in husbands' average weekly earnings reflects the marked difference in their occupations. By comparison, wives, whose earnings are far more similar, tend to work in much the same occupations (table 5). White husbands are more often employed in managerial, professional specialty, and precision production occupations (which are usually relatively high-paying) than their black and Hispanic counterparts. In contrast, a higher proportion of the blacks and Hispanics work in lower paying jobs, such as operators and fabricators, service workers, and equipment handlers, cleaners, and helpers. Wives, whether white, black, or Hispanic, tend to be concentrated in the same occupational groupings, namely, technical, sales, and administrative support.

Poverty. In 1982, about 7 percent of the white couples had incomes below the poverty level¹¹ compared with 16 percent for blacks and 19 percent for Hispanics. These rates reflect the earnings and employment differences discussed above as well as the fact that black and Hispanic families have more children, on average, than white families.

The incidence of poverty was relatively low by race or Hispanic origin when both the husband and wife were earn-

Table 4. Number of earners, median family income, and poverty status in 1982 of married-couple families, by race and Hispanic origin, March 1983

Number and relationship of earners	White			Black			Hispanic		
	Total	Median income	Percent in poverty	Total	Median income	Percent in poverty	Total	Median income	Percent in poverty
Total (in thousands)	45,273	\$26,710	6.9	3,504	\$20,680	15.6	2,456	\$19,390	19.3
In percent	100.0	-	-	100.0	-	-	100.0	-	-
No earners	13.0	12,710	16.8	12.4	7,470	43.9	7.7	7,220	48.9
One earner	28.7	22,310	10.3	25.7	13,650	24.4	33.6	13,760	29.2
Husband	23.6	23,460	9.0	17.7	14,240	24.4	30.5	13,820	28.7
Wife	3.9	16,220	16.4	6.8	12,450	23.5	2.0	(¹)	(¹)
Other	1.2	21,090	15.7	1.2	(¹)	(¹)	1.1	(¹)	(¹)
Two earners or more	58.3	32,220	3.0	61.9	26,520	6.2	58.6	24,760	9.6
Husband and wife only	38.9	29,650	2.9	42.9	26,110	4.2	36.9	23,290	9.4
Husband, wife, and other(s)	11.6	41,980	1.6	11.6	32,900	3.2	5.5	33,190	6.2
Husband and other(s)	6.5	35,730	4.4	4.7	21,500	25.8	9.2	24,130	12.9
Other combinations	1.4	25,180	10.5	2.8	18,930	17.3	2.0	(¹)	(¹)

¹Median and percent not shown where base is less than 75,000.

Table 5. Occupation of employed husbands and wives, by race and Hispanic origin, March 1983

Occupations	Husbands			Wives		
	White	Black	Hispanic	White	Black	Hispanic
Total (in thousands)	33,152	2,348	1,908	21,766	1,881	1,041
In percent	100.0	100.0	100.0	100.0	100.0	100.0
Managerial and professional specialty	29.6	14.2	12.9	25.1	17.6	14.0
Executive, administrative, and managerial	16.2	8.2	8.3	9.0	4.9	6.1
Professional specialty	13.4	6.0	4.6	16.0	12.7	8.0
Technical, sales, and administrative support	19.4	14.3	13.5	47.4	34.6	39.3
Technicians and related support	2.5	2.1	1.9	3.2	3.6	1.9
Sales	12.1	3.8	6.3	12.5	6.4	10.2
Administrative support, including clerical	4.9	8.3	5.2	31.7	24.6	27.2
Service occupations	6.3	14.8	12.2	14.6	28.0	20.8
Private household	(¹)	—	—	1.0	4.9	2.4
Protective service	2.7	4.1	2.6	0.3	0.4	0.5
All other	3.6	10.7	9.6	13.3	22.7	18.0
Precision production, craft, and repair	22.1	16.1	23.3	1.9	2.9	3.7
Mechanics and repairers	8.1	6.1	8.2	0.3	0.2	0.5
Construction trades	7.5	5.5	7.7	0.1	0.2	0.4
Other precision production	6.4	4.6	7.4	1.5	2.5	2.9
Operators, fabricators, and laborers	17.6	35.9	31.4	9.6	16.3	20.4
Machine operators, assemblers, and inspectors	7.5	12.3	14.3	7.4	13.8	16.5
Transportation and material moving	6.7	13.7	9.1	0.9	1.1	0.9
Handlers, equipment cleaners, and helpers	3.5	9.9	8.0	1.3	1.3	2.9
Farming, forestry, and fishing	5.0	4.8	6.8	1.4	0.6	1.7

¹Less than 0.05 percent.

ers. However the poverty rate of white multiearner families was half that of similar black and one-third that of similar Hispanic families—3 percent for whites, 6 percent for blacks, and 10 percent for Hispanics in 1982. In contrast, among one-earner families the poverty rate for white families—at 10.3 percent—was 14 percentage points below that of similar black couples and 19 points below the Hispanic rate. Among families with no earners, the differences were 27 percent for whites and 32 percent each for blacks and Hispanics.

Although the incidence of poverty is reduced when there are earners in the family, many families have earners and still remain in poverty.¹² In fact, the majority of married couples with incomes below the poverty line in 1982 contained at least one earner at some time during the year. About 68 percent of white, 65 percent of black, and 80 percent of Hispanic married-couple families in poverty had income from the earnings of at least one member during the year. Moreover, about 1 of 4 families in poverty had two earners or more. □

—FOOTNOTES—

¹The Current Population Survey (CPS), conducted for the Bureau of Labor Statistics by the Bureau of the Census, is a monthly sample survey of some 60,000 households in the United States. The information obtained from this survey relates to the employment status of persons 16 years old and over in the civilian noninstitutional population. In the March survey, taken each year, supplemental information is obtained annually regarding earnings and income as well as the work experience of individuals in the prior year. Data on persons from the March surveys are tabulated by marital and family status.

Because it is a sample survey, estimates derived from the Current Population Survey may differ from the actual counts that could be obtained from a complete census. Therefore, small estimates or small differences between estimates should be interpreted with caution. For a more detailed explanation, see the Explanatory Note in *Marital and Family Patterns of Workers: An Update*, Bulletin 2163 (Bureau of Labor Statistics, 1983).

²A family consists of two persons or more who are related by blood or marriage and living together in the same household. Relationship of family members is determined by their relationship to the reference person or householder, that is, the person in whose name the housing unit is owned or rented.

³See Gordon Green and Edward Welniak, "Changing families, shifting incomes," *American Demographics*, February 1983, pp. 40–43.

⁴See *Perspectives on Working Women: A Databook*, Bulletin 2080 (Bureau of Labor Statistics, 1980), table 65.

⁵See Howard B. Meyers, "Effects of the National Defense Program on

Unemployment and Need" (address presented at the National Conference on Social Work, Atlantic City, N.J.). Release dated June 5, 1941, p. 7.

⁶Michael Harrington, "The Economics of Protest," in Arthur M. Ross and Herbert Hill, eds., *Employment, Race and Poverty* (New York, Harcourt, Brace and World, 1967), p. 250.

⁷Richard B. Freeman, "Changes in the Labor Market for Black Americans, 1948–72," *Brookings Papers on Economic Activity*, 1: 1973, pp. 67–131.

⁸See Morris J. Newman, "A profile of Hispanics in the U.S. work force," *Monthly Labor Review*, December 1978, pp. 3 and 5.

⁹See, for example, W. G. Bowen and T. A. Finegan, *The Economics of Labor Force Participation* (Princeton, N.J., Princeton University Press, 1969), pp. 147–51.

¹⁰See *Money Income of Households, Families and Persons in the United States: 1981, Current Population Reports*, Series P-60, No. 137 (Bureau of the Census, 1982), table 23.

¹¹In accordance with the poverty index adopted by a 1969 Federal interagency committee, families are classified as being above or below the low income level. The poverty threshold for a family of four in 1982 was \$9,862. For further details, see *Money Income and Poverty Status of Families and Persons in the United States: 1982, Current Population Reports*, Series P-60, No. 140 (Bureau of the Census, 1983), p. 295.

¹²For information relating employment problems and economic status see *Linking Employment Problems to Economic Status*, Bulletin 2169 (Bureau of Labor Statistics, 1983).

Most women who maintain families receive poor labor market returns

The majority of these women have a strong commitment to the labor force, but have lower average educational attainment and earnings, bringing them closer to poverty with each additional child

BEVERLY L. JOHNSON AND ELIZABETH WALDMAN

Women who maintain their own families¹ are considerably more likely to work or look for work today than in the past. But their historical pattern of marginal earnings and high unemployment persists, keeping the economic status of their families well below that of the majority of American families.

The results of a March 1983 nationwide survey² reveal a continuation of the multiple problems that hinder many women who support families from being more competitive in the marketplace. Prominent among these problems are lower average educational attainment and relatively higher proportions with children to raise.

Overall picture

In March 1983, 9.8 million families had as their principal support women who were divorced, separated, widowed, or never married. These families accounted for 16 percent of all families in the United States, up 5 percentage points from 1970. Sixty percent of women maintaining families were labor force participants, compared with 53 percent in 1970, and their numbers in the labor force doubled over the 13-year period (table 1).

The reasons for this increased labor market activity have a great deal to do with the dramatic demographic and social

changes of the period, perhaps the most crucial being the movement of the baby-boom generation of the 1950's and early 1960's into the working-age population. This movement was accompanied by record numbers of marriages and,

Table 1. Selected characteristics of women maintaining families, March 1970, 1975, 1980, and 1983

[Numbers in thousands]

Characteristic	Civilian noninstitutional population				Labor force participation rate			
	1970	1975	1980	1983	1970	1975	1980	1983
Total women maintaining families	5,580	7,316	9,009	9,828	52.9	54.4	59.7	59.6
Never married	610	932	1,453	1,823	57.4	53.6	55.6	55.8
Separated	1,324	1,707	1,805	1,831	53.8	55.0	60.4	62.3
Widowed	2,389	2,539	2,588	2,559	38.4	37.8	38.3	34.3
Divorced	1,258	2,139	3,164	3,615	77.3	73.9	78.6	78.2
Median age	48.2	43.5	41.4	41.1	—	—	—	—
With no children ¹ under age 18	2,652	2,861	3,291	3,788	45.8	45.7	46.9	47.9
With children under age 18	2,928	4,456	5,718	6,040	59.4	60.0	67.0	67.0
6 to 17, only	1,815	2,661	3,638	3,746	67.0	66.3	74.0	74.2
Under age 6	1,112	1,795	2,080	2,294	46.9	50.6	54.9	55.2
White	4,185	5,254	6,302	6,783	53.4	55.7	62.1	60.5
Black	1,349	1,967	2,537	2,808	50.9	51.2	54.0	57.1
Hispanic	(²)	471	637	800	(²)	43.5	50.7	49.0

¹Children are defined as "own" children of the family. Included are never-married daughters, sons, stepchildren, and adopted children. Excluded are other related children such as grandchildren, nieces, nephews, cousins, and unrelated children.

²Data not available.

NOTE: Because of rounding, sums of individual items may not equal totals. Data for 1975 have been revised since initial publication.

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in turn, a soaring divorce rate.³ Thus, by the time the 1980's began, divorcees—who have the highest labor force participation rate of any marital category of women—had replaced widows (who have the lowest) as the largest group of women maintaining families. In addition, a sharp rise in childbearing among single women helped increase the number of one-parent families.

In March 1983, more than three-fifths of the women maintaining families were parents with children under age 18 in the home. Labor force participation rates show these single parents had a strong commitment to the labor force. Seventy-five percent were in the work force when their youngest child was school age (6 to 17 years), as were 55 percent of those with preschoolers (under age 6).

Once in the labor market, however, the female single parent often had a difficult time finding a job, especially if she had at least one preschool child. In March 1983, the unemployment rate for mothers with preschoolers was 23 percent, compared with 15 percent for mothers whose youngest child was of school age (table 2). The unemployment rate for mothers in married-couple families was less than half that of mothers maintaining families.

When unemployed, women maintaining families were far less likely than other householders to be living with another relative who was employed full time. In the first quarter of 1983, for example, only 9 percent of all unemployed women maintaining families had someone in their family who had a full-time job. This compared with 16 percent of all jobless men maintaining families without a spouse and about 41 percent of all unemployed husbands.

The workplace

Most employed women maintaining families worked at full-time jobs—83 percent in March 1983. Those age 25 to 54 were more likely to be working full time (86 percent) than either younger (72 percent) or older women (73 percent). Obviously, these high full-time proportions represent a serious commitment on their part to market work.

Like most employed women, the largest proportion of those maintaining families were in administrative support jobs (table 3). This was the case for all marital groups. Divorced women (because they were younger and had more years of schooling, on average) were more likely than other women maintaining families to be in managerial and professional jobs and less likely to be in service occupations.

Most of today's better paying jobs require at least a high school diploma, and many professional fields require a college degree. Although working women maintaining families have been completing more formal schooling in recent years, a high proportion had not completed high school—23 percent, compared with 15 percent of working wives.

Despite some movement into professional and managerial jobs between 1970 and 1983, particularly by divorcees, most employed women maintaining families have tended to remain in the generally lower paying or lesser skilled jobs

Table 2. Labor force status of women maintaining families, by presence and age of youngest child, and marital status, March 1983

(Numbers in thousands)

Labor force status	Total	With no own children ¹ under age 18	With children ¹ under age 18		
			Total	Children age 6 to 17 only	Children under age 6
Women maintaining families	9,828	3,788	6,040	3,746	2,294
In labor force	5,861	1,815	4,047	2,780	1,266
Participation rate	59.6	47.9	67.0	74.2	55.2
Unemployed	831	131	700	406	294
Unemployment rate	14.2	7.2	17.3	14.6	23.2
Not in labor force	3,966	1,973	1,993	966	1,028
Never-married	1,823	574	1,248	446	802
In labor force	1,018	372	646	292	353
Participation rate	55.8	64.8	51.8	65.5	44.0
Unemployed	213	33	180	66	115
Unemployment rate	20.9	8.9	27.9	22.6	32.6
Not in labor force	805	202	603	154	449
Separated	1,831	365	1,466	828	637
In labor force	1,141	228	913	573	339
Participation rate	62.3	62.5	62.3	69.2	53.2
Unemployed	217	37	180	100	80
Unemployment rate	19.0	16.2	19.7	17.5	23.6
Not in labor force	690	137	553	255	298
Widowed	2,559	2,025	534	463	71
In labor force	877	587	290	253	37
Participation rate	34.3	29.0	54.3	54.6	(²)
Unemployed	77	32	44	32	12
Unemployment rate	8.8	5.5	15.2	12.6	(²)
Not in labor force	1,682	1,438	244	210	34
Divorced	3,615	824	2,792	2,008	784
In labor force	2,826	628	2,198	1,661	537
Participation rate	78.2	76.2	78.7	82.7	68.5
Unemployed	324	29	295	208	87
Unemployment rate	11.5	4.6	13.4	12.5	16.2
Not in labor force	790	196	594	347	246

¹Children are defined as "own" children of the family. Included are never-married daughters, sons, stepchildren, and adopted children. Excluded are other related children such as grandchildren, nieces, nephews, cousins, and unrelated children.

²Rate not shown where base is less than 75,000.

NOTE: Because of rounding, sums of individual items may not equal totals.

within a broad occupation group. Their relatively poor occupational standing was reflected by their lower full-time wage and salary earnings when compared with husbands or men maintaining families. In the first quarter of 1983, the median weekly earnings for female householders were \$256, compared with \$400 for husbands or male family householders.⁴

Only 30 percent of the wage-earning families maintained by women were multiple-earner families, and their median weekly earnings were \$440. In contrast, 56 percent of all married-couple families with earners were in the multiple-earner category, and their median weekly earnings were \$629.

Although weekly aggregate earnings of families maintained by women were relatively low, annual income for families in which the woman herself worked was roughly twice as high as for families in which the householder did not work. For example, in 1982, median family income was \$14,580 when the woman was an earner at some time during the year and \$7,050 when she was not.

Table 3. Educational attainment and occupational distribution of women maintaining families by marital status, race, and Hispanic origin, March 1983

Item	Total	Marital status				Race and Hispanic origin		
		Never-married	Separated	Widowed	Divorced	White	Black	Hispanic
Educational attainment								
Total in labor force:								
Number (thousands)	5,861	1,018	1,141	877	2,826	4,104	1,603	39.2
Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than 4 years high school	22.9	23.8	28.0	33.8	17.1	19.7	31.2	48.5
4 years high school only	46.6	44.2	47.1	42.0	48.7	47.9	43.5	33.7
1 to 3 years college	18.3	20.0	15.3	14.7	20.1	18.4	18.6	11.5
4 years college or more	12.2	12.0	9.5	9.7	14.2	14.0	6.7	6.4
Occupation								
Total employed:								
Number (thousands)	5,031	804	924	801	2,502	3,656	1,255	340
Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Managerial and professional specialty	19.8	19.3	15.0	18.6	22.2	21.7	14.4	12.4
Executive, administrative, and managerial	8.4	7.0	6.2	9.5	9.3	9.4	5.6	7.1
Professional specialty	11.5	12.3	8.9	9.2	12.9	12.3	8.8	5.3
Technical, sales, and administrative support	41.0	39.1	39.4	37.2	43.4	44.8	29.8	36.5
Technicians and related support	3.1	2.7	2.4	1.7	3.8	3.1	2.7	2.4
Sales occupations	9.4	7.8	8.9	11.4	9.5	11.1	4.5	7.1
Administrative support, including clerical	28.5	28.5	28.0	24.0	30.1	30.6	22.6	27.1
Secretaries, stenographers, and typists	10.1	8.8	9.2	8.4	11.3	11.5	6.4	7.9
Financial records processing	4.3	4.9	4.3	2.7	4.6	4.9	2.5	2.4
Other	14.1	14.8	14.5	12.9	14.2	14.2	13.7	16.8
Service occupations	22.2	25.0	28.6	28.8	16.9	17.8	35.9	25.0
Private household	2.6	3.2	4.2	4.7	1.0	1.8	5.0	5.0
Food	6.8	5.1	8.1	8.9	6.1	6.4	7.4	6.5
Health	5.3	6.5	9.1	4.6	3.8	3.1	12.2	2.9
Cleaning	3.9	5.7	4.0	7.4	2.2	2.6	7.7	6.5
Personal	3.0	3.7	2.5	2.6	3.1	3.2	2.8	3.8
Other service	0.6	0.8	0.7	0.6	0.7	0.7	0.8	0.3
Precision production, craft, and repair	2.5	1.9	2.4	1.7	2.9	2.8	1.5	3.5
Operators, fabricators, and laborers	13.9	14.3	14.1	12.4	14.1	12.3	18.1	21.2
Machine operators, assemblers, and inspectors	11.2	12.6	10.8	10.1	11.2	10.1	14.1	17.6
Transportation and material moving	0.9	0	1.4	0.9	1.0	0.6	1.6	2.1
Other	1.8	1.7	1.9	1.4	1.9	1.6	2.4	1.5
Farming, forestry, and fishing	0.6	0.5	0.5	1.1	0.4	0.7	0.2	1.2

Situation for minorities

As of March 1983, about 70 percent (6.8 million) of all women maintaining families were white; 29 percent (2.8 million) were black, and fewer than 10 percent (800,000) were of Hispanic origin (virtually all of whom were also included in the white racial category). Examining each race-ethnic category separately and making labor force participation and income comparisons brings the situation for minority families into sharper focus.

On average, the black women had more children under age 18 and less education than the white women. Black women maintaining families (as well as those of Hispanic origin) have lower median earnings, lower labor force participation rates, and higher unemployment rates than the white women. Also, black and Hispanic families maintained by women were even less likely than similar white families to have more than one earner, probably because they were less apt to have another member of working age in the home.

Furthermore, a larger share of white than black or Hispanic women were divorced, and a smaller proportion had never married. And, as shown earlier, divorced householders have much higher participation rates than the never-married. Thus, in March 1983, the labor force participation

rate for white female householders was 60 percent, compared with 57 percent for blacks and 49 percent for Hispanics. Another factor is that 1 of 8 black and Hispanic householders was under age 25, compared with 1 of 13 whites. Younger women, in the early stages of labor force entry, often have not acquired the skill and experience necessary to hold many of today's better paying jobs. In addition, about half of the Hispanic women householders and one-third of the black had not completed high school, compared with only one-fifth of the whites. Moreover, the occupational distributions for these three groups of women mirror their educational attainment; about 22 percent of employed white householders were professional and managerial workers, compared with 14 percent for black, and 13 percent for Hispanic women. Blacks and Hispanics were heavily clustered in service and operative jobs which require less formal education and training and pay less money. Finally, the higher participation rate of white women may also reflect the smaller average size of their families, as well as the lower proportion with children under 6 years of age.

Unemployment rates were much higher among black women maintaining families (21.7 percent) than white (10.9

Table 4. Labor force status of white, black, and Hispanic origin women maintaining families, by presence of children and marital status, March 1983

[Numbers in thousands]

Race, Hispanic origin, and marital status	Total			With children ¹ under age 18			With no children ¹ under age 18		
	Population	Labor force participation rate	Unemployment rate	Population	Labor force participation rate	Unemployment rate	Population	Labor force participation rate	Unemployment rate
White women, total	6,783	60.5	10.9	3,959	70.3	13.4	2,824	46.8	5.6
Never married	842	53.6	12.4	442	47.5	22.4	399	60.4	3.7
Separated	1,117	62.1	16.9	918	62.0	16.3	200	62.5	19.2
Widowed	1,963	34.6	7.4	376	59.0	12.6	1,588	28.8	4.8
Divorced	2,861	79.7	9.9	2,224	80.0	11.5	637	78.3	4.0
Black women, total	2,808	57.1	21.7	1,923	60.3	25.7	885	50.2	11.3
Never married	940	57.0	28.2	785	54.0	30.4	155	72.3	19.6
Separated	657	62.1	22.8	504	62.7	25.3	153	60.1	14.1
Widowed	536	32.5	13.8	132	39.4	(²)	404	30.2	8.2
Divorced	675	71.9	16.5	502	72.9	20.2	173	68.2	4.2
Hispanic women, total	800	49.0	13.5	585	48.2	16.0	214	51.4	6.4
Never married	193	47.2	14.3	136	33.8	(²)	57	(²)	(²)
Separated	255	39.2	20.0	209	38.8	21.0	46	(²)	(²)
Widowed	123	35.0	(²)	51	(²)	(²)	72	(²)	(²)
Divorced	229	69.0	9.5	189	68.3	9.3	40	(²)	(²)

¹Children are defined as "own" children of the family. Included are never-married daughters, sons, stepchildren, and adopted children. Excluded are other related children such as grandchildren, nieces, nephews, cousins, and unrelated children.

²Rate not shown where base is less than 75,000.

percent) and Hispanic women (13.4 percent) (table 4). This reflects, in part, the higher concentration of never-married mothers among black female householders. Typically, never-married mothers have higher jobless rates than mothers of other marital status.

Annual median income of white families maintained by women (\$13,145 in 1982), while much lower than that of other types of white families, was far above the levels of the black (\$7,489) and Hispanic (\$7,611) families. This pattern persisted regardless of the presence of children. Part of the difference stems from the fact that earnings of black women represented a larger share of their family income than those of the white women—77 versus 70 percent. Also contributing to this situation was the larger share of divorced white women who received child support or alimony payments.⁵ Moreover, as mentioned earlier, white families maintained by women were more likely to have at least two earners than either the black or Hispanic families.

Poverty and children

Because average income among families maintained by women is low—whether they are in or out of the paid work force—proportionately more live below the poverty line⁶ than other families. In 1982, more than 1 of 3 families

maintained by women were poor, compared with 1 of 13 other families. Although the percentages of black and Hispanic families maintained by women in poverty were much greater than for white families of the same type, they all greatly exceeded the proportions for other family groups:

	Families maintained by women	Married-couple families	Families maintained by men
Total	36.9	7.6	14.7
White	28.9	6.9	12.6
Black	56.1	15.6	25.0
Hispanic	55.5	19.3	18.4

For families in which the female householder had earnings at some time during 1982, about 1 of 4 were in poverty, compared with more than 1 of 2 of the families in which the householder had no earnings. These differences were even wider for families with children under age 18. When the mother had earnings, 29 percent of their families had incomes below the poverty level; when she did not, 88 percent were poor. Moreover, regardless of the mother's earner status, the incidence of poverty increased with each additional child in the home—from 37 percent when one child was in the home to 85 percent when four or more children were present. □

FOOTNOTES

¹The terminology "women maintaining families" or "female family householder" is defined as a never-married, divorced, widowed, or separated woman with no husband present and who is responsible for her family. These terms have replaced the phrase "female-headed families" used in earlier reports in this series.

²Unless otherwise indicated, data in this report relate to the civilian noninstitutional population 16 years and over and are based primarily on information from supplementary questions in the March 1983 Current Population Survey. For the most recent report on this subject, containing data for March 1981, see Beverly L. Johnson and Elizabeth Waldman,

"Marital and family patterns of the labor force," *Monthly Labor Review*, October 1981, pp. 36–38.

Sampling variability may be relatively large in cases where numbers are small, and small differences between estimates or percentages should be interpreted with caution. For further information on reliability of data, see the Explanatory Note in *Marital and Family Patterns of Workers: An Update*, BLS Bulletin 2163 (Bureau of Labor Statistics, 1983), pp. A-5–A-7.

³The divorce rate has been rising since the mid 1960's. Between 1966 and 1981, the rate increased from 2.5 per 1,000 population to 5.3 per

1,000. For more details, see "Advance Report of Final Divorce Statistics, 1980," *Monthly Vital Statistics Report* (Washington, U.S. Department of Health and Human Services, June 27, 1983), table 1, p. 4.

⁴See, "Earnings of workers and their families: First quarter 1983," USDL News Release, 83-201, May 2, 1983 (U.S. Bureau of Labor Statistics).

⁵See Allyson Sherman Grossman and Howard Hayghe, "Labor force activity of women receiving child support," *Monthly Labor Review*, November 1982, pp. 39-41. Also see *Divorce, Child Custody, and Child*

Support, Current Population Report Series, 84 (Washington, U.S. Bureau of the Census, 1981), p. 4.

⁶Families are classified as being above or below the low income level according to the poverty index adopted by a 1969 Federal Interagency Committee. The poverty thresholds are updated every year to reflect changes in the Consumer Price Index. The poverty threshold for a family of four was \$9,862 in 1982. For further details, see *Money Income and Poverty Status of Families and Persons in the United States: 1982*, Current Population Report Series P-60, No. 140 (Washington, U.S. Bureau of the Census, 1983), pp. 3, 4, and 29.

Work schedules: a need for flexibility

The conditions of work of men and women differ in respect of hours of work. This is partly due to the constraints of life outside work and partly to legislation.

Although people are beginning to challenge the idea that women have to assume greater family responsibilities than men, in practice they still bear the brunt of the housework and caring for the children. We have already spoken of the preponderance of married women and mothers among part-time workers; similarly, it is because of family responsibilities that women often do less overtime.

Furthermore, while it is rare for the labor legislation to provide for shorter normal working hours for women than for men, it frequently limits more strictly the amount of overtime they can be called upon to perform. Additional leaves and breaks are sometimes provided for women, either in the light of the number of children they have, or simply because they are women (in the German Democratic Republic, for example, one day off a month for housekeeping for women aged 40 or over or for married women).

—MARIE-CLAIRE SEGURET

"Women and Working Conditions: Prospects for Improvement?" *International Labour Review*, May-June 1983, pp. 304.

Child-care services: a national picture

As more mothers hold jobs, the demand for child-care services continues to grow—especially for infant and toddler care—and is exacerbated by brief maternity leaves

SHEILA B. KAMERMAN

In 1983, for the first time, half of all mothers with children under age 6 were in the labor force.¹ Out of a cohort of 19.0 million children under age 6, 47 percent had working mothers. In the near future, the *majority* of preschoolers will very likely have working mothers, as most school-age children already do. How preschool children are cared for while their mothers work is something that relatively little is known about, although what is known suggests a quite complicated picture.

What is the picture today of child-care services for preschool aged children? To help the reader visualize the picture, four questions are addressed:

- Where are the children of working parents being cared for?
- What is known about the kinds of child-care services and arrangements that now exist?
- What is known about the quality of care now provided and what is happening to it?
- What are the current trends, developments, and emerging issues in the child-care services field?

For the purposes of this article, child-care services will include: family day care and center care, public and private nursery school and prekindergartens, Head Start centers,

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all-day care, part-day care, and after-school care. (Non-monetized care by relatives and brief, occasional babysitting are not included.) The discussion is about relatively regular care or attendance: a specific number of hours per day and regular days per week of provision—in families and group arrangements—under both educational and social welfare auspices.

Types and amount of available child care

Unfortunately, in addition to the child-care picture not being very clear, it is not very complete. National data are not collected in any systematic fashion on: children in out-of-home care during the day; child-care arrangements used while parents work; or child-care service programs. To study what exists and who uses which type of care, one must piece together different, sometimes not fully comparable data, collected by different sources at different times.

In providing an overview of child-care services for preschool aged children, the types of services can be distinguished by the following:

- The age of the child:
 - infant and toddler care (0 to 2-year-olds)
 - preschooler care (3- to 5-year-olds)
- The locus of care:
 - in own home
 - in a relative's home
 - in a nonrelative's home
 - in a group facility (center or school)

- The auspice of care:
 - education (nursery school, prekindergarten, kindergarten)
 - social welfare (day-care center)
- The source of funds:
 - direct and indirect public subsidy (for example, public grants of monies to a provider or a tax benefit such as the child-care tax credit)
 - private subsidy
 - employer subsidy; parent fees

Preschoolers. Although there are no precise figures concerning the numbers of children in out-of-home care, by age of child and type of care, the most complete data to date are those on preschool children aged 3 to 5. However, even here estimates must be used.

The most recent national survey of day-care centers was completed by Abt Associates in 1977;² the numbers are known to have grown substantially since then. Moreover, these data do not include programs under educational auspices: nursery schools, prekindergartens, and kindergartens. These are the largest single type of child-care services for children of this age and the most rapidly growing component among child-care services for this age group.

The most currently published consumer data on 3- and 4-year-old children of working mothers are from a 1977 Current Population Survey (CPS) conducted by the Bureau of the Census.³ Only data on children *under age 5* and on the *youngest* child in the family were included. However, because the survey was carried out in June, when many schools are closed, children in group care programs are significantly underreported. For example, fewer than 21 percent of children of this age with mothers who worked full time in 1977 were reported as enrolled in group care, as contrasted with 31 percent of *all* children this age in 1976, according to Census Bureau school enrollment data,⁴ and 37 percent in 1980, as cited by the National Center for Educational Statistics.⁵ (See tables 1 and 2.) Furthermore, the proportion of youngsters enrolled in preschool programs was significantly higher when their mothers worked (44

percent). Moreover, these data do not report multiple modes of care: the "packages" of child-care arrangements which are most frequently used by working mothers.⁶ Such "packages" include some combination of a preschool program, family day care, and relative care; they may involve four or more different care givers during an average week. More extensive child-care data were collected in the 1982 Census Bureau's national fertility survey, but these data had not yet been published when this article was prepared.

Using 1979 school enrollment data⁷ and data from the 1977 Abt supply study of day-care enrollment, it is found that almost two-thirds of *all* 3- to 5-year-olds and more than 70 percent of those with working mothers are in some form of group child-care program. These numbers are made up of the following: ninety-three percent of all 5-year-olds were in nursery school, kindergarten, or first grade in 1979. Thirty-five percent of all 3- to 4-year-olds were in nursery school or prekindergarten. A growing number of these preschool programs are full day; the proportion of 3- to 5-year-olds in a full-day program doubled during the 1970's, from 17 percent in 1970, to 34 percent in 1980. By 1980, 37 percent of 3- to 4-year-olds were in preprimary programs. Although kindergarten enrollment for 5-year-olds is about the same whether or not mothers work (almost all 5-year-olds are in preschool or primary school), enrollment rates for 3- to 4-year-olds are significantly higher when mothers are in the labor force (44 percent, compared with 31 percent in 1980). All-day enrollment is, of course, far higher for children with full-time working mothers. Although these programs may be valued for their educational content, they are often used because they fulfill a needed child-care function.

Kindergarten enrollment increased by almost one-third between 1967 and 1980 (from 65 to 85 percent). However, the increase in nursery school enrollment has been even more dramatic, doubling in numbers during the 1970's and more than doubling as a proportion of 3- to 4-year-olds enrolled (from 16 percent in 1969 to 37 percent in 1980).

Moreover, not only are children of working mothers more likely to be enrolled in preschool programs, but the enrollment rates are even higher when mothers have larger incomes and more education. Fifty-three percent of 3- to 4-year-old children in families with median or higher incomes attended a preschool program in 1982, as contrasted with only 29 percent of those in lower income families. As noted, enrollment rates increase as mothers' education levels rise, and increase still more when those mothers are employed. Only for children whose mothers are college graduates is there no difference between those with working and those with nonworking mothers. For example, about half of such 3-year-olds and 72 percent of such 4-year-olds were in a preschool program in 1982.⁸

Given these data, one could argue that not only is there growing use of preschool as a child-care service for the 3-, 4-, and 5-year-olds with working mothers, but there is especially high use by affluent, educated, working families.

Table 1. Population of preschoolers, preprimary school enrollment, and labor force status of mother by child's age, 1980

Child's age (in years)	Total (in millions)	Enrollment		Percent with mothers in labor force
		Numbers (in millions)	Percent of total	
3 to 5	9.3	4.9 ¹	53 ¹	57
5	3.1	2.6	84 ²	85
3 to 4	6.2	2.3	37	43
4	3.1	1.4	46	52
3	3.1	.9	29	34

¹Preprimary programs only. An additional number are enrolled in primary school (about 3 percent of cohort).

²An additional 9 percent are enrolled in primary school.

NOTE: Data are for 50 States and District of Columbia.

SOURCE: National Center for Education Statistics, *Preprimary Enrollment 1980* (Washington, D.C., U.S. Department of Education, 1982).

Table 2. Preprimary school enrollment by child's age and labor force status of mother, 1980

[Numbers in thousands]

Labor force status of mother	Total		3-year-olds		4-year-olds		5-year-olds	
	Enrolled	Enrolled all day	Enrolled	Enrolled all day	Enrolled	Enrolled all day	Enrolled	Enrolled all day
All children, 3 to 5 years	4,878	1,551	857	321	1,423	467	2,598	763
With mother in labor force	2,480	1,002	497	260	755	332	1,229	413
Employed full time	1,445	713	292	198	457	260	696	255
Employed part time	811	196	163	42	245	44	402	111
Unemployed	225	94	41	20	53	28	131	46
With mother not in labor force	2,266	491	339	50	628	117	1,299	325
Keeping house	2,105	439	309	37	582	102	1,214	300
Other	85	15	15	3	23	3	47	9
No mother present	131	57	21	13	39	19	70	26
	Enrolled as percent of age group							
All children, 3 to 5 years	52.5	16.7	27.3	10.2	46.3	15.2	84.7	24.9
With mother in labor force	57.1	23.1	34.4	18.0	51.9	22.8	85.2	28.6
Employed full time	57.4	23.3	35.4	24.0	52.5	29.9	84.6	31.0
Employed part time	59.6	14.4	37.2	9.6	53.7	9.6	86.5	23.9
Unemployed	48.5	20.3	22.8	11.1	41.1	21.7	85.1	29.9
With mother not in labor force	48.9	10.6	21.5	3.2	41.5	7.7	84.5	21.1
Keeping house	48.5	10.1	20.9	2.5	40.2	7.2	83.9	20.7
In school	63.0	29.5	37.2	(¹)	56.1	(¹)	95.1	(¹)
Other	51.1	9.0	26.4	(¹)	38.3	(¹)	95.9	(¹)
No mother present	42.2	12.5	17.8	10.8	38.6	18.8	77.8	28.9

¹Base too small for presentation of percentage.

NOTE: Data are for 50 States and District of Columbia. Details may not add to totals because of rounding.

SOURCE: National Center for Education Statistics, *Preprimary Enrollment, 1980* (Washington, D.C., U.S. Department of Education, 1982).

Because most of these programs are private and relatively expensive, such high use by the more affluent raises serious questions about the consequences for those children in lower income families (below median income) without access to such programs, whether or not their mothers work.

According to the Abt survey, in addition to those children in preschool programs, about 10 percent of the cohort (900,000) were in day-care centers (most were 3- or 4-year-olds). Thus, there seems to be a total of 54 percent of the 3- and 4-year-olds with working mothers in some kind of group care for some part of the day. This figure is likely to be higher because nearly a half million children are estimated to have been enrolled in Title XX funded centers in 1981, a significant increase over the 1977 figures.⁹ (And 10 States were not included in the 1981 figure because they did not provide data.) Sixty-five percent of these children were 3- to 5-year-olds (and more than half were age 3 or 4); and almost all had working parents (these figures may have decreased in the past year). Also, Head Start serves nearly 400,000 children, largely 3- and 4-year-olds.

Federally funded (Title XX) centers have increased in numbers, too: there were an estimated 11,342 in 1981, a significant jump from the 8,100 identified in the Abt survey.¹⁰ Some of these centers may have closed in the past year as a consequence of cutbacks in funding, but no specific data on closings are available as of this writing. Head Start programs have also expanded since 1977 and about one-fifth are full-day programs. More than 40 percent of the day-care centers in the Abt survey were proprietary or for-profit establishments. Both the numbers and the proportion of proprietary child-care services have grown significantly since then. Because most of the large (multicenter) for-profit

child-care service companies did not receive Title XX money in 1981, these numbers are additive rather than overlapping.

In addition, about 42 percent of 3- to 4-year-olds whose mothers worked full time in 1977 (and 25 percent of those whose mothers worked part time) were cared for in someone else's home, usually in a nonrelative's home (family day care).¹¹ There is a significant, if unknown, overlap between the children in preschool programs and those cared for in a home, be it by a relative or nonrelative, part of the child-care "packaging" mentioned above, and particularly important for children whose mothers work longer than the preschool or school hours. About 100,000 children were in federally funded family day-care homes in 1981.¹² By far, most children in family day care (about 90 percent of the more than 6 million children estimated to be in family day care for 10 hours or more per week in 1975) were in informal, unregulated care.¹³ About 6 percent were in licensed care, including 2 percent in care provided in a home but under the sponsorship of an umbrella agency. However, most of these children were under age 3.

Infants and toddlers. As difficult as it is to estimate coverage and type of care provided for preschoolers, the data on infant and toddler care are far less adequate. A planned national survey of infant care, to be carried out by Abt, was cancelled. The much-cited National Consumer Day Care Study was poorly designed and inadequately analyzed. According to the 1977 Current Population Survey, the primary care arrangement for children under age 3 was family day care, usually in the home of a nonrelative.

Estimating from the CPS data, more than one-third of the children with working mothers were in either family day

care or group care in 1977. More specifically, about one-third of those under age 3 with full-time working mothers and 17 percent of those with part-time working mothers were in family day care; and more than 9 percent of those with full-time working mothers and 5.5 percent of those whose mothers worked part time were in group care. Infant and toddler care has been growing rapidly since the mid-1970's; thus, the coverage data are undoubtedly higher today.

The following rounds out this picture of how children are cared for while parents (especially mothers) are in the labor force:

- A small proportion of babies with working mothers are cared for, albeit briefly, by mothers on maternity leave. Fewer than 40 percent of working mothers are entitled to some paid leave at the time of childbirth, usually for about 6 to 8 weeks, and a somewhat larger group may remain home on an unpaid but job-protected leave for 3 or 4 months.¹⁴
- Some parents, especially those with preschool aged children, work different shifts in order to manage child care. Although this method of care has received very little attention thus far, researchers using three different data sets (the Current Population Survey, the Panel Study of Income Dynamics, and the Quality of Employment Survey) have found that this may be a more significant pattern of work by parents with young children than suspected.¹⁵
- A very few employers, largely hospitals, provide onsite child-care services (about 230 hospitals; about 50 employers), and a few others subsidize payment of care.¹⁶

Child-care quality: programming and standards

More than half of all nursery schools are private, 66 percent. Eighty-eight percent of the kindergartens are public. There are limited national data available on these programs. On the other hand, a much more extensive picture exists regarding the more than 11,000 federally funded day-care centers that existed in the fall of 1981. This type of center is discussed here.

In early 1980, the Department of Health and Human Services issued proposed day-care regulations concerning group size, staff-to-child ratios, training qualifications for care givers, nutrition, health care, parent participation, and social services, to become effective in October. In the meantime, the Congress, in its Omnibus Budget Reconciliation Act of 1980, delayed the effective date of these proposed regulations. Before the proposals could become effective, the Social Services Block Grant Act was enacted. Among other things, this Act amended Federal requirements and standards regarding Title XX day-care centers. This meant that State and local standards, where they existed, were in effect. (Such standards are likely to be below those set by the Federal Government.)

The Omnibus Budget Reconciliation Act mandated the

Department of Health and Human Services to "assist each State in conducting a systematic assessment of current practices in Title XX funded day-care programs and provide a summary report of the assessment to Congress by June 1, 1981."¹⁷ According to the report, provider practices were in compliance with or surpassed the proposed Federal standards. More specifically:

- Despite the fact that 24 of the 47 States reporting have no group size requirements, all stated their centers had groups smaller than those set in the proposed regulations for all but the under-2-year-olds.
- Staff-to-child ratios were significantly higher than proposed for children aged 3 and older; however, they were significantly lower for those under 3.
- Although only half the States required the centers to provide training, nearly all provided such training and three-quarters of centers' care givers and one-half of family day-care mothers had gone through such a training program within the past year.
- Seventy-five percent of the centers (and half of the homes) provided the Department of Agriculture's recommended child-care food program.
- Seventy percent of the States assured children in care funded by Title XX the needed health services and 75 percent assured them needed social services.

Federal funding under Title XX has been significantly cut since 1981. Day care was one of the three highest funded Title XX services, representing 18 percent of all Title XX expenditures nationwide. Funding for the child nutrition program, a component of public support of day care, has also been reduced. Few programs have actually closed thus far, but this may occur in the future. Given the large cut-backs in Federal grants to States, most States are under growing financial pressure in this area. These States will view themselves as fortunate if they can maintain the quantity of care; they are unlikely to enforce standards, even if standards exist.

A question emerges regarding whether the extent of compliance that existed in 1981 was not related to the expectations of Federal standards and enforcement. From now on, the States will have primary responsibility for setting and enforcing standards concerning the health, safety, and developmental needs of children in care. Whether providers will continue to maintain these standards and whether States will monitor what providers do remains to be seen. Thus, day-care regulation joins preprimary school generally as an arena in which the protection of children will depend completely on the State.

Towards the future

The only significant Federal development is the expansion of the child-care tax credit in 1982 and, subsequently, making it available even to those who do not itemize deductions. However, unless the credit is increased, and made refund-

able, it will have no—or very little—value to low- and moderate-income families.

The Dependent Care Assistance plan and the salary reduction plan for certain private insurance benefits may open the way for some expansion in employer-sponsored child-care services.¹⁸ However, little has occurred as yet.

The major development in the field in recent years has been child-care information and referral services. These have burgeoned, especially in California, where they are publicly funded; this is an area in which more employers are considering involvement as well. Finally, concern with the quality of education is leading some States and localities to reexamine their preprimary programs. Some are now initiating full-day kindergartens; others are establishing pre-kindergarten programs; and still others are considering both.

The demand for child-care services continues to grow, and most parents of preschoolers want an educational program. Most such programs are private, particularly those below kindergarten level. Unfortunately, good programs are very often expensive. Moreover, there is still a scarcity of full-day programs, so many parents are “packaging” a group program with one or more other types of care, with consequences not yet known. The cutbacks in funding group programs are especially significant in their impact on ser-

vices for low- and middle-income children. Many of these children who were in publicly subsidized preschool programs are being transferred into informal and unregulated family day care as subsidies are cut back and programs close or parents lose their eligibility for a subsidy; the children must adapt to a new care giver, and often to the loss of friends.

The biggest current demand for child-care services is for infants and toddlers, because it is among their mothers that the increase in labor force participation has been greatest, and the scarcity of services most severe. Paid maternity (disability) leaves are available only to a minority of working women and are usually brief. There is an urgent need to expand and improve maternity-related benefits provided at the workplace.¹⁹ Data concerning how babies and toddlers are being cared for and what types of care exist are largely inadequate. Most of these children are in informal family day-care arrangements but, here again, little is known about these services.

Although the current child-care picture is hardly complete, all that is known suggests the likelihood of continuing demand. Accessibility, affordability, and quantity will remain central issues but questions regarding *quality* will increasingly come to the forefront. □

—FOOTNOTES—

ACKNOWLEDGMENT: This article is based on work done as a part of a national study of child-care services sponsored by the Carnegie Corporation.

¹Elizabeth Waldman, “Labor force statistics from a family perspective,” *Monthly Labor Review*, December 1983, pp. 14–18.

²U.S. Department of Health and Human Services, Administration for Children, Youth, and Families, in collaboration with Abt Associates, Inc. (Cambridge, Mass.), *National Day Care Study* (Washington, U.S. Government Printing Office, 1979), and *National Day Care Home Study* (Washington, U.S. Government Printing Office, 1980).

³*Trends in Child Care Arrangements of Working Mothers. Current Population Reports*, Series P–23, No. 117 (Bureau of the Census, 1982).

⁴*Nursery School and Kindergarten Enrollment of Children and Labor Force Status of Their Mothers, October 1967 to October 1976, Current Population Reports*, Series P–20, No. 318 (Bureau of the Census, 1978).

⁵*Preprimary Enrollment 1980* (U.S. Department of Education, National Center for Educational Statistics, 1982).

⁶Mary Jo Bane, Laura Lein, Lydia O'Donnell, C. Ann Stueve, and Barbara Wells, “Child care arrangements of working parents,” *Monthly Labor Review*, October 1979, pp. 50–56; and Sheila B. Kamerman, *Parenting In An Unresponsive Society: Managing Work and Family Life* (New York, The Free Press, 1980).

⁷*School Enrollment—Social and Economic Characteristics of Students: October 1979, Current Population Reports*, Series P–20, No. 360 (Bureau of the Census, 1981); and *National Day Care Study*.

⁸National Center for Education Statistics, unpublished data.

⁹*Report to Congress, Summary Report of the Assessment of Current State Practices in Title XX Funded Day Care Programs* (U.S. Department

of Health and Human Services, Administration for Children, Youth, and Families, 1982).

¹⁰*Ibid.*

¹¹*Trends in Child Care Arrangements.*

¹²*Report to Congress.*

¹³UNCO, Inc., *National Child Care Consumer Study: 1975* (U.S. Department of Health, Education, and Welfare, 1977).

¹⁴Sheila B. Kamerman, Alfred F. Kahn, and Paul W. Kingston, *Maternity Policies and Working Women* (New York, Columbia University Press, 1983).

¹⁵Steven L. Nock and Paul W. Kingston, “The Family Workday,” *Journal of Marriage and the Family*, forthcoming; Harriet B. Presser, “Working Women and Child Care,” in P.W. Berman and E.R. Ramey, eds., *Women: A Developmental Perspective* (Washington, U.S. Government Printing Office, 1982); and Graham L. Staines and Joseph H. Pleck, “Work Schedules’ Impact on the Family,” Research Monograph, 1982, processed.

¹⁶Sandra L. Burud, Raymond C. Collins, Patricia Divine-Hawkins, “Employer-Supported Child Care: Everybody Benefits,” *Children Today*, May–June 1983, pp. 2–7.

¹⁷See *Report to Congress*. The data provided in this report are baseline data for future assessments of the quality of Title XX funded day care once these programs are no longer subject to Federal regulations.

¹⁸For a description of these benefits, see Sheila B. Kamerman, *Meeting Family Needs: the Corporate Response* (White Plains, N.Y., Work in America, forthcoming).

¹⁹Kamerman, Kahn, and Kingston, *Maternity Policies*.

How do families fare when the breadwinner retires?

Using national longitudinal survey data on the retirement experience of men, researchers provide some insights on the economic situation of families in which the major wage earner is retired

KEZIA SPROAT

For 17 years, the National Longitudinal Surveys of Labor Market Experience (NLS) have gathered data that illuminate family life when the breadwinner has retired. The NLS were developed in 1965 to answer the question, "Why are increasing numbers of men leaving the work force before retirement age?" Because the male traditionally provides the bulk of family income, most retirement studies focus on his experience, but the surveys also include a female cohort who will soon be in retirement.

Older men in the NLS, now ages 62 to 76, have been interviewed 11 times in 17 years, and the mature women, now ages 46 to 60, 11 times in 16 years.¹ Researchers have used the data to look at predictors and measures of retirement and its relationship to health, family income, family structure, and general life satisfaction. Retirement planning and the effects of unexpected retirement have also been studied. (See box, page 42.) This article summarizes some recent NLS-based retirement studies which carry the strongest implications for the family—why and how the major breadwinner enters retirement, sources of family income after retirement, and overall satisfaction with life after retirement. Because family well-being depends largely on why and how the major breadwinner enters retirement, voluntary and involuntary retirees will be discussed separately.

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Routes to retirement

Involuntary retirement—A. Poor health. Involuntary retirees fare much less well than others, especially in the many cases where early withdrawal from the labor force is linked to the male breadwinner's poor health. In an analysis of 1966–76 data, Herbert Parnes and Gilbert Nestel found that poor health had forced 43 percent of white retirees and 52 percent of black retirees ages 55 to 69 out of the labor force.² Of retirees under age 62, 60 percent of whites and 67 percent of blacks retired for health reasons. In contrast, only 30 percent of white retirees and 29 percent of blacks in this age group retired voluntarily. More recent data confirm that blacks are more likely than whites to retire for health reasons.³ Men who retired because of poor health were more likely to have been in a low level occupation and to receive lower retirement income. They were also less likely to have any pension coverage other than social security, which is not available until age 62.⁴ Thomas Chirikos and Gilbert Nestel reported that even if workers are only moderately impaired, they suffer a 2.5- to 12-percent loss of annual earnings before retirement.⁵

Several studies confirm that poor health often forces retirement before the age of pension eligibility. Eric Kingson looked at 10 years of NLS data for a subsample of 240 black men and 405 white men who withdrew permanently from the labor force before age 62. Of these, 85 percent of the whites and 91 percent of the blacks had either reported health

problems before withdrawing or were certifiably disabled.⁶ Of these disabled men, 51 percent of the whites and 55 percent of the blacks received social security disability benefits. The remaining 34 percent of the whites and 36 percent of the blacks did not, so they and their families faced the multiple hardships that accompany poor health and severely reduced income.⁷

The deleterious effects of early retirement because of poor health are illustrated by Frank Mott and Jean Haurin in a study of widows from the women's cohort as well as widows of the older men's cohort.⁸ Mott and Haurin estimated that 1 of 5 men ages 45 to 59 in 1966 would die before reaching age 65. The families of men who suffer health problems before dying are concentrated in the lower socio-economic strata, and their economic disadvantages are intensified by medical costs and declining income. From an economic point of view, families of men who die unexpectedly fare better than those whose major breadwinner suffers a long illness. Wives do not enter the labor force in large numbers during their husbands' last illness. Many do find jobs after their husbands' death, although their general lack of education and work experience make them liable to earn very low wages. Mott and Haurin found that 29 percent of the white widows live below the poverty line, compared with 19 percent before the death of the husband; among blacks, the corresponding figures are 47 percent before and 67 percent after.⁹

B. Unemployment. Unemployment forces many workers into early retirement, according to Sally Bould.¹⁰ She found that duration of previous unemployment is a significant influence on early retirement. "Retirement is, perhaps, a mechanism for dealing with long-term chronic unemployment . . . a way of managing the spoiled identity that long-term unemployment can produce." Bould's conclusion is supported by Herbert Parnes, Mary Gagen, and Randall King, whose study focused on men who lost jobs they had held for at least 5 years. Long-term effects on income, psychological health, and occupational status were observed even for those who later found jobs.¹¹ According to Eric Kingson, events early in life, some of which are uncontrollable ("choice" of parents, for example), significantly influence retirement prospects. Kingson concluded that a life cycle perspective is required to understand the favorable and unfavorable "opportunity tracks" which lead some very early retirees and their families to comfort and others to severe poverty.¹² Nan Maxwell also found that retirement income and overall well-being are closely linked to prior labor market experiences.¹³

C. Mandatory plans. Another cause of involuntary early retirement is agreements which specify mandatory retirement at a certain age, although very few workers are forced out by such plans. Between 1966 and 1976, only 3 percent of retirees in the NLS sample were forced out by mandatory

plans. Herbert Parnes and Lawrence Less found that in 1980, fewer than 5 percent of the retirees in the NLS sample, then ages 59 to 73, had been forced to retire. Larger proportions of blacks were forced out than whites, and among these, more nonfarm laborers (13 percent) than any other occupational group.¹⁴

Voluntary retirement. Voluntary early retirement is largely driven by pension availability. The answer to the question that gave rise to the NLS—why the trend to early retirement?—seems now clearly to be that increasingly attractive pensions make early retirement more feasible financially. More blacks than whites choose to retire early because average earnings are lower for blacks and there is less difference between their wages and social security and other pensions.¹⁵

Postretirement labor market activity

Being "retired" does not preclude labor market activity. Such activity has been analyzed using data from the NLS. Herbert Parnes and others find that conclusions about retirement will differ depending on whether retirement is measured by pension coverage, subjective self-report, or labor market withdrawal. Parnes and Less believe the choice of retirement measures should be governed by the specific questions one aims to illuminate. The number of men ages 57 to 71 who were retired in 1980 ranges from 5.4 to 8.9 million, depending on which measure of retirement is used.¹⁶ In this discussion, the subjective self-report definition is used—that is, "retirees" are those who said at some time during the interviews that they had stopped working at a regular job.

About 1 of 6 retirees were in the labor force in 1980. Men forced to retire because of mandatory plans were more likely to be in the labor market; their participation rate was 24 percent, compared with 16 percent for all retirees. Only 10 percent of those who left the labor force for health reasons were still working or looking for a job.¹⁷

Parnes and Less found that age, health, type of preretirement job, attitude toward retirement, and family income (exclusive of the retiree's earnings) all influence post-retirement labor market activity. Professional and managerial workers are more likely than other occupational groups to continue working after retirement. Marital status and whether the retiree's wife worked were important: retirees were more likely to work if their wives did. In the 1980 survey, employed retirees were asked their main reasons for working during retirement. The two most frequent answers were "inflation" (30 percent) and "boredom with retirement" (26 percent).¹⁸

Retirees who did not participate in the labor market in 1976 showed little desire to do so: only 2 percent of whites and 5 percent of blacks said they would accept a job if one were offered.¹⁹ Data for 1980 and 1981 continued to show

NLS-based studies on retirement

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that most retirees are not interested in working. In 1980, 93 percent of the retirees who were not working responded negatively to a hypothetical job offer; and in 1981, when a question about part-time work was included, this negative response rate was reduced by only 5 percentage points.²⁰

Family income

In 1975, voluntary retirees and their families were making do with a family income one-third less (adjusted for infla-

tion) than in the year prior to retirement. The major sources of family income in 1975 were social security (received by 90 percent of those who retired at the normal age, but only 52 percent of those forced out early because of poor health); and disability benefits (received by only 44 percent of those who retired for health reasons). About 21 percent had income from earnings of their wives, in amounts often as high as the retiree's own earnings; 12 percent of white retirees and 17 percent of blacks had earnings of their own. Other

family members' earnings contributed to the income of about 10 percent of all retirees, and 8 percent had income from self employment.²¹

In 1980, the wife's earnings continued to be a source of family income for about one-fourth of the white married retirees and 18 percent of the blacks. Almost all retirees (90 percent) received social security benefits, and nearly three-fifths had other pensions, mostly from private employers; 17 percent had earnings of their own (10 percent from self-employment); 12 percent had income from other family members; and 7 percent received public assistance, a source of income for 1 of 4 black retirees, but only 1 of 16 whites. Other income, primarily from property, was received by two-thirds of the whites, but only one-sixth of the blacks. Married male retirees were more likely to have property income. Average family income in 1980 for male retirees ages 57 to 71 was \$15,300; however, the range was wide—from \$16,900 for married whites to \$6,900 for unmarried blacks.²²

As for amounts from each source, Parnes and Less estimated that in 1980, social security and other pensions accounted for less than three-fifths of total family income for whites, and two-thirds for blacks, whose social security benefits reflect weighting in favor of lower wage workers. Married men, on average, showed 10 percent of family income from wives' earnings, 8 percent from current earnings, and 2 percent from wives' pensions. Among unmarried men, income from other family members accounted for about 11 percent of the average income of whites and 25 percent of that of blacks.²³

Parnes and Less found that median family income (adjusted for inflation) of married retirees in 1980 was about half the income they received in the year before retirement. They also saw a downward trend in real family income since 1976 that they attributed to reduced labor market activity of family members. Nonetheless, in 1980, 59 percent of married retirees and 48 percent of the unmarried said their income was adequate or better than adequate, and an additional one-third said they had "just enough to get by." Only 9 percent of married retirees and 15 percent of the unmarried said they "cannot make ends meet." However, Parnes and Less observed "very profound" differences by race in the responses, particularly among married retirees; 25 percent of the blacks but only 8 percent of whites said they could not make ends meet, while 21 percent of whites but only 3 percent of blacks said they saved regularly.²⁴

Psychological well-being

The 1980 survey asked questions about retirees' use of leisure time, their retirement decisions, and their general satisfaction with life. Most retirees said life in retirement was about what they expected, and about 1 of 4 said it was better, but the strong effect of reason for retirement on well-being is illustrated by the fact that among those who had

retired for health reasons, more than 30 percent found retirement worse than they expected. Health, occupational level, and family income positively influenced the extent of purposeful leisure time activities, which, in turn, increased life satisfaction. Participating in the paid labor market and being married to a healthy spouse also significantly increased life satisfaction for retirees.²⁵

Women's retirement plans

Thus far, the whole family's well-being in retirement can only be suggested by NLS research because of the focus on the male breadwinner. However, some data about retirement planning have recently become available from the women's cohort. In 1979, women then ages 42 to 56 who were in the labor force or who said they intended to seek jobs were asked their plans for retirement and those of their husbands. Lois B. Shaw analyzed the responses of more than 800 married women who had retirement plans.²⁶ Women who had a planned retirement age were slightly better educated and were more likely to be employed, to be covered by a pension plan, to expect social security from their own employment, and to have a husband who had retirement plans as well. Of these women, 36 percent planned to retire before age 62; 22 percent at ages 62 to 64; 19 percent at age 65; 3 percent after age 65; and 20 percent planned never to retire. Most did not plan to retire when their husbands did, except for those with husbands of the same age as themselves. As with the men, women's retirement plans appeared to have been influenced first by pension eligibility and second by the desire to share the leisure of retirement with a spouse. Women with husbands in poor health were less likely to plan to retire before age 65, but a woman's own health did not strongly affect her plans.²⁷

Other family members

Some recent work by Scott and Rubye Beck suggests additional questions about family life that the NLS can be used to answer. They compared cross-sectional and longitudinal data and found that estimates of the number of families who had formed extended households are doubled when longitudinal data are used. Between 1966 and 1976, 20 percent of white and 50 percent of black middle-aged couples had taken parents or grandchildren to live in their homes.²⁸ Scott Beck found in another study that paternal grandfather's and grandmother's occupations have positive effects on the occupations of men, even when the influence of father's occupation is taken into account.²⁹

Future researchers will have the benefit of greatly expanded NLS data. The five NLS cohorts include significant numbers of father-son, mother-daughter, husband-wife, brother-sister, and other sibling pairs. Their experiences promise to be of great value in illuminating many questions about family life. □

—FOOTNOTES—

¹In 1966, the older men's cohort included 5,034 respondents; in the most recent survey in 1981, 2,832 were interviewed. Of these, 2,286 were married, spouse present; 13 were married, spouse absent; 246 were widowed; 114 were divorced, 66 were separated; and 107 were never married. As for numbers of dependents excluding the wife, 2,316 had none and 505 had one or more. The mature women's cohort began in 1976 with 5,083 respondents, and in 1981, 3,677 were interviewed. In 1981, 2,577 of the women's cohort were married, spouse present; 7 were married, spouse absent; 387 were widowed; 362 were divorced, 178 were separated; and 166 were previously married. As to the number of dependents excluding the husband: 1,817 had none and 1,846 had one or more. Note that the women's cohort is generally 15 years younger than the men's. Attrition has not significantly changed the representativeness of the samples. For a detailed description of the NLS, see *The National Longitudinal Surveys Handbook* (Columbus, The Ohio State University, Center for Human Resource Research, 1982).

²Herbert S. Parnes and Gilbert Nestel, "The Retirement Experience," in Herbert S. Parnes, ed., *Work and Retirement: A Longitudinal Study of Men* (Cambridge, Mass., The MIT Press, 1981), pp. 155-97.

³Herbert S. Parnes and Lawrence Less, *From Work to Retirement: The Experience of a National Sample of Men* (Columbus, The Ohio State University, Center for Human Resource Research, 1983).

⁴Parnes and Nestel, "The Retirement Experience," p. 166.

⁵Thomas N. Chirikos and Gilbert Nestel, "Impairment and Labor Market Outcomes: A Cross-Sectional and Longitudinal Analysis," in Herbert S. Parnes, ed., *Work and Retirement: A Longitudinal Study of Men* (Cambridge, Mass., The MIT Press, 1981), pp. 93-131.

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⁹*Ibid.*, p. 228.

¹⁰Sally Bould, "Unemployment as a Factor in Early Retirement Decisions," *American Journal of Economics and Sociology*, April 1980, pp. 123-26.

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¹⁴Parnes and Nestel, "The Retirement Experience," p. 164; Parnes and Less, *From Work to Retirement*, p. 32.

¹⁵This effect in regard to disabled workers is demonstrated in Donald O. Parsons, "Black-White Differences in Labor Market Participation of Older Males," in Herbert S. Parnes, ed., *Work and Retirement: A Longitudinal Study of Men* (Cambridge, Mass., The MIT Press, 1981), pp. 132-54.

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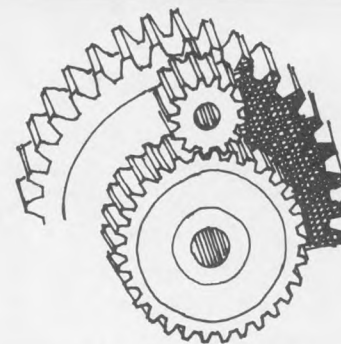
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²⁷Because Shaw includes only employed women in the sample, those with severe health impairments do not appear.

²⁸Scott and Rubye Beck, "Taking Elderly Parents In: Incidence in Middle and Later Life," paper presented at the 35th Annual Meeting of the Gerontological Society of America, Boston, Mass., November 1982.

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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.

Sector	Productivity	Output	Hours
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:

	Productivity	Output	Hours
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.¹ 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
Business:														
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
Nonfarm business:														
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
Manufacturing:														
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
Nonfinancial corporations:														
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.

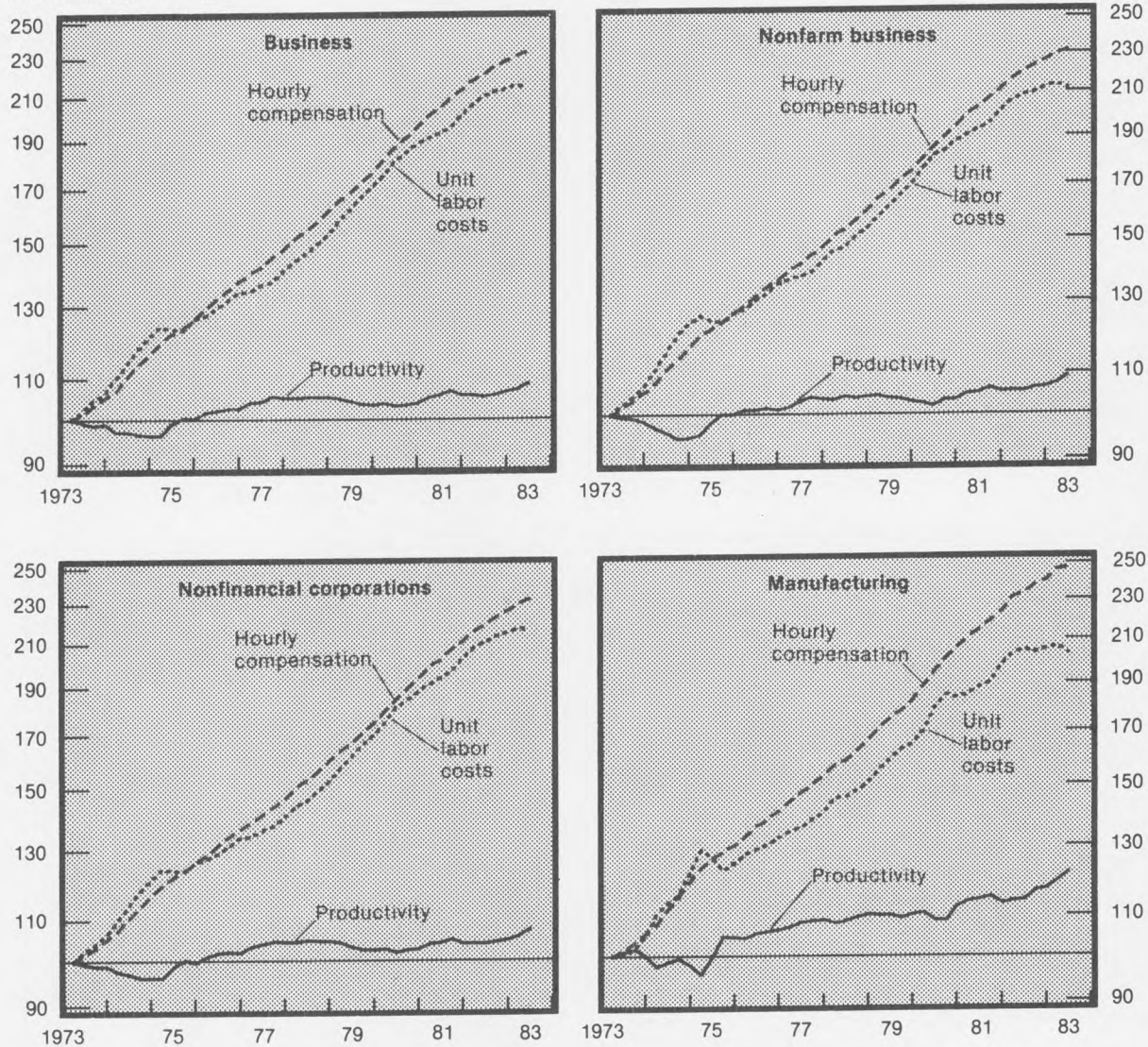
Manufacturing

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	(1)	(1)
Nondurable	15.86	10.6	15.86	11.1	(1)	(1)
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

¹Not 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.²

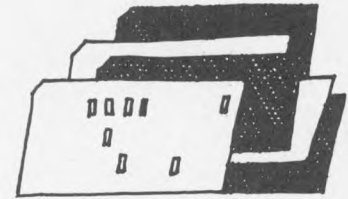
The resurgence of profits brought the index of profit per unit of output to 114.1 in the second quarter, the highest level achieved by this index, which covers the 1958 and forward period. The previous peak level (108.6) was attained during the third quarter of 1981. □

—FOOTNOTES—

¹ Percent change was calculated using compound rate formula.

² 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.

Research Summaries



Skill level differences in white-collar pay

CARL PRIESER

Differing duties and responsibilities, as well as skill levels, are major factors contributing to wide variations in pay for the same occupation. The Bureau of Labor Statistics' national survey of professional, administrative, technical, and clerical pay (PATC) underscores this observation in relation to two dozen white-collar occupations, spanning 101 work level categories in private industry. The annual survey, covering medium and large firms, is used in the pay comparability process for Federal white-collar employees.¹

Engineers, the survey's most heavily populated occupa-

tional group, illustrate the effect of skill levels on pay. Recent engineering graduates averaged \$2,130 monthly in March 1983 at the first of eight survey work levels; at level VIII, engineers responsible for highly complex engineering programs averaged \$5,578 a month. In the clerical occupations, pay levels for secretaries ranged from \$1,228 monthly for individuals following general instructions in carrying out the recurring work of the office (level I) to \$1,928 monthly for those independently handling "the unexpected" for policymakers in large organizations (level V). Other examples of occupations with substantial pay differences across work levels are found in table 1.

It should be noted, however, that relatively small differences in salary levels were evident for the *same* level of work in *different* occupations. The following tabulation shows a 4-percent spread separated the highest paid and lowest

Table 1. Average monthly salaries of employees in selected white-collar occupations in private establishments, March 1983

Occupational level and Federal GS grade equivalent	All establishments		2,500 workers or more		Manufacturing	
	Number of employees ¹	Average monthly salaries	Percent of all establishment employment	Percent of all establishment salaries	Percent of all establishment employment	Percent of all establishment salaries
ACCOUNTANTS AND AUDITORS						
Accountants I (GS-5)	14,446	\$1,627	23	103	47	98
Accountants II (GS-7)	24,627	1,939	31	109	57	100
Accountants III (GS-9)	38,490	2,279	25	105	58	100
Accountants IV (GS-11)	22,037	2,854	29	102	59	98
Accountants V (GS-12)	7,319	3,489	33	101	58	97
Accountants VI (GS-13)	1,423	4,317	56	100	63	98
Chief accountants I (GS-11)	857	2,807	—	—	—	—
Chief accountants II (GS-12)	1,195	3,472	—	—	63	98
Chief accountants III (GS-13)	741	4,441	11	99	57	99
Chief accountants IV (GS-14)	246	5,660	—	—	—	—
Auditors I (GS-5)	1,578	1,560	31	102	25	111
Auditors II (GS-7)	3,530	1,941	35	103	36	105
Auditors III (GS-9)	4,762	2,354	37	103	36	103
Auditors IV (GS-11)	2,431	2,841	39	104	51	100
Public accountants I (GS-7)	10,804	1,556	—	—	—	—
Public accountants II (GS-9)	11,168	1,715	—	—	—	—
Public accountants III (GS-11)	8,698	2,023	—	—	—	—
Public accountants IV (GS-12)	5,395	2,428	—	—	—	—
ATTORNEYS						
Attorneys I (GS-9)	1,311	2,343	33	113	—	—
Attorneys II (GS-11)	2,905	2,875	28	109	17	108

See footnote at end of table.

Carl Prieser is a labor economist in the Division of Occupational Pay and Employee Benefit Levels, Bureau of Labor Statistics.

Table 1. Continued—Average monthly salaries of employees in selected white-collar occupations in private establishments, March 1983

Occupational level and Federal GS grade equivalent	All establishments		2,500 workers or more		Manufacturing	
	Number of employees ¹	Average monthly salaries	Percent of all establishment employment	Percent of all establishment salaries	Percent of all establishment employment	Percent of all establishment salaries
ATTORNEYS						
Attorneys III (GS-12)	3,518	\$3,523	36	103	29	104
Attorneys IV (GS-13)	3,342	4,432	35	102	41	100
Attorneys V (GS-14)	1,851	5,467	45	101	41	102
Attorneys VI (GS-15)	492	7,076	50	103	48	97
BUYERS						
Buyers I (GS-5)	6,726	1,593	20	112	70	100
Buyers II (GS-7)	18,096	1,969	23	106	85	99
Buyers III (GS-9)	16,259	2,419	38	102	85	100
Buyers IV (GS-11)	5,366	2,964	61	99	82	98
PROGRAMMERS						
Programmers/analysts I (GS-5)	14,660	1,648	35	108	35	105
Programmers/analysts II (GS-7)	35,263	1,846	32	107	35	104
Programmers/analysts III (GS-9)	51,033	2,185	36	105	38	103
Programmers/analysts IV (GS-11)	29,142	2,620	47	103	46	103
Programmers/analysts V (GS-12)	9,654	3,177	66	103	61	104
PERSONNEL MANAGEMENT						
Job analysts I (GS-5)	140	1,658	—	—	—	—
Job analysts II (GS-7)	443	1,833	43	102	41	112
Job analysts III (GS-9)	837	2,202	39	106	43	108
Job analysts IV (GS-11)	561	2,757	60	103	76	102
Directors of personnel I (GS-11)	1,528	2,723	—	—	77	99
Directors of personnel II (GS-12)	2,659	3,504	—	—	69	99
Directors of personnel III (GS-13)	1,082	4,275	11	106	54	101
Directors of personnel IV (GS-14)	308	5,220	44	104	52	100
CHEMISTS AND ENGINEERS						
Chemists I (GS-5)	2,653	1,780	20	108	77	97
Chemists II (GS-7)	5,255	2,028	30	108	88	100
Chemists III (GS-9)	9,197	2,451	28	110	89	99
Chemists IV (GS-11)	9,413	2,953	30	107	88	99
Chemists V (GS-12)	6,850	3,574	33	104	93	100
Chemists VI (GS-13)	2,312	4,252	36	100	91	101
Chemists VII (GS-14)	779	5,039	50	102	—	—
Engineers I (GS-5)	32,588	2,130	51	102	73	99
Engineers II (GS-7)	64,490	2,314	46	102	75	99
Engineers III (GS-9)	131,048	2,609	47	102	72	99
Engineers IV (GS-11)	138,684	3,061	51	102	72	99
Engineers V (GS-12)	99,584	3,643	56	101	67	100
Engineers VI (GS-13)	46,426	4,288	62	101	65	100
Engineers VII (GS-14)	12,383	4,847	58	100	58	101
Engineers VIII (GS-15)	3,125	5,578	54	101	50	103
TECHNICAL SUPPORT						
Engineering technicians I (GS-3)	4,996	\$1,304	23	104	67	100
Engineering technicians II (GS-4)	18,416	1,506	37	105	71	99
Engineering technicians III (GS-5)	31,731	1,788	41	102	79	99
Engineering technicians IV (GS-7)	35,260	2,088	52	101	78	99
Engineering technicians V (GS-9)	20,491	2,360	64	101	75	99
Drafters I (GS-2)	2,029	1,012	15	109	53	99
Drafters II (GS-3)	11,234	1,302	25	110	54	95
Drafters III (GS-4)	22,217	1,533	25	107	67	97
Drafters IV (GS-5)	24,714	1,871	31	104	68	98
Drafters V (GS-7)	20,170	2,316	44	103	68	98
Computer operators I (GS-4)	6,003	1,040	27	110	30	105
Computer operators II (GS-5)	17,903	1,221	24	120	34	98
Computer operators III (GS-6)	29,576	1,416	26	113	45	103
Computer operators IV (GS-7)	15,171	1,727	38	108	47	103
Computer operators V (GS-8)	3,136	2,026	53	106	38	104
Computer operators VI (GS-9)	477	2,100	—	—	—	—
Photographers II (GS-5)	705	1,703	29	108	69	103
Photographers III (GS-7)	730	2,035	48	101	71	100
Photographers IV (GS-9)	397	2,235	76	97	84	101

See footnote at end of table.

Table 1. Continued—Average monthly salaries of employees in selected white-collar occupations in private establishments, March 1983

Occupational level and Federal GS grade equivalent	All establishments		2,500 workers or more		Manufacturing	
	Number of employees ¹	Average monthly salaries	Percent of all establishment employment	Percent of all establishment salaries	Percent of all establishment employment	Percent of all establishment salaries
CLERICAL						
Accounting clerks I (GS-2)	26,763	\$933	13	126	30	105
Accounting clerks II (GS-3)	87,578	1,122	17	117	40	99
Accounting clerks III (GS-4)	59,324	1,339	26	111	44	101
Accounting clerks IV (GS-5)	21,355	1,621	39	109	52	101
File clerks I (GS-1)	19,738	809	9	108	13	106
File clerks II (GS-2)	10,926	911	18	113	20	117
File clerks III (GS-3)	3,457	1,142	24	110	21	124
Key entry operators I (GS-2)	52,682	1,049	20	119	35	104
Key entry operators II (GS-3)	32,483	1,255	29	113	42	106
Messengers (GS-1)	11,746	910	26	113	26	110
Personnel clerks I (GS-3)	1,605	1,075	14	106	53	99
Personnel clerks II (GS-4)	3,575	1,286	18	114	64	100
Personnel clerks III (GS-5)	3,234	1,442	18	110	64	102
Personnel clerks IV (GS-6)	1,528	1,683	27	116	65	103
Purchasing assistants I (GS-4)	3,883	1,236	20	124	81	100
Purchasing assistants II (GS-5)	3,987	1,567	37	113	87	100
Purchasing assistants III (GS-6)	1,185	2,005	82	104	86	100
Secretaries I (GS-4)	57,779	1,228	28	115	42	105
Secretaries II (GS-5)	61,183	1,336	34	106	45	102
Secretaries III (GS-6)	102,687	1,521	37	109	52	102
Secretaries IV (GS-7)	45,266	1,686	36	107	48	101
Secretaries V (GS-8)	20,993	1,928	34	109	54	103
Stenographers I (GS-3)	13,635	1,359	58	103	38	100
Stenographers II (GS-4)	8,162	1,614	64	101	50	102
Typists I (GS-2)	26,832	952	21	114	29	112
Typists II (GS-3)	13,827	1,257	42	108	42	109

¹Occupational employment estimates relate to the total in all establishments within scope of the survey and not to the number actually surveyed.

NOTE: The following occupational levels were surveyed but insufficient data were ob-

tained to warrant publication: Chief accountant V; director of personnel V; chemist VIII; personnel assistant V; and photographer I and V.

paid of the six survey work levels in private industry that equate to a grade level 13 within the Federal white-collar pay system:

<i>Work levels</i>	<i>Monthly salary level</i>
Chief accountant III	\$4,441
Attorney IV	4,432
Accountant VI	4,317
Engineer VI	4,288
Director of personnel III	4,275
Chemist VI	4,252

Thus, skill level can act as a source of wage variation or wage uniformity.

Besides skill level, other factors studied that bear on white-collar pay levels include the size of a firm's workforce and its industrial activity. In addition to presenting overall survey results, table 1 relates occupational employment and salary information separately for large firms (at least 2,500 employees) and for manufacturers to all-industry figures.

Salary levels in large establishments were consistently higher than the levels in the survey as a whole. Of the 91 occupational work levels permitting comparison, 37 showed large establishments within 3 percent of the all-establishment average, 37 were from 4 to 10 percent higher, and the remaining 17, 10 percent or more above the average. Clerical occupations accounted for 14 of the 17 levels with the largest differences.

For manufacturing establishments, salaries were at or

slightly above the all-industry averages for most occupations. Salary levels for 70 of the 91 work levels permitting comparisons showed manufacturing within 3 percent of the all-industry average, and 16 of the remaining 21 levels were from 4 to 10 percent higher than the average. The occupations with the highest relative salaries in manufacturing were lower level-clerical occupations, such as messengers, typists, and file clerks.

Although the survey focuses on salary levels, it also permits a look at salary trends. In this connection, some 100 occupational work levels were grouped into three broad categories of skill levels: Group A equates to grades 1-4 of the Federal Government General Salary (GS) Schedule; Group B to grades 5-9; and Group C to grades 11-15. (See

Table 2. Percent increases in average salaries by work level category, 1973-83

Period	Group A (GS grades 1-4)	Group B (GS grades 5-9)	Group C (GS grades 11-15)
1973-83	116.4	113.5	122.0
1973-74	6.2	5.7	6.2
1974-75	9.1	8.6	8.8
1975-76	7.6	6.4	6.5
1976-77	6.9	6.3	7.7
1977-78	7.5	8.0	8.8
1978-79	7.2	7.5	8.0
1979-80	9.1	10.1	9.3
1980-81	9.8	9.6	10.2
1981-82	9.5	9.4	10.4
1982-83	7.4	7.3	7.2

table 1 for identification of the job classifications that equate to each GS grade for use in the Federal pay setting process.²) In 1982–83, increases in average salaries varied little among these groups—7.2 to 7.4 percent. Since 1973, cumulative percentage increases have been the highest for the grades 11–15 category and lowest for the middle grades. (See table 2.)

A MORE DETAILED ANALYSIS of white-collar salaries and complete results of this year's survey are contained in the *National Survey of Professional, Administrative, Technical and Clerical Pay, March 1983*, BLS Bulletin 2181. It includes salary distributions for 101 occupational work levels, and relative employment and salary levels by industry division for the two dozen occupations covered. □

—FOOTNOTES—

¹ The PATC survey is conducted by the Bureau of Labor Statistics, but survey occupations and coverage such as establishment size and the private sector industries to be included are determined by the President's Pay Agent—the Secretary of Labor and the Directors of the Office of Management and Budget and the Office of Personnel Management. The Agent has designated the industrial coverage and minimum size establishment as follows: manufacturing, 100 or 250 employees; transportation, communications, electric, gas, and sanitary services, 100 or 250 employees; mining and construction, 250 employees; wholesale trade, 100 employees; retail trade, 250 employees; finance, insurance, and real estate, 100 employees; and selected services, 50 or 100 employees. The pay-setting role of the PATC survey is described in George L. Stelluto's, "Federal pay comparability: facts to temper the debate," *Monthly Labor Review*, June 1979, pp. 18–28.

² In 1983, a total of 101 work levels produced publishable data out of 107 levels within scope of the survey. Widely varying duties and responsibilities may be embodied in work levels within each of the broad categories of table 2; for example, Group B includes clerical and technical positions, such as accounting clerk IV and engineering technician IV, as well as the entry and developmental levels of professional occupations.

Wages of appliance repair technicians vary widely among metropolitan areas

HARRY B. WILLIAMS

Pay levels for technicians repairing major consumer electrical products in 19 metropolitan areas averaged from \$7.93 an hour in Buffalo to \$10.43 in San Francisco-Oakland, according to a November 1981 Bureau of Labor Statistics survey.¹ These technicians worked in appliance repair facilities operated by electrical repair shops, department stores, retail television and radio stores, appliance retailers, and appliance wholesalers.

About two-thirds of the technicians specialized in repairing either television sets, radios, and tape players (brown

goods) or larger household appliances such as refrigerators, freezers, and washers (white goods); their average earnings in individual areas typically were between \$7 and \$9 an hour. A group of approximately 4,350 technicians—called service technicians—routinely worked on both brown and white goods during the survey period and could not be classified as either television-radio or electrical appliance technicians. Because of their dual skills, service technicians usually averaged more per hour than television-radio or electrical appliance technicians; however, separate data for service technicians met Bureau publication criteria only in Newark, where 208 full-time service technicians employed in combination (inside and outside) work averaged \$10.31 an hour.

Among the 19 areas surveyed, pay levels were highest for full-time technicians in the San Francisco-Oakland area, where TV-radio repairers averaged \$9.87 and electrical appliance repairers, \$9.72. The lowest averages were found in Memphis at \$6.65 for TV-radio repairers and \$6.12 for electrical appliance repairers. (See table 1.) Average wages for part-time workers in the same occupations most frequently were between \$5.75 and \$8.75 an hour.

Full-time apprentice technicians often earned 30 to 50 percent less, on average, than the qualified technicians. Averages for electrical appliance apprentices, in 9 areas, ranged from \$4.58 an hour in Boston to \$7.95 an hour in Chicago. Hourly earnings of TV-radio apprentices, in 12 areas, averaged from \$4.01 in Memphis to \$8.10 in San Francisco-Oakland. TV-radio apprentices averaged more than their electrical appliance counterparts in 4 of 6 areas for which data permit comparison.

Electrical appliance technicians, however, usually averaged more than their TV-radio counterparts. Their pay advantages, typically between 2 and 10 percent, were largely explained by three factors: industry, union status, and size of repair facility. To illustrate, nearly one-third of the electrical appliance technicians worked in department stores or for appliance wholesalers—the two highest-paying industry branches. Such establishments employed slightly more than one-tenth of the television-radio technicians. Also, union contracts covered slightly more than one-third of the survey's white-goods technicians and apprentices compared with one-fourth of those servicing brown goods. The study showed that technicians in shops with union contracts nearly always averaged more per hour than their nonunion counterparts. Additionally, four-fifths of the white-goods technicians, compared with slightly over two-fifths of their brown-goods counterparts, were in establishments with at least 10 repairers. Technicians in shops with at least 10 repairers usually averaged more than those in smaller shops. But, when comparisons were limited to establishments employing both types of technicians (about 13 percent of the establishments studied), brown-goods technicians commonly received as much as, or more than, white-goods technicians.

Separate earnings data were developed for three cate-

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Table 1. Number of full-time workers in selected occupations and average straight-time hourly earnings in appliance repair facilities, November 1981

Area	Electrical appliance technicians		Electrical appliance apprentices		TV-radio technicians		TV-radio apprentices	
	Workers	Earnings ¹	Workers	Earnings ¹	Workers	Earnings ¹	Workers	Earnings ¹
Northeast								
Boston	106	\$8.01	22	\$4.58	97	\$8.69	14	\$4.88
Buffalo	35	7.21	—	—	105	6.67	—	—
Nassau-Suffolk	108	8.18	10	5.75	155	7.58	—	—
Newark	71	7.63	—	—	93	6.85	7	4.65
New York	319	7.35	57	4.71	611	7.56	68	5.27
Philadelphia	219	8.88	29	6.95	349	8.41	—	—
South								
Atlanta	90	9.01	—	—	154	8.96	—	—
Dallas-Fort Worth	150	8.51	14	5.67	257	8.51	—	—
Memphis	29	6.12	—	—	44	6.65	8	4.01
Miami	108	8.42	44	5.12	154	8.23	27	5.73
Washington	158	8.86	—	—	323	8.20	17	5.35
North Central								
Chicago	383	9.21	9	7.95	594	9.02	48	6.19
Cleveland	66	8.86	—	—	169	7.93	7	4.97
Kansas City	102	8.08	—	—	123	8.20	—	—
Minneapolis-St. Paul	126	8.75	—	—	157	8.65	—	—
St. Louis	105	8.98	—	—	209	8.45	12	4.97
West								
Denver-Boulder	112	8.72	—	—	218	8.54	34	5.42
Los Angeles-Long Beach	193	9.38	14	6.56	630	8.78	46	6.29
San Francisco-Oakland	152	9.72	28	7.36	276	9.87	33	8.10

¹Information relates to straight-time hourly earnings, excluding premium pay for overtime and for work on weekends, holidays, and late shifts, as well as commissions paid for the sale of maintenance contracts, parts, or appliances. Premiums paid for licenses held by employees, if any, are included. Incentive payments, such as those based on flat-rate hours, flat-percentages, or other piecework or production bonus systems, and cost-

of-living allowances are included as part of the workers' regular pay. Nonproduction bonus payments, such as Christmas and yearend bonuses, are excluded.

NOTE: Dash indicates no data reported or data do not meet publication criteria.

gories of technician jobs—inside (bench), outside (home service calls), and a combination of the two. Full-time TV-radio technicians making outside calls typically averaged less than their counterparts on either inside or combination work. (There were too few comparisons possible among electrical appliance technicians to observe an earnings pattern.)

About three-fifths of the workers covered by the survey were in facilities with formal provisions for paying commissions on the sale of maintenance contracts, parts, or appliances. Commissions for the sale of maintenance contracts were the most frequent; those for the sale of appliances were least common. Surveywide, 14 percent of the electrical appliance technicians, 7 percent of the TV-radio technicians, and 3 percent of the apprentice technicians received commissions during the payroll period. Technicians and apprentices who received commissions averaged less than 5 percent above straight-salary personnel in virtually all areas. (Earnings data presented in table 1 exclude commissions, but include earnings under other incentive systems, such as flat-rate hours or piece rates.)

Paid holidays, most frequently 6, 10, or 11 days annually, were provided by establishments employing more than seven-eighths of the full-time technicians and apprentices in each of the areas studied.

Virtually all full-time appliance repair technicians and apprentices covered by the survey were in facilities provid-

ing paid vacations after qualifying periods of service. Typical vacation plans called for at least 2 weeks of vacation pay after 1 year of service, 3 weeks after 10 years, and 4 weeks after 15 years. About one-half of the workers could receive 5 weeks after 25 years or more.

Various health and insurance plans, at least partly paid for by the employer, also were available to large proportions of workers, although the incidence of the plans varied widely by location. Retirement pension plans applied to between one-half and four-fifths of the full-time technicians and apprentices in each of the areas surveyed. Employers typically paid the entire cost of these pension plans.

Summary reports issued shortly after each of the 19 areas was surveyed are available from the Bureau or any of its regional offices. A comprehensive report, *Industry Wage Survey: Electrical Appliance Repair, November 1981* (BLS Bulletin 2177), is for sale by the Superintendent of Documents, Washington, D.C. 20402, and by Bureau regional offices. □

¹The survey covered repair facilities employing 16,635 nonsupervisory service workers. About three-fourths of these workers were technicians and apprentices. Earnings data exclude premium pay for overtime and for work on weekends, holidays, and late shifts, as well as commissions paid on sales of maintenance contracts, parts, or appliances. Premiums paid for licenses held by employees, if any, are included.

For an account of an earlier study, see "Occupational earnings in appliance repair facilities," *Monthly Labor Review*, January 1981, pp. 57-58.

Major Agreements Expiring Next Month



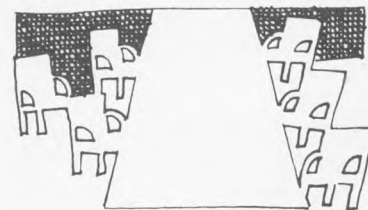
This list of selected collective bargaining agreements expiring in January is based on contracts on file in the Bureau's Office of Wages and Industrial Relations. The list includes agreements covering 1,000 workers or more.

Employer and location	Industry	Labor organization ¹	Number of workers
Alden's, Inc. (Chicago, Ill.)	Retail trade	Teamsters (Ind.)	2,500
American Cyanamid Co., Lederle Laboratories Division (Pearl River, N.Y.)	Chemicals	Chemical Workers	1,450
American Home Foods, Inc., Chef Boy-ar-dee Division (Milton, Pa.)	Food products	Food and Commercial Workers	1,450
Association of Motion Picture & Television Producers, Inc., Television and Theatrical Agreement (Interstate)	Amusements	Musicians	5,000
Atlantic Richfield Company and Arco Pipe Line Company (Interstate)	Petroleum	Oil, Chemical and Atomic Workers	2,050
Atlantic Richfield Company (California)	Petroleum	Oil, Chemical and Atomic Workers	1,200
Bakeries, New York City and vicinity (New York and New Jersey) ²	Food products	Bakery, Confectionery and Tobacco Workers	3,000
Bryan Foods, Inc. (West Point, Miss.)	Food products	Food and Commercial Workers	1,250
Ciba-Geigy Corp. (McIntosh, Ala.)	Chemicals	Oil, Chemical and Atomic Workers	1,000
Corning Glass Works (Corning, N.Y.)	Stone, clay, and glass products	Flint Glass Workers	4,000
Del Monte Corp., Midwest Division (Illinois)	Food products	Retail, Wholesale and Department Store	1,300
Documentary and Industrial Films Agreement (Interstate) ²	Amusements	Musicians	2,500
Fed-Mart Stores, Inc. (San Diego, Calif.)	Retail trade	Food and Commercial Workers	1,500
General Telephone Company of Wisconsin (Wisconsin)	Communication	Communications Workers	1,500
Gulf Oil Company—U.S., Port Arthur Refinery (Port Arthur, Tex.)	Petroleum	Oil, Chemical and Atomic Workers	2,250
Litton Systems, Inc., Ingalls Shipbuilding Division (Pascagoula, Miss.)	Transportation equipment	Electrical Workers (IBEW)	1,000
Mobil Oil Corporation, Beaumont Refinery (Beaumont, Tex.)	Petroleum	Oil, Chemical and Atomic Workers	1,550
Movers' Association of Greater Chicago, Individual Employers (Illinois)	Trucking	Teamsters (Ind.)	1,000
Shell Oil Company (California)	Petroleum	Oil, Chemical and Atomic Workers	1,150
Standard Oil Company, Amoco Oil Company, Texas City Refinery (Texas City, Tex.)	Petroleum	Oil, Chemical and Atomic Workers	1,300

¹Affiliated with AFL-CIO except where noted as independent (Ind.).

²Industry area (group of companies signing same contract).

Developments in Industrial Relations



Machinists-Boeing contract

The first settlement in the 1983 round of bargaining in the aerospace industry came when members of the Machinists union approved a 3-year contract with the Boeing Co. The contract, covering 26,000 workers in Seattle, Wash., Wichita, Kans., and Portland, Oreg., provided for wage and cost-of-living increases favoring workers in the top pay grades. It also established lower pay structures for new hires in the top grades, and significantly lower structures for those in the bottom grades.

Boeing maintained that the moves were necessary to alleviate a narrowing of the percentage pay differential between skilled and unskilled workers that had developed over the years. Much of the compression had resulted from the automatic cost-of-living pay adjustment clause, which provided that all employees would receive the same adjustment, regardless of grade.

The accord does not provide for specified wage increases, but it does provide for "prepayments" of cost-of-living adjustments. Under this approach, all employees will receive an immediate pay increase equal to 3 percent of their previous pay scale (excluding the current cost-of-living allowance of \$1.54 an hour). This advance will be "offset" against the following three automatic quarterly cost-of-living adjustments, which will be determined according to the existing formula of 1 cent an hour for each 0.3-point movement in the BLS Consumer Price Index for Urban Wage Earners and Clerical Workers (1967=100). A similar 3-percent prepayment, effective October 4, 1984, will not apply to lower rated workers (about 39 percent of all employees) and another prepayment on October 4, 1985, also will not apply to lower rated employees (about 26 percent of the total). Workers in the lowest pay grade moved to \$11.67 an hour, from \$11.38, after the October 1983 prepayment, while those in grade 11 (the highest) advanced to \$16.17, from \$14.98, and they will advance to \$16.64 on October 4, 1984, and to \$17.11 a year later.

Under the revised pay structure for new hires, employees will receive a 30-cent-an-hour progression increase after each succeeding 6 months of service until they attain the maximum for their grades. Minimum and maximum pay rates range from \$6.70-\$9.70 for grade 1 to \$12.70-\$15.70 for grade 11.

In another wage provision, all employees will receive

annual lump-sum payments (the first payment due by December 15, 1983) equal to 3 percent of gross earnings, including overtime pay, during the prior year.

Revisions in medical insurance included expanded coverage for nervous disorders, home health care, vision care, care for the terminally ill, and elective surgery. A union official said that the improved program was designed to encourage outpatient care and discourage hospital emergency room visits. A joint committee on cost containment was established. Other benefit changes included a pension rate of \$20 a month for each year of service after January 1, 1984, up from \$16. The rate for service up to 1981 also was increased to \$16, from \$14.

The parties also established a "new technology clause" under which Boeing will pay training expenses for employees who wish to improve their skills after work hours.

Shipbuilding settlements

A 2-month strike against eight shipyards ended when the Pacific Coast Shipbuilders Association settled with the Pacific Coast Metal Trades Council, consisting of 11 unions representing 10,000 workers. According to an official of the council, the work stoppage was mainly a delaying action to prevent "take aways" by the employers. The yards had been seeking a 10-percent wage cut, elimination of the automatic cost-of-living pay adjustment formula, removal of jurisdictional lines, and termination of seniority rights.

The settlement did not provide for a specified wage increase, but in the second and third years of the contract, workers' pay—usually \$13.50 an hour—will be subject to possible automatic quarterly cost-of-living adjustments, calculated at the existing rate of 1 cent an hour for each 1-point movement in the BLS Consumer Price Index for Urban Wage Earners and Clerical Workers (1967=100).

There were no changes in supplementary benefits, but employer financing was rearranged to provide for a larger infusion of money in the first year. During that year, employees will pay 35 cents per hour worked into the fund, dropping to a 20-cent rate in the second and third years. Under the prior 3-year contract, the rate was 25 cents.

The ninth member of the Shipbuilders Association, Tacoma Boatbuilding Co. of Tacoma, Wash., settled about 2 weeks later on the same terms. The company had temporarily withdrawn from the association because it contended

that it was being "misrepresented" in the negotiations. The shipyard estimated that only 1,500 of the 2,200 strikers would be recalled because of a reduction in production contracts and improvements in efficiency instituted by management during the stoppage. Tacoma had maintained some production during the strike by hiring 470 replacements, all of whom were terminated according to terms of the settlement.

These settlements were followed by one between the Metal Trades Council and Lockheed Shipbuilding and Construction Co. of Seattle, Wash. (Lockheed is not a member of the Shipbuilders Association.) The 39-month contract also did not provide for a specified wage increase and it suspended the automatic cost-of-living pay adjustment formula. Lockheed indicated that the wage restraint was necessary to aid it in competing with lower cost east and gulf coast shipyards.

The 2,400 employees will receive lump-sum payments of 25 cents for each hour worked during 6-month periods. The first distribution, in January 1984, will be for hours worked during the second half of 1983. The employees will receive an additional 25-cent-an-hour lump-sum payment under a new "productivity enhancement program." Payment will be contingent on completion of ships according to time schedules established by Lockheed.

On the gulf coast, the Ingalls Shipbuilding Division of Litton Systems, Inc. settled with a Pascagoula (Miss.) Metal Trades Council 4 months before the scheduled termination of the existing contract. An official of one of the unions in the council said the parties settled early to aid Ingalls in bidding on ship work by locking in labor costs for the 40-month contract period.

The accord provides for \$1.18 an hour in "new" wage increases—30 cents immediately and in February of 1985 and 1986, 10 cents in August 1985, and 18 cents in August 1986. The settlement also provided for immediate payment of 9 cents in quarterly cost-of-living adjustments scheduled for October 1983 and January 1984 under the supplanted agreement. The adjustments were part of a series that were guaranteed to be put into effect, regardless of the movement of the Consumer Price Index.

In a move to hold down costs, new employees will start at \$1 an hour below the basic rate for their job, with skilled trades workers advancing to the basic rate after 1 year and other employees receiving a 50-cent-an-hour increase after 1 year and an additional 50 cents after 2 years. Also, periodic pay progression increases for new apprentices were reduced.

Hospital-medical-surgical insurance was improved, with Ingalls contributing \$135 of the \$155-a-month premium cost during the first 4 months of the contract and \$154.50 of the \$174.50 cost during the balance of the contract. Previously, the shipyard contributed \$118 of the \$136 cost.

Basic pensions, which are based on employees' career contributions to the plan, were increased, as the percentage of earnings that workers are permitted to contribute was

raised. The minimum benefit, which applies if it is larger than the basic benefit, was increased to \$11 a month (from \$10) for each year of credited service.

The settlement covered 6,000 workers represented by the nine unions in the trades council and four other unions.

After the Ingalls settlement, employees of the Bath (Maine) Iron Works rejected a company request to discuss a "stretch-out" of scheduled wage increases and a possible extension of the current agreement to increase Bath's ability to compete with Ingalls for Navy ship contracts. Bath said that its current pay level for production workers was 12 cents an hour higher than at Ingalls and the disparity would rise to \$1.07 in January 1985.

David Ward, president of Local 6 of the Marine and Shipbuilding Workers, attributed the virtually unanimous rejection of the proposal to an antiunion attitude by management. The yard has about 8,000 employees, including 5,200 represented by Local 6.

Eastern's concession proposals rejected by unions

Eastern Airlines' 8-year history of financial and labor difficulties continued, as company chairman Frank Borman informed the 37,000 employees that accelerated operating losses left the airline with three choices: to shut down, to reorganize under protection of Federal bankruptcy law, or to "reduce the basic cost structure of the airline, and with 78 percent of the controllable costs [attributed to] labor, this is our choice." Borman's concession proposal called for all employees to take a 15-percent pay cut effective November 1, 1983. This would be followed by an additional 5-percent cut on January 1, 1984, if payroll costs could not be reduced through improved productivity. Other aspects of the proposal to help counter a record \$106.4 million loss during the first 7 months of the year included lower pay rates for workers hired after November 1, a 20- to 25-percent reduction in paid vacation time, increased deductibles on medical insurance, and a profit-sharing plan. The proposal also would terminate existing investment plans and reimburse employees the amounts they had paid.

The proposal was approved by 17,000 nonunion employees, but drew bitter responses from leaders of the three unions representing the remaining employees. Charles Bryan, head of District 100 of the Machinists union, said the proposed concessions would "wipe out" the contract for his 11,700 members. The 4,000 cockpit crew members, represented by the Air Line Pilots Association, also rejected the proposal.

Patricia Fink, leader of Local 553 of the Transport Workers, which represents 5,800 flight attendants, said her union could not consider any type of give-backs until they had a contract. Later, the local ended 18 months of negotiations by settling with Eastern just hours before the employees would have been permitted to strike under provisions of the Railway Labor Act. However, the future of the proposed 3-year accord was uncertain, as the local's executive board

differed with Fink by urging rank-and-file members to reject the contract.

The proposed terms included a 13-percent salary increase retroactive to January 1, 1983, a 3-percent increase on November 1, 1983, a 6-percent increase on January 1, 1984, and cancellation of a 3.5-percent employee contribution to a variable earnings plan. (See *Monthly Labor Review*, July 1983, pp. 40-41, for details of the Transport Workers previous contract and the Airline Pilots and Machinists settlements.) The proposal also called for Eastern to lower by attrition the number of foreign nationals on certain South American routes Eastern had obtained from Braniff Airways in 1982, and specified that all new routes in the area would be staffed by Local 553 members. Eastern's purchase agreement with Braniff had specified that the 300 positions on the contested routes be filled by residents of the Latin American countries, but a Federal judge later ordered Eastern to award the work to Transport Workers members or pay them the difference between their pay for domestic routes and the higher paying foreign routes.

Before the Transport Workers settlement, Borman had assured the three unions that Eastern would not file for protection under the Bankruptcy Act. In return, the unions, which had formed a committee entitled "Employees for Positive Action," agreed to consider the findings of a joint study of the carrier's financial condition to be conducted by two independent firms.

Ford's steelworkers accept concessions

Ford Motor Co. announced plans to close the steelmaking facility in its River Rouge complex in Dearborn, Mich., but reversed the decision after Auto Workers Local 600 agreed to more than \$4 an hour in wage-and-benefit concessions. After the settlement, Ford began recalling laid-off workers and announced plans to invest more than \$200 million in modernizing the facility. The company had been pressing for concessions for several years, contending that the facility was unable to compete with other steel producers because its wage-and-benefit costs were too high. According to Ford, 1983 costs were \$27 to \$28 an hour, about \$5 higher than at the other companies, and also \$5 higher than the compensation of other UAW-represented auto production workers elsewhere in the complex and at other Ford plants. In 1982, Ford began negotiating with a consortium of Japanese steel companies on a sale of the steelmaking operations, but the talks terminated in May of this year, reportedly because the Japanese companies concluded that the operating costs were too high. Ford then began shutting down parts of the operation, culminating in the total shutdown announcement that triggered the settlement.

The 34-month agreement, which expires July 31, 1986, covered 3,500 steelworkers, but 12,500 workers in the complex's engine, glass, and assembly operations also were permitted to vote. The union leaders apparently decided on this course to increase the chances of approval; the steel-

workers may have been inclined to vote against the proposal because they could have "bumped" fellow workers out of jobs elsewhere in the complex. The vote tally was 5,154 to 2,799 in favor of the proposals.

Provisions of the agreement included:

- A 99-cent-an-hour reduction in the incentive rate.
- A 20-percent reduction in incentive earnings.
- A 25-cent-an-hour reduction in the current cost-of-living allowance for incentive employees and a 10-cent reduction for nonincentive employees.
- Suspension of quarterly cost-of-living adjustments for incentive employees until December 1985, when they will resume, calculated at 1 cent an hour for each 0.30-point movement in a composite 1967 = 100 consumer price index derived from the Canadian and U.S. Government indexes. The 500 nonincentive workers employed in the power plant will be eligible for adjustments in December 1983 and March and June 1984 calculated at the 1 cent per 0.26-point movement that applies to all other Ford workers represented by the union. Thereafter, adjustments will be calculated at 1 cent for each 0.30-point movement in the index.
- A slowed pay progression for newly hired workers.
- A 1-week reduction in incentive workers' paid vacation in both 1984 and 1985, to be restored in 1986.
- Four fewer paid holidays for incentive workers in 1983 and 1984, to be restored in 1985.
- Reduced shift premiums.
- Time and one-quarter pay, instead of time and one-half, for nonovertime work on Sunday.
- A profit-sharing plan with a more liberal formula than the existing plan for other Ford workers.
- An "equality of sacrifice" provision requiring Ford to apply similar "economic adjustments" to the 800 non-union salaried employees.
- A requirement that all wage sacrifices be repaid to the workers if steel production is terminated during the contract period.
- Various commitments by the company regarding capital spending and production levels.

Casino employees get 5-year contract

In Atlantic City, N.J., Local 54 of the Hotel and Restaurant Employees and nine casino hotels negotiated a 5-year contract that specified wage-and-benefit improvements in each of the first 3 years, and provided for bargaining on these issues in each of the last 2 years. The specified wage increases for "nontipped" employees were 8 percent, or 50 cents an hour, immediately and 50 cents in the second and third years. "Tipped" employees will receive a 25-cent increase in each of the 3 years. Previously, cocktail and food servers, who make up a majority of the tipped workers, received \$3.375 an hour.

The parties also agreed to a "restructuring" of wages for

new employees, and extended the probationary period to 90 days, from 60.

One new benefit is a plan under which employees will receive a paid day off for every 3 months of good attendance. At the union's option, the employers will either increase their payment to the pension fund by 5 cents for each hour worked by employees with at least 1 year of service or increase their payment to the health and welfare plan by 3.35 cents for each hour worked by all employees. In the third year of the contract, the union can opt for employers to pay either an additional 4 cents an hour to the severance fund or an additional 2.5 cents to the health and welfare fund. The parties also agreed to a 5-cent-an-hour increase in financing of health and welfare benefits in the third year. The settlement covered more than 11,000 employees.

State government settlements

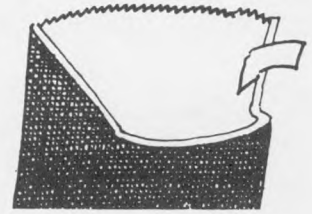
In Milwaukee, 5,200 members of the American Federation of Teachers were covered by a 3-year agreement that provided for salary increases of 4.75 percent retroactive to July 1, 1982, 5.8 percent retroactive to July 1, 1983, and 5 percent on July 1, 1984. After the 1984 increase, salaries for the 5,300 teachers will range from \$16,103 a year for a new teacher with a bachelor's degree to \$32,334 for a teacher with a master's degree and 64 additional graduate credits. The delay in replacing the previous agreement, which expired in June 1982, was attributed to intensive discussions

of numerous noneconomic issues. These discussions resulted in several changes the school board sought, including elimination of provisions specifying class size, the number of art, music, and physical education teachers in grade schools, and the number of teachers' aides.

The State of Wisconsin and its largest bargaining unit agreed on a 2-year contract calling for a wage freeze during the first year and a 3.84-percent salary increase on July 1, 1984. Despite the freeze, the 25,000 workers will receive an immediate increase in pay because the State agreed to assume the entire cost of retirement benefits, which equals 5 percent of employee earnings. Previously, the employees contributed one-fifth of the amount.

The workers, who are represented by the Wisconsin State Employees Union, might also realize some monetary or other gain under a new plan to encourage them to switch to health maintenance organizations. During the first year, the State will continue to pay 90 percent of the cost of the existing standard hospital-medical-surgical plan, or it will pay 107 percent of the cost of the least expensive alternate plan, whichever costs less. The employees will have the same choice in the second year, except that the figure will drop to 105 percent. Any resulting savings will be distributed to the workers during the contract period.

The settlement terms were similar to pay and benefit changes instituted earlier for nonunion employees.



Book Reviews

Defending the civil servant

The Case for Bureaucracy: A Public Administration Polemic. By Charles T. Goodsell. Chatham, N.J., Chatham House Publishers, Inc., 1983. 179 pp. \$8.95.

In this book, Professor Charles T. Goodsell takes on the task of defending bureaucracy. A defense of bureaucracy consisting of mere assertions should be quickly dismissed, but the author, a careful scholar, tackles each myth, accepted wisdom, and bit of folklore, and attacks them with facts and studies in an attempt to lay them to rest.

One of every six U.S. workers is a public employment bureaucrat, whether Federal, State, or local, and if private sector bureaucracies were included, the number would be substantially higher, the author points out. As a political and public administration scientist, Goodsell dissects all types of bureaucratic organizations but focuses on government at all levels, primarily because these institutions are viewed in a negative light.

As the author clearly underscores, different groups criticize bureaucracy for varying reasons, almost assuredly placing it and its employees in a no-win position. Liberals are critical because they believe it upholds the status quo while conservatives fear it seeks change for change's sake. Yet, as studies have indicated, the recipients of government service look favorably on the people and product they receive.

Even though the volume is larded with studies and statistics, the prose is entertaining and readable (which may contribute to its not being viewed as seriously as it should by academics). For it is this group the author hopes will look at and study the bureaucracy as it really exists, not as a monolith but as individual entities created to fill a need. The author reminds his readers that it is not them against us; rather, the bureaucracy is a creation of the Nation's elected officials who, in turn, enacted programs into existence that the people, in fact, wanted.

Only one basic criticism can be leveled, although not against the author personally. Goodsell's book, published in 1983, is already dated in at least one respect. He writes, "High level Federal civil servants may be dissatisfied over pay but that sentiment cannot be extrapolated into generalized dissatisfaction within the Federal work force. In fact, most sampled civil servants endorse their career choice strongly either retrospectively or prospectively." Unfortu-

nately, this may no longer be true. Recent polls indicate that new high levels of discontent exist among the top level staff over the pay for performance and proposed changes in the benefit program. These, today, are overriding issues which could hasten their exodus from government, despite previous good feelings about their career choice. For example, a survey involving 800 members of the Federal Executive Institute Alumni Association found that about 70 percent said they would advise bright, competent young people to seek careers in the private sector. The few who would recommend a civil service career said it was only because they believed government needs good people, not because it is rewarding. A general (nonscientific) poll conducted by *The Washington Post*, to which some 60,000 Federal workers responded, found that when asked if they would work for the government again, the response was a resounding "no." Still another report, issued by the Merit Systems Protection Board warned that the future quality of the government's senior executive corp could diminish over time because it is becoming less attractive to both persons outside government and to the middle managers already in the system.

Although not arranged in this order, Goodsell's book can easily be discussed by looking at three basic questions: what are the myths, who holds them, and why?

What are the myths? Poor service, surly attitudes, and truncated personalities are all attributed to bureaucrats. Welfare and law enforcement are the two areas most branded with these stereotypes. Yet, survey after survey conducted to determine how the recipients of government service view their treatment shows, in fact, that the public rates it good to excellent, is satisfied or very satisfied with it, and is and has been treated courteously. Lest government agencies be accused of conducting self-serving surveys, Goodsell includes studies by universities, all showing the same results. Even the much maligned Postal Service receives favorable ratings by those who relate their experience as recipients.

While the critics of bureaucracy point to the bigness and badness of it all, Goodsell attempts to dispel this by showing that, disaggregated by size of installation, government operations are small; 85 percent of the Federal and postal establishments have fewer than 25 employees and very few, 25 units, have 10,000 or more. Some of these large ones include the Veterans Administration's facilities in Chicago

and Los Angeles, Social Security in Baltimore, the Mint in Philadelphia, and civilian posts in San Diego and outside Dayton, Ohio. When State and local employees are similarly viewed as governmental units, this same fragmentation is seen.

What about the bureaucratic mentality, the inflexibility, blind adherence to rules, excessive caution, and risk avoidance that is bruited as at the heart of the government personality? Interestingly, when researchers have looked closely at these "facts," they have proven contrary to reality.

Who holds bureaucrats in disregard? Apparently public disdain is not uniform across the population, but varies by income, social class, education, race, and sex. While the number of surveys cited are few and dated, an admission made by the author, researchers have found that, while the general public holds favorable opinions, distinctions exist by income, sex, and education. People who have higher income and more education, males more than females, tend to be less favorably disposed toward civil servants. The opinion leaders of the country—writers, journalists, professors, businessmen, and politicians—are in this high income, well-educated group. Is it any wonder then that this group looks down to what could be described as low-status occupations? Of course, when community leaders believe this, the makeup of the bureaucracy becomes a self-fulfilling prophesy because persons seeking status look elsewhere for an honorable (and profitable) profession.

Why the Myth? After dissecting, analyzing, and refuting the conventional wisdom, the author correctly asks why these views continue to prevail. He turns up at least two functions: validation and justification. By validation he means it is simply easier on one's psyche to blame "red tape" or the petty functionary than our own failure to get the job, the income tax break, or select an objective of your choice. The second function of the myth is reinforced by justification to convince others. The political office-seeker points to the incompetent bureaucracy as the reason past policies failed to achieve the desired results. One can always point to the overstaffed bureaucracy without risking a rebuttal because it is accepted as a commonplace.

Both of these functions interact and, as the author says, are useful in diverting our attention from the factual situations, justifying self-righteousness, and silencing critics. Since bureaucracy is ever present and, even worse, contradicts another myth—the free entrepreneur and self-reliant spirit we all see in ourselves—it serves as a perfect target. In this day of budget deficits, it is an easy and relatively defenseless target. Forgotten, however, is that by economizing now, future costs may be much higher when government (Federal, State, and local) is forced to offer not comparable but higher wages and benefits to attract capable men and women. In the meantime, as the best workers leave, costs also increase because of reduced morale and efficiency. (A little publicized fact, and one that needs mentioning, is the high productivity growth of the Federal

Government relative to the private (nonfarm) sector, 1.5 percent compared to .8 percent per year from 1967 to 1981.)

To anyone interested in the other side of the bureaucracy story, Charles Goodsell's volume provides a good alternative—and unfortunately one of the few—to the prevalent negative theme.

—LUCRETIA DEWEY TANNER
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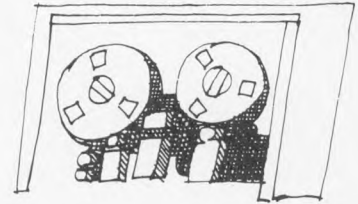
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A note on communications

The *Monthly Labor Review* welcomes communications that supplement, challenge, or expand on research published in its pages. To be considered for publication, communications should be factual and analytical, not polemical in tone. Communications should be addressed to the Editor-in-Chief, *Monthly Labor Review*, Bureau of Labor Statistics, U.S. Department of Labor, Washington, D.C. 20212.

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NOTES ON CURRENT LABOR STATISTICS

This section of the *Review* presents the principal statistical series collected and calculated by the Bureau of Labor Statistics. A brief introduction to each group of tables provides definitions, notes on the data, sources, and other material usually found in footnotes.

Readers who need additional information are invited to consult the BLS regional offices listed on the inside front cover of this issue of the *Review*. Some general notes applicable to several series are given below.

Seasonal adjustment. Certain monthly and quarterly data are adjusted to eliminate the effect of such factors as climatic conditions, industry production schedules, opening and closing of schools, holiday buying periods, and vacation practices, which might otherwise mask short-term movements of the statistical series. Tables containing these data are identified as "seasonally adjusted." Seasonal effects are estimated on the basis of past experience. When new seasonal factors are computed each year, revisions may affect seasonally adjusted data for several preceding years.

Seasonally adjusted labor force data in tables 3-8 were revised in the February 1983 issue of the *Review*, to reflect experience through 1982.

Beginning in January 1980, the BLS introduced two major modifications in the seasonal adjustment methodology for labor force data. First, the data are being seasonally adjusted with a new procedure called X-11/ARIMA, which was developed at Statistics Canada as an extension of the standard X-11 method. A detailed description of the procedure appears in *The X-11 ARIMA Seasonal Adjustment Method* by Estela Bee Dagum (Statistics Canada Catalogue No. 12-564E, February 1980). The second change is that seasonal factors are now being calculated for use during the first 6 months of the year, rather than for the entire year, and then are calculated at mid-year for the July-December period. Revisions of historical data continue to be made only at the end of each calendar year.

Annual revision of the seasonally adjusted payroll data shown in tables 11, 13, and 15 were made in August 1981 using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in tables 29 and 30 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month to month and from quarter to quarter are published for numerous Consumer and Producer

Price Index series. However, seasonally adjusted indexes are not published for the U.S. average All Items CPI. Only seasonally adjusted percent changes are available for this series.

Adjustments for price changes. Some data are adjusted to eliminate the effect of changes in price. These adjustments are made by dividing current dollar values by the Consumer Price Index or the appropriate component of the index, then multiplying by 100. For example, given a current hourly wage rate of \$3 and a current price index number of 150, where 1967 = 100, the hourly rate expressed in 1967 dollars is \$2 ($\$3/150 \times 100 = \2). The resulting values are described as "real," "constant," or "1967" dollars.

Availability of information. Data that supplement the tables in this section are published by the Bureau of Labor Statistics in a variety of sources. Press releases provide the latest statistical information published by the Bureau; the major recurring releases are published according to the schedule given below. More information from household and establishment surveys is provided in *Employment and Earnings*, a monthly publication of the Bureau. Comparable household information is published in a two-volume data book—*Labor Force Statistics Derived From the Current Population Survey*, Bulletin 2096. Comparable establishment information appears in two data books—*Employment and Earnings, United States*, and *Employment and Earnings, States and Areas*, and their annual supplements. More detailed information on wages and other aspects of collective bargaining appears in the monthly periodical, *Current Wage Developments*. More detailed price information is published each month in the periodicals, the *CPI Detailed Report* and *Producer Prices and Price Indexes*.

Symbols

- p = preliminary. To improve the timeliness of some series, preliminary figures are issued based on representative but incomplete returns.
- r = revised. Generally, this revision reflects the availability of later data but may also reflect other adjustments.
- n.e.c. = not elsewhere classified.

Schedule of release dates for BLS statistical series

Series	Release date	Period covered	Release date	Period covered	Release date	Period covered	MLR table number
Employment situation	December 2	November	January 6	December	February 10	January	1-11
Producer Price Index	December 16	November	January 13	December	February 3	January	23-27
Consumer Price Index	December 21	November	January 24	December	February 24	January	19-22
Real earnings	December 21	November	January 24	December	February 24	January	12-16
Productivity and costs:							
Nonfarm business and manufacturing			January 25	4th quarter			28-31
Nonfinancial corporations					February 28	4th quarter	28-31
Major collective bargaining settlements			January 27	1983			35-36
Employment Cost Index			January 31	4th quarter			32-34
U.S. Import and Export Price Indexes					February 8	4th quarter	

EMPLOYMENT DATA FROM THE HOUSEHOLD SURVEY

EMPLOYMENT DATA in this section are obtained from the Current Population Survey, a program of personal interviews conducted monthly by the Bureau of the Census for the Bureau of Labor Statistics. The sample consists of about 60,000 households selected to represent the U.S. population 16 years of age and older. Households are interviewed on a rotating basis, so that three-fourths of the sample is the same for any 2 consecutive months.

Definitions

Employed persons include (1) all civilians who worked for pay any time during the week which includes the 12th day of the month or who worked unpaid for 15 hours or more in a family-operated enterprise and (2) those who were temporarily absent from their regular jobs because of illness, vacation, industrial dispute, or similar reasons. Members of the Armed Forces stationed in the United States are also included in the employed total. A person working at more than one job is counted only in the job at which he or she worked the greatest number of hours.

Unemployed persons are those who did not work during the survey week, but were available for work except for temporary illness and had looked for jobs within the preceding 4 weeks. Persons who did not look for work because they were on layoff or waiting to start new jobs within the next 30 days are also counted among the unemployed. The **overall unemployment rate** represents the number unemployed as a percent of the labor force, including the resident Armed Forces. The **unemployment**

rate for all civilian workers represents the number unemployed as a percent of the civilian labor force.

The **labor force** consists of all employed or unemployed civilians plus members of the Armed Forces stationed in the United States. Persons **not in the labor force** are those not classified as employed or unemployed; this group includes persons who are retired, those engaged in their own housework, those not working while attending school, those unable to work because of long-term illness, those discouraged from seeking work because of personal or job market factors, and those who are voluntarily idle. The **noninstitutional population** comprises all persons 16 years of age and older who are not inmates of penal or mental institutions, sanitariums, or homes for the aged, infirm, or needy, and members of the Armed Forces stationed in the United States. The **labor force participation rate** is the proportion of the noninstitutional population that is in the labor force. The **employment-population ratio** is total employment (including the resident Armed Forces) as a percent of the noninstitutional population.

Notes on the data

From time to time, and especially after a decennial census, adjustments are made in the Current Population Survey figures to correct for estimating errors during the preceding years. These adjustments affect the comparability of historical data presented in table 1. A description of these adjustments and their effect on the various data series appear in the Explanatory Notes of *Employment and Earnings*.

Data in tables 2-8 are seasonally adjusted, based on the seasonal experience through December 1982.

Year	Noninstitutional population	Labor force										Not in labor force
		Number	Percent of population	Employed						Unemployed		
				Total	Percent of population	Resident Armed Forces	Civilian			Number	Percent of labor force	
							Total	Agriculture	Nonagricultural industries			
1950	106,164	63,377	59.7	60,087	56.6	1,169	58,918	7,160	51,758	3,288	5.2	42,787
1955	111,747	67,087	60.0	64,234	57.5	2,064	62,170	6,450	55,722	2,852	4.3	44,660
1960	119,106	71,489	60.0	67,639	56.8	1,861	65,778	5,458	60,318	3,852	5.4	46,617
1965	128,459	76,401	59.5	73,034	56.9	1,946	71,088	4,361	66,726	3,366	4.4	52,058
1966	130,180	77,892	59.8	75,017	57.6	2,122	72,895	3,979	68,915	2,875	3.7	52,288
1967	132,092	79,565	60.2	76,590	58.0	2,218	74,372	3,844	70,527	2,975	3.7	52,527
1968	134,281	80,990	60.3	78,173	58.2	2,253	75,920	3,817	72,103	2,817	3.5	53,291
1969	136,573	82,972	60.8	80,140	58.7	2,238	77,902	3,606	74,296	2,832	3.4	53,602
1970	139,203	84,889	61.0	80,796	58.0	2,118	78,678	3,463	75,215	4,093	4.8	54,315
1971	142,189	86,355	60.7	81,340	57.2	1,973	79,367	3,394	75,972	5,016	5.8	55,834
1972	145,939	88,847	60.9	83,966	57.5	1,813	82,153	3,484	78,669	4,882	5.5	57,091
1973	148,870	91,203	61.3	86,838	58.3	1,774	85,064	3,470	81,594	4,355	4.8	57,667
1974	151,841	93,670	61.7	88,515	58.3	1,721	86,794	3,515	83,279	5,156	5.5	58,171
1975	154,831	95,453	61.6	87,524	56.5	1,678	85,845	3,408	82,438	7,929	8.3	59,377
1976	157,818	97,826	62.0	90,420	57.3	1,668	88,752	3,331	85,421	7,406	7.6	59,991
1977	160,689	100,665	62.6	93,673	58.3	1,656	92,017	3,283	88,734	6,991	6.9	60,025
1978	153,541	103,882	63.5	97,679	59.7	1,631	96,048	3,387	92,661	6,202	6.0	59,659
1979	166,460	106,559	64.0	100,421	60.3	1,597	98,824	3,347	95,477	6,137	5.8	59,900
1980	169,349	108,544	64.1	100,907	59.6	1,604	99,303	3,364	95,938	7,637	7.0	60,806
1981	171,775	110,315	65.2	102,042	59.4	1,645	100,397	3,368	97,030	8,273	7.5	61,460
1982	173,939	111,872	64.3	101,194	58.2	1,668	99,526	3,401	96,125	10,578	9.5	62,067

2. Employment status of the population, including Armed Forces in the United States, by sex, seasonally adjusted

[Numbers in thousands]

Employment status and sex	Annual average		1982			1983									
	1981	1982	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
TOTAL															
Noninstitutional population ^{1,2}	171,775	173,939	174,549	174,718	174,864	175,021	175,169	175,320	175,465	175,622	175,793	175,970	176,122	176,297	176,474
Labor force ²	110,315	111,872	112,420	112,702	112,794	112,215	112,217	112,148	112,457	112,418	113,600	113,539	113,943	114,063	113,510
Participation rate ³	64.2	64.3	64.4	64.5	64.5	64.1	64.1	64.0	64.1	64.0	64.6	64.5	64.7	64.7	64.3
Total employed ²	102,042	101,194	100,844	100,796	100,758	100,770	100,727	100,767	101,129	101,226	102,454	102,949	103,245	103,640	103,623
Employment-population rate ⁴	59.4	58.2	57.8	57.7	57.6	57.6	57.5	57.5	57.6	57.6	58.3	58.5	58.6	58.8	58.7
Resident Armed Forces ¹	1,645	1,668	1,668	1,660	1,665	1,667	1,664	1,664	1,671	1,669	1,668	1,664	1,682	1,695	1,695
Civilian employed	100,397	99,526	99,176	99,136	99,093	99,103	99,063	99,103	99,458	99,557	100,786	101,285	101,563	101,945	101,928
Agriculture	3,368	3,401	3,413	3,466	3,411	3,412	3,393	3,375	3,371	3,367	3,522	3,527	3,489	3,290	3,202
Nonagricultural industries	97,030	96,125	95,763	95,670	95,682	95,691	95,670	95,729	96,088	96,190	97,264	97,758	98,074	98,655	98,726
Unemployed	8,273	10,678	11,576	11,906	12,036	11,446	11,490	11,381	11,328	11,192	11,146	10,590	10,699	10,423	9,886
Unemployment rate ⁵	7.5	9.5	10.3	10.6	10.7	10.2	10.2	10.1	10.1	10.0	9.8	9.3	9.4	9.1	8.7
Not in labor force	61,460	62,067	62,129	62,016	62,070	62,806	62,952	63,172	63,008	63,204	62,193	62,431	62,179	62,234	62,965
Men, 16 years and over															
Noninstitutional population ^{1,2}	82,023	83,052	83,323	83,402	83,581	83,652	83,720	83,789	83,856	83,931	84,014	84,099	84,173	84,261	84,344
Labor force ²	63,486	63,979	64,300	64,414	64,384	63,916	63,996	63,957	64,207	64,276	64,816	64,864	64,814	64,944	64,690
Participation rate ³	77.4	77.0	77.2	77.2	77.0	76.4	76.4	76.3	76.6	76.6	77.1	77.1	77.0	77.1	76.7
Total employed ²	58,909	57,800	57,456	57,408	57,338	57,283	57,234	57,300	57,476	57,656	58,464	58,625	58,570	58,826	58,912
Employment-population rate ⁴	71.8	69.6	69.0	68.8	68.6	68.5	68.4	68.4	68.5	68.7	69.6	69.7	69.6	69.8	69.8
Resident Armed Forces ¹	1,512	1,527	1,524	1,516	1,529	1,531	1,528	1,528	1,530	1,528	1,525	1,521	1,538	1,549	1,543
Civilian employed	57,397	56,271	55,932	55,892	55,809	55,752	55,706	55,772	55,946	56,128	56,939	57,104	57,032	57,277	57,369
Unemployed	4,577	6,179	6,844	7,006	7,046	6,633	6,762	6,657	6,731	6,620	6,351	6,238	6,244	6,118	5,778
Unemployment rate ⁵	7.2	9.7	10.6	10.9	10.9	10.4	10.6	10.4	10.5	10.3	9.8	9.6	9.6	9.4	8.9
Women, 16 years and over															
Noninstitutional population ^{1,2}	89,751	90,887	91,226	91,316	91,283	91,369	91,449	91,532	91,609	91,691	91,779	91,871	91,949	92,036	92,129
Labor force ²	46,829	47,894	48,120	48,288	48,410	48,299	48,220	48,191	48,251	48,142	48,784	48,675	49,130	49,119	48,819
Participation rate ³	52.2	52.7	52.7	52.9	53.0	52.9	52.7	52.6	52.7	52.5	53.2	53.0	53.4	53.4	53.0
Total employed ²	43,133	43,395	43,388	43,388	43,420	43,486	43,493	43,467	43,653	43,569	43,990	44,324	44,675	44,814	44,712
Employment-population rate ⁴	48.1	47.7	47.6	47.5	47.6	47.6	47.6	47.5	47.7	47.5	47.9	48.2	48.6	48.7	48.5
Resident Armed Forces ¹	133	139	144	144	136	136	136	136	141	141	143	143	144	146	152
Civilian employed	43,000	43,256	43,244	43,244	43,284	43,350	43,357	43,331	43,512	43,428	43,847	44,181	44,531	44,668	44,560
Unemployed	3,696	4,499	4,732	4,900	4,990	4,813	4,727	4,724	4,597	4,572	4,995	4,351	4,455	4,305	4,108
Unemployment rate ⁵	7.9	9.4	9.8	10.1	10.3	10.0	9.8	9.8	9.5	9.5	9.8	8.9	9.1	8.8	8.4

¹ The population and Armed Forces figures are not adjusted for seasonal variation.

² Includes members of the Armed Forces stationed in the United States.

³ Labor force as a percent of the noninstitutional population.

⁴ Total employed as a percent of the noninstitutional population.

⁵ Unemployment as a percent of the labor force (including the resident Armed Forces).

3. Employment status of the civilian population by sex, age, race, and Hispanic origin, seasonally adjusted

[Numbers in thousands]

	Annual average		1982			1983									
	1981	1982	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
TOTAL															
Civilian noninstitutional population ¹	170,130	172,271	172,881	173,058	173,199	173,354	173,305	173,656	173,794	173,953	174,125	174,306	174,440	174,602	174,779
Civilian labor force	108,670	110,204	110,752	111,042	111,129	110,548	110,553	110,484	110,786	110,749	111,932	111,875	112,261	112,368	111,815
Participation rate	63.9	64.0	64.1	64.2	64.2	63.8	63.7	63.6	63.7	63.7	64.3	64.2	64.4	64.4	64.0
Employed	100,397	99,526	99,176	99,136	99,093	99,103	99,063	99,103	99,458	99,557	100,786	101,285	101,563	101,945	101,928
Employment-population ratio ²	59.0	57.8	57.4	57.3	57.2	57.2	57.1	57.1	57.2	57.2	57.9	58.1	58.2	58.4	58.3
Agriculture	33,68	3,401	3,413	3,466	3,411	3,412	3,393	3,375	3,371	3,367	3,522	3,527	3,489	3,290	3,202
Nonagricultural industries	97,030	96,125	95,763	95,670	95,682	95,691	95,670	95,729	96,088	96,190	97,264	97,758	98,074	98,655	98,726
Unemployed	8,273	10,678	11,576	11,906	12,036	11,446	11,490	11,381	11,328	11,192	11,146	10,590	10,699	10,423	9,886
Unemployment rate	7.6	9.7	10.5	10.7	10.8	10.4	10.4	10.3	10.2	10.1	10.0	9.5	9.5	9.3	8.8
Not in labor force	61,460	62,067	62,129	62,016	62,070	62,806	62,952	63,172	63,008	63,204	62,193	62,431	62,179	62,234	62,964
Men, 20 years and over															
Civilian noninstitutional population ¹	72,419	73,644	73,984	74,094	74,236	74,339	74,434	74,528	74,611	74,712	74,814	74,927	75,012	75,115	75,216
Civilian labor force	57,197	57,980	58,363	58,454	58,443	58,048	58,177	58,170	58,454	58,506	58,804	59,016	58,945	59,053	58,947
Participation rate	79.0	78.7	78.9	78.9	78.7	78.1	78.2	78.1	78.3	78.3	78.6	78.8	78.6	78.6	78.4
Employed	53,582	52,891	52,649	52,589	52,534	52,452	52,428	52,589	52,752	52,901	53,516	53,808	53,771	53,928	54,121
Employment-population ratio ²	74.0	71.8	71.2	71.0	70.8	70.6	70.4	70.6	70.7	70.8	71.5	71.8	71.7	71.8	72.0
Agriculture	2,384	2,422	2,444	2,434	2,389	2,426	2,374	2,420	2,404	2,443	2,529	2,544	2,496	2,431	2,362
Nonagricultural industries	51,199	50,469	50,205	50,155	50,145	50,025	50,054	50,169	50,348	50,458	50,987	51,264	51,275	51,497	51,758
Unemployed	3,615	5,089	5,714	5,865	5,909	5,597	5,749	5,581	5,702	5,605	5,288	5,208	5,174	5,125	4,826
Unemployment rate	6.3	8.8	9.8	10.0	10.1	9.6	9.9	9.6	9.8	9.6	9.0	8.8	8.8	8.7	8.2
Women, 20 years and over															
Civilian noninstitutional population ¹	81,497	82,864	83,271	83,385	83,383	83,490	83,593	83,699	83,794	83,899	84,008	84,122	84,224	84,333	84,443
Civilian labor force	42,485	43,699	43,936	44,112	44,286	44,201	44,216	44,166	44,238	44,228	44,648	44,685	45,003	45,132	44,930
Participation rate	52.1	52.7	52.8	52.9	53.1	52.9	52.9	52.8	52.8	52.7	53.1	53.1	53.4	53.5	53.2
Employed	39,590	40,086	40,112	40,123	40,215	40,238	40,291	40,277	40,509	40,484	40,789	41,164	41,394	41,614	41,583
Employment-population ratio ²	48.6	48.4	48.2	48.1	48.2	48.2	48.2	48.1	48.3	48.3	48.6	48.9	49.1	49.3	49.2
Agriculture	604	601	578	590	628	625	657	647	622	597	636	607	630	574	581
Nonagricultural industries	38,986	39,485	39,534	39,533	39,587	39,613	39,634	39,630	39,886	39,887	40,153	40,557	40,764	41,040	41,002
Unemployed	2,895	3,613	3,824	3,989	4,071	3,963	3,925	3,889	3,729	3,744	3,859	3,521	3,609	3,518	3,347
Unemployment rate	6.8	8.3	8.7	9.0	9.2	9.0	8.9	8.8	8.4	8.5	8.6	7.9	8.0	7.8	7.4
Both sexes, 16 to 19 years															
Civilian noninstitutional population ¹	16,214	15,763	15,625	15,579	15,580	15,525	15,478	15,429	15,389	15,342	15,303	15,257	15,204	15,154	15,120
Civilian labor force	8,988	8,526	8,453	8,476	8,400	8,299	8,160	8,148	8,094	8,015	8,480	8,173	8,313	8,184	7,938
Participation rate	55.4	54.1	54.1	54.4	53.9	53.5	52.7	52.8	52.6	52.2	55.4	53.6	54.7	54.0	52.5
Employed	7,225	6,549	6,415	6,424	6,344	6,413	6,345	6,237	6,197	6,172	6,481	6,313	6,397	6,404	6,225
Employment-population ratio ²	44.6	41.5	41.1	41.2	40.7	41.3	41.0	40.4	40.3	40.2	42.4	41.4	42.1	42.3	41.2
Agriculture	380	378	391	442	394	361	362	308	344	327	357	376	362	285	259
Nonagricultural industries	6,845	6,171	6,024	5,982	5,950	6,052	5,983	5,929	5,853	5,845	6,124	5,937	6,035	6,119	5,966
Unemployed	1,763	1,977	2,038	2,052	2,056	1,886	1,815	1,897	1,843	1,897	1,960	1,860	1,916	1,780	1,713
Unemployment rate	19.6	23.2	24.1	24.2	24.5	22.7	22.2	23.5	23.4	23.0	23.6	22.8	23.0	21.8	21.6
White															
Civilian noninstitutional population ¹	147,908	149,441	149,838	149,887	150,056	150,129	150,187	150,382	150,518	150,671	150,810	150,959	151,003	151,021	151,175
Civilian labor force	95,052	96,143	96,453	96,719	96,864	96,176	95,987	95,996	96,287	96,362	97,250	97,341	97,602	97,605	97,300
Participation rate	64.3	64.3	64.4	64.5	64.6	64.1	63.9	63.8	64.0	64.0	64.5	64.5	64.6	64.6	64.4
Employed	88,709	87,903	88,477	87,435	87,443	87,466	87,194	87,324	87,709	87,777	88,880	89,382	89,573	89,719	89,798
Employment-population ratio ²	60.0	58.8	58.4	58.3	58.3	58.3	58.1	58.1	58.3	58.3	58.9	59.2	59.3	59.4	59.4
Unemployed	6,343	8,241	8,976	9,284	9,421	8,711	8,793	8,672	8,577	8,585	8,370	7,959	8,029	7,885	7,502
Unemployment rate	6.7	8.6	9.3	9.6	9.7	9.1	9.2	9.0	8.9	8.9	8.6	8.2	8.2	8.1	7.7
Black															
Civilian noninstitutional population ¹	18,219	18,584	18,692	18,723	18,740	18,768	18,796	18,823	18,851	18,880	18,911	18,942	18,966	18,994	19,026
Civilian labor force	11,086	11,331	11,398	11,475	11,522	11,542	11,548	11,554	11,631	11,672	11,783	11,764	11,745	11,729	11,502
Participation rate	60.8	61.0	61.0	61.3	61.5	61.5	61.4	61.4	61.7	61.8	62.3	62.1	61.9	61.7	60.5
Employed	9,355	9,189	9,102	9,159	9,127	9,142	9,276	9,253	9,209	9,270	9,352	9,469	9,398	9,505	9,420
Employment-population ratio ²	51.3	49.4	48.7	48.9	48.7	48.7	49.4	49.2	48.8	49.1	49.5	50.0	49.6	50.0	49.5
Unemployed	1,731	2,142	2,296	2,316	2,395	2,400	2,271	2,302	2,423	2,402	2,432	2,295	2,347	2,224	2,082
Unemployment rate	15.6	18.9	20.1	20.2	20.8	20.8	19.7	19.9	20.8	20.6	20.6	19.5	20.0	19.0	18.1
Hispanic origin															
Civilian noninstitutional population ¹	9,310	9,400	9,474	9,355	9,301	9,328	9,368	9,551	9,665	9,747	9,738	9,640	9,690	9,700	9,745
Civilian labor force	5,972	5,983	5,973	5,923	5,898	5,981	5,992	6,074	6,206	6,167	6,253	6,079	6,124	6,200	6,142
Participation rate	64.1	63.6	63.0	63.3	63.4	64.1	64.0	63.6	64.2	63.3	64.2	63.1	63.2	63.9	63.0
Employed	5,348	5,158	5,075	5,012	4,998	5,053	5,042	5,088	5,304	5,318	5,379	5,331	5,333	5,390	5,385
Employment-population ratio ²	57.4	54.9	53.6	53.6	53.7	54.2	53.8	53.3	54.9	54.6	55.2	55.3	55.0	55.6	55.3
Unemployed	624	825	898	911	900	929	950	986	902	849	874	748	790	811	756
Unemployment rate	10.4	13.8	15.0	15.4	15.3	15.5	15.8	16.2	14.5	13.8	14.0	12.3	12.9	13.1	12.3

¹The population figures are not seasonally adjusted.

²Civilian employment as a percent of the civilian noninstitutional population.

NOTE: Detail for the above race and Hispanic-origin groups will not sum to totals because data

for the "other races" groups are not presented and Hispanics are included in both the white and black population groups.

4. Selected employment indicators, seasonally adjusted

[Numbers in thousands]

Selected categories	Annual average		1982			1983									
	1981	1982	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
CHARACTERISTIC															
Civilian employed, 16 years and over	100,397	99,526	99,176	99,136	99,093	99,103	99,063	99,103	99,458	99,557	100,786	101,285	101,563	101,945	101,928
Men	57,397	56,271	55,932	55,892	55,809	55,752	55,706	55,772	55,946	56,128	56,939	57,104	57,032	57,277	57,369
Women	43,000	43,256	43,244	43,244	43,284	43,350	43,357	43,331	43,512	43,428	43,847	44,181	44,531	44,668	44,560
Married men, spouse present	38,882	38,074	37,852	37,641	37,507	37,450	37,428	34,452	37,523	37,560	37,925	38,293	38,308	38,253	38,241
Married women, spouse present	23,915	24,053	24,081	23,985	24,155	24,205	24,070	24,171	24,371	24,229	24,335	24,640	24,972	24,996	24,971
Women who maintain families	4,998	5,099	5,107	5,025	4,985	5,038	5,050	5,097	4,944	4,942	5,016	5,088	5,104	5,124	5,187
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture:															
Wage and salary workers	1,464	1,505	1,576	1,584	1,547	1,637	1,624	1,515	1,560	1,595	1,636	1,663	1,664	1,585	1,481
Self-employed workers	1,638	1,636	1,621	1,628	1,627	1,587	1,541	1,585	1,607	1,558	1,608	1,583	1,566	1,473	1,514
Unpaid family workers	266	261	229	241	224	231	223	260	208	229	263	259	245	237	224
Nonagricultural industries:															
Wage and salary workers	89,543	88,462	88,064	87,936	87,976	87,813	87,794	87,912	88,187	88,395	89,354	89,765	89,995	90,813	90,663
Government	15,689	15,562	15,436	15,514	15,477	15,386	15,501	15,452	15,518	15,523	15,498	15,615	15,697	15,549	15,594
Private industries	73,853	72,945	72,628	72,422	72,499	72,427	72,293	72,459	72,668	72,872	73,856	74,150	74,299	75,265	75,069
Private households	1,208	1,207	1,216	1,221	1,163	1,162	1,232	1,235	1,205	1,228	1,317	1,286	1,290	1,295	1,291
Other	72,645	71,738	71,412	71,201	71,336	71,265	71,061	71,225	71,463	71,644	72,539	72,864	73,009	73,969	73,778
Self-employed workers	7,097	7,262	7,332	7,349	7,335	7,465	7,385	7,453	7,528	7,408	7,493	7,598	7,658	7,660	7,703
Unpaid family workers	390	401	403	382	383	380	353	342	353	335	345	320	376	376	415
PERSONS AT WORK¹															
Nonagricultural industries	91,377	90,552	90,232	90,238	90,219	90,903	90,207	90,271	92,267	90,941	90,539	92,253	91,986	93,737	93,324
Full-time schedules	74,339	72,245	71,394	71,442	71,499	71,786	71,564	71,878	73,594	72,975	72,978	74,004	73,495	74,883	75,167
Part time for economic reasons	4,499	5,852	6,903	6,411	6,425	6,845	6,481	6,202	6,082	5,928	5,636	5,789	6,106	6,106	5,670
Usually work full time	1,738	2,169	2,381	2,228	2,153	2,200	2,097	1,927	1,871	1,685	1,702	1,809	1,718	1,798	1,575
Usually work part time	2,761	3,683	4,022	4,183	4,272	4,645	4,384	4,275	4,211	4,243	4,027	3,826	4,071	4,309	4,095
Part time for noneconomic reasons	12,539	12,455	12,435	12,385	12,295	12,271	12,162	12,191	12,592	12,038	11,833	12,614	12,701	12,748	12,488

¹Excludes persons "with a job but not at work" during the survey period for such reasons as vacation, illness, or industrial disputes.

5. Selected unemployment indicators, seasonally adjusted

[Unemployment rates]

Selected categories	Annual average		1982			1983									
	1981	1982	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
CHARACTERISTIC															
Total, all civilian workers	7.6	9.7	10.4	10.7	10.8	10.4	10.4	10.3	10.2	10.1	10.0	9.5	9.5	9.3	8.8
Both sexes, 16 to 19 years	19.6	23.2	24.1	24.2	24.5	22.7	22.2	23.5	23.4	23.0	23.6	22.8	23.0	21.8	21.6
Men, 20 years and over	6.3	8.8	9.8	10.0	10.1	9.6	9.9	9.6	9.8	9.6	9.0	8.8	8.8	8.7	8.2
Women, 20 years and over	6.8	8.3	8.7	9.0	9.2	9.0	8.9	8.8	8.4	8.5	8.6	7.9	8.0	7.8	7.4
White, total	6.7	8.6	9.3	9.6	9.7	9.1	9.2	9.0	8.9	8.9	8.6	8.2	8.2	8.1	7.7
Both sexes, 16 to 19 years	17.3	20.4	21.5	21.2	21.6	20.0	19.7	21.4	20.4	19.8	20.0	19.5	19.8	17.9	18.5
Men, 16 to 19 years	17.9	21.7	23.0	22.6	22.8	21.2	21.1	22.9	21.7	20.2	19.8	20.4	21.1	18.7	20.1
Women, 16 to 19 years	16.6	19.0	19.9	19.8	20.4	18.7	18.2	19.7	19.0	19.4	20.2	18.5	18.4	17.1	16.7
Men, 20 years and over	5.6	7.8	8.8	9.1	9.2	8.4	8.7	8.5	8.6	8.6	7.8	7.7	7.7	7.8	7.3
Women, 20 years and over	5.9	7.3	7.6	8.0	8.1	7.8	7.7	7.4	7.2	7.3	7.4	6.7	6.7	6.6	6.3
Black, total	15.6	18.9	2.1	20.2	20.8	20.8	19.7	19.9	20.8	20.6	20.6	19.5	20.0	19.0	18.1
Both sexes, 16 to 19 years	41.4	48.0	47.7	49.8	49.5	45.7	45.4	43.5	49.0	48.2	50.6	48.1	53.0	52.0	48.3
Men, 16 to 19 years	40.7	48.9	49.2	53.0	52.5	45.9	45.3	44.5	48.0	53.1	51.1	47.6	56.8	54.8	43.9
Women, 16 to 19 years	42.2	47.1	45.9	46.2	46.2	45.5	45.4	42.3	50.0	42.3	50.0	48.8	48.9	48.7	53.3
Men, 20 years and over	13.5	17.8	19.6	19.2	20.5	19.7	18.7	18.8	20.3	19.8	19.2	18.7	18.4	16.9	16.0
Women, 20 years and over	13.4	15.4	16.2	16.5	16.5	18.2	17.0	17.7	17.0	17.1	17.0	16.0	16.4	16.1	15.8
Hispanic origin, total	10.4	13.8	15.0	15.4	15.3	15.5	15.8	16.2	14.5	13.8	14.0	12.3	12.9	13.1	12.3
Married men, spouse present	4.3	6.5	7.5	7.6	7.8	7.1	7.2	7.1	7.1	7.0	6.6	6.1	6.3	6.1	5.8
Married women, spouse present	6.0	7.4	7.9	8.2	8.2	7.8	7.6	7.5	7.3	7.5	7.8	7.0	6.9	6.8	6.3
Women who maintain families	10.4	11.7	11.3	12.5	13.2	13.2	13.0	13.5	13.2	12.9	12.8	11.6	11.6	12.2	11.1
Full-time workers	7.3	9.6	10.5	10.6	10.8	10.3	10.4	10.3	10.2	9.9	9.7	9.4	9.4	9.2	8.7
Part-time workers	9.4	10.5	10.3	11.3	11.1	10.6	10.1	10.5	10.6	11.0	12.1	10.2	10.1	10.0	9.8
Unemployed 15 weeks and over	2.1	3.2	3.8	4.1	4.3	4.2	4.2	4.2	3.9	4.1	4.1	3.9	3.6	3.4	3.2
Labor force time lost ¹	8.5	11.0	12.0	12.4	12.7	11.7	12.0	11.8	11.4	11.5	10.8	10.4	10.6	10.6	10.0
INDUSTRY															
Nonagricultural private wage and salary workers	7.7	10.1	11.0	11.4	11.6	10.8	10.8	10.8	10.5	10.5	10.0	9.6	9.8	9.4	9.0
Mining	6.0	13.4	17.9	18.1	18.1	17.1	18.4	18.6	20.3	22.7	18.2	16.6	14.8	17.2	11.3
Construction	15.6	20.0	22.3	21.8	22.0	20.0	19.7	20.3	20.3	20.4	18.1	18.0	18.1	18.2	15.2
Manufacturing	8.3	12.3	14.1	14.8	14.8	13.0	13.3	12.8	12.4	12.3	11.5	10.5	11.2	10.2	9.5
Durable goods	8.2	13.3	16.0	17.0	17.1	14.7	14.7	14.1	13.5	13.5	12.2	11.2	11.6	10.9	10.2
Non-durable goods	8.4	10.8	11.2	11.4	11.4	10.5	11.4	11.1	10.8	10.5	10.4	9.6	10.6	9.2	8.5
Transportation and public utilities	5.2	6.8	7.9	8.3	8.0	7.8	8.0	7.8	7.7	7.0	7.8	7.0	8.0	7.4	7.4
Wholesale and retail trade	8.1	10.0	10.4	10.6	11.0	10.8	10.9	11.2	10.4	10.1	10.2	9.7	9.8	9.6	9.9
Finance and service industries	5.9	6.9	7.1	7.7	7.9	7.6	7.3	7.2	7.3	7.5	7.2	7.3	7.2	7.1	6.9
Government workers	4.7	4.9	4.9	5.1	5.1	5.7	6.0	5.9	6.1	5.8	5.1	5.5	5.0	4.9	5.0
Agricultural wage and salary workers	12.1	14.7	13.3	15.6	16.5	16.0	16.4	16.3	17.2	17.0	17.0	14.2	14.6	16.1	17.1

¹Aggregate hours lost by the unemployed and persons on part time for economic reasons as a percent of potentially available labor force hours.

6. Unemployment rates by sex and age, seasonally adjusted

[Civilian workers]

Sex and age	Annual average		1982			1983									
	1981	1982	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Total, 16 years and over	7.6	9.7	10.5	10.7	10.8	10.4	10.4	10.3	10.2	10.1	10.0	9.5	9.5	9.3	8.8
16 to 24 years	14.9	17.8	18.7	19.0	18.9	18.3	18.3	18.1	18.1	18.1	17.6	16.8	17.4	16.5	16.3
16 to 19 years	19.6	23.2	24.1	24.2	24.5	22.7	22.2	23.5	23.4	23.0	23.6	22.8	23.0	21.8	21.6
16 to 17 years	21.4	24.9	26.1	26.3	27.4	24.1	23.4	25.1	26.3	26.2	25.8	25.3	24.7	23.9	23.9
18 to 19 years	18.4	22.1	22.9	22.8	22.7	21.7	21.5	22.7	21.8	21.1	22.4	21.1	22.0	20.4	20.3
20 to 24 years	12.3	14.9	15.8	16.3	16.0	16.1	16.3	15.4	15.4	15.6	14.4	13.8	14.5	13.8	13.7
25 years and over	5.4	7.4	8.1	8.3	8.6	8.1	8.2	8.1	8.0	7.9	7.9	7.4	7.3	7.3	6.8
25 to 54 years	5.8	7.9	8.7	8.9	9.1	8.7	8.7	8.7	8.5	8.5	8.3	7.8	7.8	7.7	7.2
55 years and over	3.6	5.0	5.5	5.7	5.8	5.4	5.4	5.4	5.6	5.3	5.6	5.3	5.1	5.1	5.0
Men, 16 years and over	7.4	9.9	10.9	11.1	11.2	10.6	10.8	10.7	10.7	10.6	10.0	9.8	9.9	9.7	9.2
16 to 24 years	15.7	19.1	20.2	20.6	20.5	19.7	19.8	19.5	19.4	19.7	18.4	18.4	18.8	17.6	17.4
16 to 19 years	20.1	24.4	25.6	25.7	25.8	23.9	23.6	25.3	24.4	23.9	23.7	23.8	24.7	22.9	22.7
16 to 17 years	22.0	26.4	28.8	28.2	29.0	24.4	23.6	26.0	27.0	27.4	25.4	27.9	26.2	23.5	24.0
18 to 19 years	18.8	23.1	23.4	24.1	24.0	23.5	23.4	24.8	22.8	22.0	22.9	21.2	23.7	22.5	21.9
20 to 24 years	13.2	16.4	17.4	18.0	17.8	17.6	17.8	16.6	17.0	17.6	15.7	15.7	15.9	15.0	14.8
25 years and over	5.1	7.5	8.5	8.6	8.8	8.2	8.5	8.4	8.5	8.2	7.8	7.6	7.5	7.6	7.0
25 to 54 years	5.5	8.0	9.1	9.2	9.4	8.7	9.1	9.0	8.9	8.8	8.4	8.1	8.0	8.1	7.4
55 years and over	3.5	5.1	6.0	6.2	6.3	5.8	5.7	5.8	6.3	5.8	5.4	5.4	5.3	5.6	5.4
Women, 16 years and over	7.9	9.4	9.9	10.2	10.3	10.0	9.8	9.8	9.6	9.5	9.9	9.0	9.1	8.8	8.4
16 to 24 years	14.0	16.2	17.0	17.2	17.1	16.7	16.6	16.6	16.5	16.2	16.6	14.9	15.9	15.2	15.1
16 to 19 years	19.0	21.9	22.5	22.6	23.0	21.5	20.7	21.5	22.4	21.9	23.4	21.6	21.2	20.5	20.4
16 to 17 years	20.7	23.2	22.9	24.2	25.6	23.7	23.2	24.2	25.5	24.7	26.2	22.3	23.1	24.3	23.8
18 to 19 years	17.9	21.0	22.3	21.4	21.3	19.8	19.3	20.5	20.7	20.2	21.9	21.0	20.3	17.9	18.5
20 to 24 years	11.2	13.2	14.0	14.4	14.0	14.2	14.5	14.1	13.5	13.3	12.9	11.5	13.0	12.5	12.5
25 years and over	5.9	7.3	7.6	7.9	8.2	7.9	7.7	7.7	7.4	7.6	7.9	7.2	7.0	6.8	6.4
25 to 54 years	6.3	7.7	8.2	8.5	8.8	8.7	8.2	8.3	7.9	8.2	8.2	7.6	7.5	7.3	6.8
55 years and over	3.8	4.8	4.8	4.9	5.1	4.8	4.9	4.7	4.5	4.6	5.8	5.3	4.7	4.4	4.4

7. Unemployed persons by reason for unemployment, seasonally adjusted

[Numbers in thousands]

Reason for unemployment	Annual average		1982			1983									
	1981	1982	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Job losers	4,257	6,258	7,325	7,369	7,295	6,704	6,809	6,823	6,750	6,766	6,513	6,193	6,202	6,002	5,542
On layoff	1,430	2,127	2,519	2,531	2,468	2,131	2,024	1,945	1,948	1,943	1,822	1,719	1,658	1,591	1,373
Other job losers	2,837	4,141	4,806	4,838	4,827	4,573	4,784	4,878	4,803	4,823	4,691	4,474	4,545	4,411	4,169
Job leavers	923	840	803	794	826	839	848	901	815	801	782	738	767	866	889
Reentrants	2,102	2,384	2,322	2,546	2,529	2,623	2,491	2,426	2,488	2,365	2,425	2,429	2,524	2,351	2,375
New entrants	981	1,185	1,296	1,244	1,288	1,174	1,161	1,155	1,245	1,251	1,440	1,225	1,214	1,247	1,102
PERCENT DISTRIBUTION															
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	51.6	58.7	62.4	61.5	60.6	59.1	60.2	60.4	59.7	60.5	58.4	58.5	57.9	57.3	55.9
On layoff	17.3	19.9	21.4	21.2	20.5	18.8	17.9	17.2	17.2	17.4	16.3	16.2	15.5	15.2	13.9
Other job losers	34.3	38.8	40.9	40.5	40.1	40.3	42.3	43.1	42.5	43.1	42.0	42.3	42.4	42.1	42.1
Job leavers	11.2	7.9	6.8	6.6	6.9	7.4	7.5	8.0	7.2	7.2	7.0	7.0	7.2	8.3	9.0
Reentrants	25.4	22.3	19.8	21.3	21.8	23.1	22.0	21.5	22.0	21.1	21.7	22.9	23.6	22.5	24.0
New entrants	11.9	11.1	11.0	10.4	10.7	10.4	10.3	10.2	11.0	11.2	12.9	11.6	11.3	11.9	11.1
PERCENT OF CIVILIAN LABOR FORCE															
Job losers	3.9	5.7	6.6	6.6	6.6	6.1	6.2	6.2	6.1	6.1	5.8	5.5	5.5	5.3	5.0
Job leavers	.8	.8	.7	.7	.7	.8	.8	.8	.7	.7	.7	.7	.7	.8	.8
Reentrants	1.9	2.2	2.1	2.3	2.4	2.4	2.3	2.2	2.2	2.1	2.2	2.2	2.2	2.1	2.1
New entrants	.9	1.1	1.2	1.1	1.2	1.1	1.1	1.0	1.1	1.1	1.3	1.1	1.1	1.1	1.0

8. Duration of unemployment, seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average		1982			1983									
	1981	1982	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Less than 5 weeks	3,449	3,883	3,930	3,963	4,019	3,536	3,731	3,440	3,547	3,519	3,655	3,498	3,660	3,774	3,512
5 to 14 weeks	2,539	3,311	3,511	3,549	3,460	3,328	3,106	3,140	3,154	2,979	2,915	2,794	3,026	2,810	2,746
15 weeks and over	2,285	3,485	4,167	4,524	4,732	4,634	4,618	4,615	4,356	4,517	4,589	4,417	4,020	3,850	3,613
15 to 26 weeks	1,122	1,708	1,951	2,191	2,125	1,928	1,928	1,875	1,662	1,731	1,638	1,830	1,573	1,344	1,363
27 weeks and over	1,162	1,776	2,216	2,333	2,607	2,706	2,689	2,740	2,694	2,786	2,951	2,587	2,447	2,506	2,250
Mean duration in weeks	13.7	15.6	17.1	17.3	18.0	19.4	19.0	19.1	19.0	20.4	22.0	21.7	19.9	20.2	20.1
Median duration in weeks	6.9	8.7	9.6	10.0	10.1	11.5	9.6	10.3	11.3	12.3	11.8	9.9	8.9	9.1	9.3

EMPLOYMENT, HOURS, AND EARNINGS DATA FROM ESTABLISHMENT SURVEYS

EMPLOYMENT, HOURS, AND EARNINGS DATA in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by 189,000 establishments representing all industries except agriculture. In most industries, the sampling probabilities are based on the size of the establishment; most large establishments are therefore in the sample. (An establishment is not necessarily a firm; it may be a branch plant, for example, or warehouse.) Self-employed persons and others not on a regular civilian payroll are outside the scope of the survey because they are excluded from establishment records. This largely accounts for the difference in employment figures between the household and establishment surveys.

Definitions

Employed persons are all persons who received pay (including holiday and sick pay) for any part of the payroll period including the 12th of the month. Persons holding more than one job (about 5 percent of all persons in the labor force) are counted in each establishment which reports them.

Production workers in manufacturing include blue-collar worker supervisors and all nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 12-17 include production workers in manufacturing and mining; construction workers in construction; and nonsupervisory workers in transportation and public utilities; in wholesale and retail trade; in finance, insurance, and real estate; and in services industries. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

Earnings are the payments production or nonsupervisory workers receive during the survey period, including premium pay for overtime or late-shift work but excluding irregular bonuses and other special payments. **Real earnings** are earnings adjusted to reflect the effects of changes in consumer prices. The deflator for this series is derived from the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W). The **Hourly Earnings Index** is calculated from average hourly earnings data adjusted to exclude the effects of two types of changes that are unrelated to underlying wage-rate developments: fluctuations in overtime premiums

in manufacturing (the only sector for which overtime data are available) and the effects of changes and seasonal factors in the proportion of workers in high-wage and low-wage industries.

Hours represent the average weekly hours of production or nonsupervisory workers for which pay was received and are different from standard or scheduled hours. **Overtime hours** represent the portion of gross average weekly hours which were in excess of regular hours and for which overtime premiums were paid.

The Diffusion Index, introduced in table 17 of the May issue, represents the percent of 186 nonagricultural industries in which employment was rising over the indicated period. One-half of the industries with unchanged employment are counted as rising. In line with Bureau practice, data for the 3-, 6-, and 9-month spans are seasonally adjusted, while that for the 12-month span is unadjusted. The diffusion index is useful for measuring the dispersion of economic gains or losses and is also an economic indicator.

Notes on the data

Establishment data collected by the Bureau of Labor Statistics are periodically adjusted to comprehensive counts of employment (called "benchmarks"). The latest complete adjustment was made with the release of May 1983 data, published in the July 1983 issue of the *Review*. Consequently, data published in the *Review* prior to that issue are not necessarily comparable to current data. Unadjusted data have been revised back to April 1981; seasonally adjusted data have been revised back to January 1978. Unadjusted data from April 1982 forward, and seasonally adjusted data from January 1979 forward are subject to revision in future benchmarks. Earlier comparable unadjusted and seasonally adjusted data are published in a *Supplement to Employment and Earnings* (unadjusted data from April 1977 through February 1983 and seasonally adjusted data from January 1974 through February 1983) and in *Employment and Earnings, United States, 1909-78*, BLS Bulletin 1312-11 (for prior periods).

A comprehensive discussion of the differences between household and establishment data on employment appears in Gloria P. Green, "Comparing employment estimates from household and payroll surveys," *Monthly Labor Review*, December 1969, pp. 9-20. See also *BLS Handbook of Methods*, Bulletin 2134-1 (Bureau of Labor Statistics, 1982).

9. Employment by industry, selected years, 1950-82

[Nonagricultural payroll data, in thousands]

Year	Total	Private sector	Goods-producing				Service-producing							Government		
			Total	Mining	Construction	Manufacturing	Total	Transportation and public utilities	Wholesale and retail trade			Finance, insurance, and real estate	Services	Total	Federal	State and local
									Total	Wholesale trade	Retail trade					
1950	45,197	39,170	18,506	901	2,364	15,241	26,691	4,034	9,386	2,635	6,751	1,888	5,357	6,026	1,928	4,098
1955	50,641	43,727	20,513	792	2,839	16,882	30,128	4,141	10,535	2,926	7,610	2,298	6,240	6,914	2,187	4,727
1960 ¹	54,189	45,836	20,434	712	2,926	16,796	33,755	4,004	11,391	3,143	8,248	2,629	7,378	8,353	2,270	6,083
1964	58,283	48,686	21,005	634	3,097	17,274	37,278	3,951	12,160	3,337	8,823	2,911	8,660	9,596	2,348	7,248
1965	60,765	50,589	21,926	632	3,232	18,062	38,839	4,036	12,716	3,466	9,250	2,977	9,036	10,074	2,378	7,696
1966	63,901	53,116	23,158	627	3,317	19,214	40,743	4,158	13,245	3,597	9,648	3,058	9,498	10,784	2,564	8,220
1967	65,803	54,413	23,308	613	3,248	19,447	42,495	4,268	13,606	3,689	9,917	3,185	10,045	11,391	2,719	8,672
1968	67,897	56,058	23,737	606	3,350	19,781	44,160	4,318	14,099	3,779	10,320	3,337	10,567	11,839	2,737	9,102
1969	70,384	58,189	24,361	619	3,575	20,167	46,023	4,442	14,706	3,907	10,798	3,512	11,169	12,195	2,758	9,437
1970	70,880	58,325	23,578	623	3,588	19,367	47,302	4,515	15,040	3,993	11,047	3,645	11,548	12,554	2,731	9,823
1971	71,214	58,331	22,935	609	3,704	18,623	48,278	4,476	15,352	4,001	11,351	3,772	11,797	12,881	2,696	10,185
1972	73,675	60,341	23,668	628	3,889	19,151	50,007	4,541	15,949	4,113	11,836	3,908	12,276	13,334	2,684	10,649
1973	76,790	63,058	24,893	642	4,097	20,154	51,897	4,656	16,607	4,277	12,329	4,045	12,857	13,732	2,663	11,068
1974	78,265	64,095	24,794	697	4,020	20,077	53,471	4,725	16,987	4,433	12,554	4,148	13,441	14,170	2,724	11,446
1975	76,945	62,259	22,600	752	3,525	18,323	54,345	4,542	17,060	4,415	12,645	4,165	13,892	14,686	2,748	11,937
1976	79,382	64,511	23,352	779	3,576	18,997	56,030	4,582	17,755	4,546	13,209	4,271	14,551	14,871	2,733	12,138
1977	82,471	67,344	24,346	813	3,851	19,582	58,125	4,713	18,516	4,708	13,808	4,467	15,303	15,127	2,727	12,399
1978	86,697	71,026	25,585	851	4,229	20,505	61,113	4,923	19,542	4,969	14,573	4,724	16,252	15,672	2,753	12,919
1979	89,823	73,876	26,461	958	4,463	21,040	63,363	5,136	20,192	5,204	14,989	4,975	17,112	15,947	2,773	13,147
1980	90,406	74,166	25,658	1,027	4,346	20,285	64,748	5,146	20,310	5,275	15,035	5,180	17,890	16,241	2,866	13,375
1981	91,156	75,126	25,497	1,139	4,188	20,170	65,659	5,165	20,547	5,358	15,189	5,298	18,619	16,031	2,772	13,259
1982	89,596	73,793	23,907	1,143	3,911	18,853	65,689	5,081	20,401	5,280	15,122	5,340	19,064	15,803	2,739	13,064

¹Data include Alaska and Hawaii beginning in 1959.

10. Employment by State

[Nonagricultural payroll data, in thousands]

State	September 1982	August 1983	September 1983 ^p	State	September 1982	August 1983	September 1983 ^p
Alabama	1,306.3	1,311.6	1,312.0	Montana	275.9	266.2	272.0
Alaska	216.8	230.3	224.5	Nebraska	605.6	592.6	597.5
Arizona	1,022.5	1,011.7	1,052.7	Nevada	410.8	419.1	424.3
Arkansas	727.2	724.9	743.4	New Hampshire	399.9	402.2	403.8
California	9,803.2	9,800.3	9,973.7	New Jersey	3,099.2	3,123.2	3,123.2
Colorado	1,308.0	1,330.1	1,345.8	New Mexico	477.7	482.3	487.1
Connecticut	1,429.5	1,407.0	1,442.1	New York	7,224.6	7,161.6	7,212.6
Delaware	262.2	264.5	263.8	North Carolina	2,346.7	2,329.3	2,392.6
District of Columbia	590.6	600.3	588.6	North Dakota	254.1	252.2	256.3
Florida	3,707.3	3,786.8	3,882.5	Ohio	4,153.3	4,085.6	4,158.7
Georgia	2,207.7	2,236.7	2,267.3	Oklahoma	1,229.9	1,195.7	1,214.2
Hawaii	394.0	400.7	388.7	Oregon	967.7	948.3	966.4
Idaho	320.4	315.9	326.5	Pennsylvania	4,535.1	4,456.0	4,481.7
Illinois	4,582.9	4,511.8	4,540.6	Rhode Island	394.5	392.3	396.4
Indiana	2,022.5	1,988.8	2,018.6	South Carolina	1,158.1	1,164.6	1,182.9
Iowa	1,033.6	993.3	1,023.1	South Dakota	232.1	234.4	237.8
Kansas	911.8	897.2	916.4	Tennessee	1,686.4	1,681.1	1,704.1
Kentucky	1,170.3	1,155.9	1,175.3	Texas	6,233.4	6,112.9	6,168.4
Louisiana	1,606.2	1,573.2	1,585.9	Utah	564.7	559.3	572.4
Maine	417.5	428.0	422.9	Vermont	204.2	204.7	208.1
Maryland	1,663.9	1,673.7	1,684.4	Virginia	2,139.0	2,147.8	2,179.6
Massachusetts	2,625.4	2,585.6	2,636.1	Washington	1,582.7	1,570.2	1,595.7
Michigan	3,190.8	3,165.9	3,235.7	West Virginia	605.3	591.4	588.9
Minnesota	1,716.1	1,712.4	1,735.3	Wisconsin	1,882.6	1,851.3	1,872.0
Mississippi	795.0	776.8	794.8	Wyoming	221.7	214.6	219.2
Missouri	1,929.2	1,909.2	1,931.8	Virgin Islands	35.5	35.6	34.2

^p = preliminary.

11. Employment by industry division and major manufacturing group, seasonally adjusted

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual average		1982			1983									
	1981	1982	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept. ^P	Oct. ^P
TOTAL	91,156	89,596	88,938	88,785	88,665	88,885	88,746	88,814	89,101	89,421	89,844	90,152	89,735	90,753	91,073
PRIVATE SECTOR	75,126	73,793	73,158	73,013	72,907	73,132	73,004	73,090	73,377	73,677	74,123	74,472	74,074	75,000	75,395
GOODS-PRODUCING	25,497	23,907	23,287	23,131	23,061	23,186	23,049	23,030	23,159	23,347	23,518	23,724	23,830	23,943	24,167
Mining	1,139	1,143	1,082	1,066	1,053	1,037	1,014	1,006	997	994	1,003	1,017	1,023	1,027	1,038
Construction	4,188	3,911	3,847	3,843	3,815	3,905	3,790	3,757	3,786	3,860	3,933	3,974	4,014	4,040	4,089
Manufacturing	20,170	18,853	18,358	18,222	18,193	18,244	18,245	18,267	18,376	18,493	18,582	18,733	18,793	18,876	19,040
Production workers	14,020	12,790	12,368	12,252	12,241	12,291	12,303	12,323	12,435	12,531	12,615	12,756	12,803	12,867	13,036
Durable goods	12,109	11,100	10,685	10,577	10,559	10,594	10,608	10,617	10,689	10,788	10,844	10,961	11,022	11,084	11,227
Production workers	8,294	7,350	6,992	6,900	6,892	6,931	6,949	6,961	7,035	7,115	7,169	7,278	7,329	7,383	7,520
Lumber and wood products	666	603	605	608	614	625	631	638	651	662	679	688	699	704	712
Furniture and fixtures	464	433	426	427	429	430	427	433	440	446	450	459	457	459	464
Stone, clay, and glass products	638	578	565	559	554	557	557	559	565	570	573	577	582	585	589
Primary metal industries	1,122	922	840	823	816	817	810	816	820	828	830	839	840	849	861
Fabricated metal products	1,590	1,435	1,378	1,362	1,359	1,364	1,364	1,362	1,369	1,379	1,384	1,391	1,410	1,412	1,430
Machinery, except electrical	2,498	2,267	2,122	2,088	2,066	2,048	2,042	2,030	2,031	2,064	2,066	2,094	2,109	2,115	2,135
Electric and electronic equipment	2,094	2,016	1,976	1,975	1,957	1,974	1,981	1,988	1,999	2,010	2,030	2,047	2,043	2,081	2,110
Transportation equipment	1,898	1,744	1,691	1,661	1,696	1,710	1,729	1,723	1,743	1,757	1,762	1,794	1,807	1,803	1,839
Instruments and related products	730	716	705	700	695	695	693	691	690	689	687	687	692	696	701
Miscellaneous manufacturing	408	386	377	374	373	374	374	377	381	383	383	385	383	380	386
Nondurable goods	8,061	7,753	7,673	7,645	7,634	7,650	7,637	7,650	7,687	7,705	7,738	7,772	7,771	7,792	7,813
Production workers	5,727	5,440	5,376	5,352	5,349	5,360	5,354	5,362	5,400	5,416	5,446	5,478	5,474	5,484	5,516
Food and kindred products	1,671	1,638	1,636	1,632	1,626	1,626	1,620	1,619	1,633	1,632	1,643	1,638	1,627	1,633	1,611
Tobacco manufactures	70	68	66	63	69	69	67	66	66	66	65	65	62	63	64
Textile mill products	823	750	733	727	727	726	726	730	733	736	745	746	752	752	758
Apparel and other textile products	1,244	1,164	1,148	1,141	1,140	1,150	1,148	1,143	1,149	1,153	1,159	1,180	1,175	1,178	1,191
Paper and allied products	689	662	653	654	653	653	652	652	654	656	657	658	659	661	666
Printing and publishing	1,266	1,269	1,265	1,263	1,263	1,266	1,265	1,269	1,274	1,276	1,281	1,284	1,289	1,290	1,298
Chemicals and allied products	1,109	1,079	1,066	1,064	1,059	1,057	1,056	1,056	1,058	1,058	1,056	1,059	1,056	1,061	1,062
Petroleum and coal products	214	201	201	200	199	200	199	199	199	198	198	197	195	195	194
Rubber and miscellaneous plastics products	737	701	689	685	685	688	691	699	707	716	721	732	739	742	752
Leather and leather products	238	221	216	216	213	215	214	216	214	214	213	213	217	217	217
SERVICE-PRODUCING	65,659	65,689	65,651	65,654	65,604	65,699	65,697	65,784	65,942	66,074	66,326	66,428	65,905	66,810	66,906
Transportation and public utilities	5,165	5,081	5,033	5,019	5,008	4,979	4,966	4,963	4,988	4,993	4,992	4,984	4,341	5,027	5,034
Wholesale and retail trade	20,547	20,401	20,344	20,320	20,256	20,355	20,343	20,350	20,329	20,356	20,494	20,529	20,580	20,613	20,669
Wholesale trade	5,358	5,280	5,237	5,212	5,192	5,185	5,181	5,176	5,180	5,197	5,222	5,229	5,249	5,273	5,284
Retail trade	15,189	15,122	15,107	15,108	15,064	15,170	15,162	15,174	15,149	15,159	15,272	15,300	15,331	15,340	15,385
Finance, insurance, and real estate	5,298	5,340	5,350	5,356	5,367	5,374	5,384	5,391	5,423	5,435	5,451	5,465	5,488	5,496	5,501
Services	18,619	19,064	19,144	19,187	19,215	19,238	19,262	19,356	19,478	19,546	19,668	19,770	19,835	19,921	20,024
Government	16,031	15,803	15,780	15,772	15,758	15,753	15,742	15,724	15,724	15,744	15,721	15,680	15,661	15,753	15,678
Federal	2,772	2,739	2,742	2,746	2,747	2,748	2,742	2,742	2,749	2,756	2,742	2,738	2,733	2,741	2,732
State and local	13,259	13,064	13,038	13,026	13,011	13,005	13,000	12,982	12,975	12,988	12,979	12,942	12,928	13,012	12,946

p = preliminary.

NOTE: See "Notes on the data" for a description of the most recent benchmark revision.

12. Hours and earnings, by industry division, selected years, 1950-82

[Gross averages, production or nonsupervisory workers on nonagricultural payrolls]

Year	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings
	Private sector			Mining			Construction			Manufacturing		
1950	\$53.13	39.8	\$1.34	\$67.16	37.9	\$1.77	\$69.68	37.4	\$1.86	\$58.32	40.5	\$1.44
1955	67.72	39.6	1.71	89.54	40.7	2.20	90.90	37.1	2.45	75.30	40.7	1.85
1960 ¹	80.67	38.6	2.09	105.04	40.4	2.60	112.57	36.7	3.07	89.72	39.7	2.26
1964	91.33	38.7	2.36	117.74	41.9	2.81	132.06	37.2	3.55	102.97	40.7	2.53
1965	95.45	38.8	2.46	123.52	42.3	2.92	138.38	37.4	3.70	107.53	41.2	2.61
1966	98.82	38.6	2.56	130.24	42.7	3.05	146.26	37.6	3.89	112.19	41.4	2.71
1967	101.84	38.0	2.68	135.89	42.6	3.19	154.95	37.7	4.11	114.49	40.6	2.82
1968	107.73	37.8	2.85	142.71	42.6	3.35	164.49	37.3	4.41	122.51	40.7	3.01
1969	114.61	37.7	3.04	154.80	43.0	3.60	181.54	37.9	4.79	129.51	40.6	3.19
1970	119.83	37.1	3.23	164.40	42.7	3.85	195.45	37.3	5.24	133.33	39.8	3.35
1971	127.31	36.9	3.45	172.14	42.4	4.06	211.67	37.2	5.69	142.44	39.9	3.57
1972	136.90	37.0	3.70	189.14	42.6	4.44	221.19	36.5	6.06	154.71	40.5	3.82
1973	145.39	36.9	3.94	201.40	42.4	4.75	235.89	36.8	6.41	166.46	40.7	4.09
1974	154.76	36.5	4.24	219.14	41.9	5.23	249.25	36.6	6.81	176.80	40.0	4.42
1975	163.53	36.1	4.53	249.31	41.9	5.95	266.08	36.4	7.31	190.79	39.5	4.83
1976	175.45	36.1	4.86	273.90	42.4	6.46	283.73	36.8	7.71	209.32	40.1	5.22
1977	189.00	36.0	5.25	301.20	43.4	6.94	295.65	36.5	8.10	228.90	40.3	5.68
1978	203.70	35.8	5.69	332.88	43.4	7.67	318.69	36.8	8.66	249.27	40.4	6.17
1979	219.91	35.7	6.16	365.07	43.0	8.49	342.99	37.0	9.27	269.34	40.2	6.70
1980	235.10	35.3	6.66	397.06	43.3	9.17	367.78	37.0	9.94	288.62	39.7	7.27
1981	255.20	35.2	7.25	439.75	43.7	10.04	299.26	36.9	10.82	318.00	39.8	7.99
1982	266.92	34.8	7.67	459.23	42.6	10.78	426.45	36.7	11.62	330.65	38.9	8.50
	Transportation and public utilities			Wholesale and retail trade			Finance, insurance, and real estate			Services		
1950				\$44.55	40.5	\$1.10	\$50.52	37.7	\$1.34			
1955				55.16	39.4	1.40	63.92	37.6	1.70			
1960 ¹				66.01	38.6	1.71	75.14	37.2	2.02			
1964	\$118.78	41.1	\$2.89	74.66	37.9	1.97	85.79	37.3	2.30	\$70.03	36.1	\$1.94
1965	125.14	41.3	3.03	76.91	37.7	2.04	88.91	37.2	2.39	73.60	35.9	2.05
1966	128.13	41.2	3.11	79.39	37.1	2.14	92.13	37.3	2.47	77.04	35.5	2.17
1967	130.82	40.5	3.23	82.35	36.6	2.25	95.72	37.1	2.58	80.38	35.1	2.29
1968	138.85	40.6	3.42	87.00	36.1	2.41	101.75	37.0	2.75	83.97	34.7	2.42
1969	147.74	40.7	3.63	91.39	35.7	2.56	108.70	37.1	2.93	90.57	34.7	2.61
1970	155.93	40.5	3.85	96.02	35.3	2.72	112.67	36.7	3.07	96.66	34.4	2.81
1971	168.82	40.1	4.21	101.09	35.1	2.88	117.85	36.6	3.22	103.06	33.9	3.04
1972	187.86	40.4	4.65	106.45	34.9	3.05	122.98	36.6	3.36	110.85	33.9	3.27
1973	203.31	40.5	5.02	111.76	34.6	3.23	129.20	36.6	3.53	117.29	33.8	3.47
1974	217.48	40.2	5.41	119.02	34.2	3.48	137.61	36.5	3.77	126.00	33.6	3.75
1975	233.44	39.7	5.88	126.45	33.9	3.73	148.19	36.5	4.06	134.67	33.5	4.02
1976	256.71	39.8	6.45	133.79	33.7	3.97	155.43	36.4	4.27	143.52	33.3	4.31
1977	278.90	39.9	6.99	142.52	33.3	4.28	165.26	36.4	4.54	153.45	33.0	4.65
1978	302.80	40.0	7.57	153.64	32.9	4.67	178.00	36.4	4.89	163.67	32.8	4.99
1979	325.58	39.9	8.16	164.96	32.6	5.06	190.77	36.2	5.27	175.27	32.7	5.36
1980	351.25	39.6	8.87	176.46	32.2	5.48	209.60	36.2	5.79	190.71	32.6	5.85
1981	382.18	39.4	9.70	190.62	32.2	5.92	229.05	36.3	6.31	208.97	32.6	6.41
1982	401.70	39.0	10.30	198.10	31.9	6.21	245.44	36.2	6.78	224.94	32.6	6.90

¹Data include Alaska and Hawaii beginning in 1959.

13. Weekly hours, by industry division and major manufacturing group, seasonally adjusted

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1982			1983									
	1981	1982	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept. P	Oct. P
PRIVATE SECTOR	35.2	34.8	34.7	34.7	34.8	35.1	34.5	34.8	34.9	35.1	35.1	35.0	35.0	35.2	35.2
MANUFACTURING	39.8	38.9	38.9	39.0	39.0	39.7	39.2	39.5	40.1	40.0	40.1	40.2	40.3	40.8	40.6
Overtime hours	2.8	2.3	2.3	2.3	2.3	2.4	2.4	2.6	2.9	2.7	2.9	3.0	3.1	3.3	3.3
Durable goods	40.2	39.3	39.2	39.3	39.3	40.1	39.7	39.9	40.5	40.4	40.6	40.8	40.8	41.4	41.2
Overtime hours	2.8	2.2	2.1	2.1	2.2	2.2	2.3	2.5	2.8	2.6	2.8	3.0	3.1	3.4	3.4
Lumber and wood products	38.7	38.0	38.1	38.7	38.8	40.5	39.5	39.5	40.0	39.8	40.0	39.9	40.2	40.4	40.2
Furniture and fixtures	38.4	37.2	37.5	37.6	37.8	38.6	37.9	38.3	39.3	39.2	39.6	39.7	39.7	40.1	40.0
Stone, clay, and glass products	40.6	40.0	40.2	40.2	40.1	41.4	40.5	40.6	41.0	41.2	41.6	41.7	41.7	42.0	41.8
Primary metal industries	40.5	38.6	38.2	38.3	38.8	38.9	39.1	39.4	39.9	40.3	40.3	40.8	40.9	41.2	41.7
Fabricated metal products	40.3	39.2	39.0	39.2	39.2	39.9	39.6	39.7	40.5	40.4	40.5	40.7	40.9	41.6	41.3
Machinery, except electrical	40.9	39.7	39.3	39.3	39.3	39.6	39.4	39.7	40.2	40.0	40.4	40.7	40.7	41.2	41.2
Electric and electronic equipment	40.0	39.3	39.2	39.3	39.4	39.9	39.5	39.8	40.4	40.3	40.5	40.8	40.7	41.2	41.1
Transportation equipment	40.9	40.5	40.4	40.9	40.1	41.6	41.2	41.7	42.3	41.6	41.9	42.0	41.8	43.5	42.5
Instruments and related products	40.4	39.8	39.6	39.4	39.7	40.4	39.7	40.0	40.5	40.4	40.1	40.7	40.4	40.8	40.5
Nondurable goods	39.1	38.4	38.5	38.6	38.6	39.1	38.5	39.0	39.5	39.4	39.6	39.5	39.5	40.0	39.7
Overtime hours	2.8	2.5	2.6	2.5	2.5	2.6	2.6	2.7	3.0	2.9	3.0	3.0	3.1	3.1	3.1
Food and kindred products	39.7	39.4	39.5	39.4	39.1	39.3	39.0	39.2	39.6	39.4	39.8	39.4	39.6	40.0	39.8
Textile mill products	39.6	37.5	38.3	38.8	38.9	39.7	39.0	39.6	40.6	40.4	40.7	40.7	40.9	41.3	40.7
Apparel and other textile products	35.7	34.7	35.1	35.0	35.1	36.6	35.2	35.6	36.2	36.1	36.1	35.8	36.2	36.8	36.4
Paper and allied products	42.5	41.8	41.7	41.7	41.7	41.8	41.4	42.1	42.4	42.7	42.8	42.9	42.9	43.2	43.1
Printing and publishing	37.3	37.1	37.1	37.1	37.1	37.5	37.1	37.4	37.7	37.4	37.6	37.7	37.5	37.8	38.0
Chemicals and allied products	41.6	40.9	40.8	40.7	40.9	41.0	41.0	41.2	41.5	41.6	41.9	41.8	41.6	41.8	41.5
Petroleum and coal products	43.2	43.9	43.8	44.1	44.4	44.5	44.4	44.9	43.5	43.6	43.8	43.7	43.5	43.2	43.8
Leather and leather products	36.7	35.6	35.4	35.8	35.8	36.3	34.9	36.0	37.0	36.8	36.8	37.4	37.2	37.8	37.3
TRANSPORTATION AND PUBLIC UTILITIES	39.4	39.0	38.8	38.9	38.9	38.6	38.6	38.8	38.8	38.9	38.9	38.9	39.3	39.4	39.4
WHOLESALE AND RETAIL TRADE	32.2	31.9	31.9	31.8	32.1	31.9	31.4	31.7	31.7	31.9	32.0	31.9	31.8	31.7	31.9
WHOLESALE TRADE	38.5	38.4	38.4	38.4	38.4	38.5	38.2	38.4	38.5	38.6	38.7	38.6	38.5	38.7	38.6
RETAIL TRADE	30.1	29.9	29.9	29.8	30.1	29.9	29.3	29.7	29.6	29.9	29.9	29.8	29.7	29.6	29.9
SERVICES	32.6	32.6	32.6	32.6	32.6	32.9	32.5	32.7	32.7	32.9	32.7	32.6	32.7	32.8	32.8

p = preliminary.

NOTE: See "Notes on the data" for a description of the most recent benchmark revision.

14. Hourly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1982			1983									
	1981	1982	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept. ^p	Oct. ^p
PRIVATE SECTOR	\$7.25	\$7.67	\$7.79	\$7.81	\$7.82	\$7.90	\$7.92	\$7.90	\$7.94	\$7.97	\$7.97	\$8.00	\$7.94	\$8.11	\$8.15
Seasonally adjusted	(¹)	(¹)	7.76	7.78	7.82	7.88	7.91	7.91	7.95	7.97	8.00	8.03	7.98	8.08	8.13
MINING	10.04	10.78	10.96	11.01	11.03	11.21	11.25	11.19	11.28	11.20	11.25	11.29	11.28	11.35	11.35
CONSTRUCTION	10.82	11.62	11.88	11.72	11.96	11.95	12.00	11.95	11.90	11.80	11.74	11.78	11.84	12.00	12.03
MANUFACTURING	7.99	8.50	8.56	8.61	8.68	8.71	8.75	8.74	8.77	8.78	8.81	8.86	8.79	8.90	8.91
Durable goods	8.54	9.06	9.13	9.17	9.24	9.26	9.31	9.29	9.31	9.34	9.37	9.40	9.34	9.48	9.47
Lumber and wood products	6.99	7.46	7.57	7.59	7.55	7.68	7.72	7.68	7.74	7.78	7.85	7.82	7.83	7.84	7.83
Furniture and fixtures	5.91	6.31	6.40	6.43	6.46	6.49	6.50	6.51	6.51	6.52	6.60	6.65	6.67	6.73	6.73
Stone, clay, and glass products	8.27	8.86	9.03	9.04	9.08	9.10	9.10	9.13	9.16	9.20	9.28	9.34	9.31	9.42	9.37
Primary metal industries	10.81	11.33	11.41	11.49	11.49	11.56	11.53	11.24	11.25	11.28	11.23	11.37	11.28	11.31	11.28
Fabricated metal products	8.19	8.78	8.85	8.90	8.96	8.98	9.04	9.05	9.07	9.08	9.11	9.10	9.12	9.22	9.20
Machinery, except electrical	8.81	9.29	9.36	9.38	9.43	9.40	9.44	9.46	9.48	9.59	9.63	9.65	9.61	9.71	9.76
Electric and electronic equipment	7.62	8.21	8.41	8.45	8.51	8.53	8.56	8.60	8.60	8.60	8.63	8.69	8.64	8.74	8.72
Transportation equipment	10.39	11.12	11.29	11.34	11.43	11.40	11.49	11.49	11.53	11.52	11.63	11.62	11.53	11.81	11.82
Instruments and related products	7.42	8.10	8.26	8.31	8.38	8.42	8.48	8.47	8.46	8.48	8.48	8.57	8.53	8.61	8.57
Miscellaneous manufacturing	5.97	6.43	6.50	6.56	6.67	6.72	6.73	6.75	6.76	6.82	6.81	6.82	6.81	6.85	6.87
Nondurable goods	7.18	7.73	7.80	7.88	7.95	7.97	7.99	8.00	8.03	8.03	8.04	8.11	8.05	8.10	8.12
Food and kindred products	7.44	7.89	7.88	8.00	8.06	8.09	8.11	8.16	8.20	8.17	8.17	8.12	8.13	8.15	8.15
Tobacco manufactures	8.88	9.78	9.50	10.16	9.63	9.87	9.96	10.43	10.61	10.74	10.91	10.84	10.24	9.86	9.79
Textile mill products	5.52	5.83	5.88	5.92	6.04	6.08	6.10	6.11	6.14	6.14	6.16	6.17	6.19	6.23	6.24
Apparel and other textile products	4.97	5.20	5.21	5.24	5.28	5.33	5.33	5.33	5.35	5.33	5.36	5.35	5.35	5.39	5.40
Paper and allied products	8.60	9.32	9.53	9.60	9.65	9.65	9.65	9.67	9.72	9.81	9.91	10.06	10.02	10.09	10.07
Printing and publishing	8.19	8.75	8.89	8.92	9.00	8.97	8.99	9.03	9.03	9.05	9.06	9.10	9.14	9.25	9.29
Chemicals and allied products	9.12	9.96	10.22	10.26	10.32	10.34	10.41	10.39	10.43	10.50	10.52	10.58	10.61	10.67	10.73
Petroleum and coal products	11.38	12.46	12.57	12.68	12.71	13.16	13.25	13.28	13.27	13.17	13.17	13.20	13.16	13.35	13.35
Rubber and miscellaneous plastics products	7.17	7.65	7.74	7.81	7.91	7.91	7.91	7.92	7.95	7.97	7.96	8.06	8.03	8.08	8.10
Leather and leather products	4.99	5.32	5.39	5.41	5.44	5.50	5.50	5.52	5.52	5.51	5.49	5.52	5.50	5.57	5.57
TRANSPORTATION AND PUBLIC UTILITIES	9.70	10.30	10.48	10.59	10.62	10.69	10.72	10.68	10.72	10.74	10.73	10.86	10.68	10.97	11.00
WHOLESALE AND RETAIL TRADE	5.92	6.21	6.27	6.30	6.27	6.42	6.45	6.43	6.45	6.46	6.46	6.48	6.47	6.54	6.56
WHOLESALE TRADE	7.56	8.02	8.13	8.14	8.20	8.31	8.28	8.27	8.34	8.36	8.35	8.42	8.41	8.48	8.54
RETAIL TRADE	5.25	5.47	5.53	5.56	5.54	5.65	5.69	5.68	5.69	5.71	5.71	5.72	5.71	5.77	5.77
FINANCE, INSURANCE, AND REAL ESTATE	6.31	6.78	6.97	7.00	7.01	7.19	7.22	7.19	7.23	7.31	7.26	7.30	7.25	7.33	7.43
SERVICES	6.41	6.90	7.04	7.08	7.12	7.18	7.19	7.17	7.20	7.23	7.20	7.18	7.18	7.31	7.40

¹Not available.
p = preliminary.

NOTE: See "Notes on the data" for a description of the most recent benchmark revision.

15. Hourly Earnings Index, for production workers on private nonagricultural payrolls, by industry

[1977 = 100]

Industry	Not seasonally adjusted					Seasonally adjusted						
	Oct. 1982	Aug. 1983	Sept. 1983 ^p	Oct. 1983 ^p	Percent change from: Oct. 1982 to Oct. 1983	Oct. 1982	June 1983	July 1983	Aug. 1983	Sept. 1983 ^p	Oct. 1983 ^p	Percent change from: Sept. 1983 to Oct. 1983
PRIVATE SECTOR (in current dollars)	150.8	154.6	156.2	156.9	4.1	150.7	154.8	155.2	155.0	155.9	156.8	0.5
Mining	162.1	167.3	168.1	168.4	3.9	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)
Construction	144.6	144.8	146.9	146.9	1.6	142.9	144.6	144.0	144.1	145.3	145.0	-.2
Manufacturing	154.7	157.6	158.4	158.7	2.6	154.7	157.8	158.2	158.1	158.3	158.7	.2
Transportation and public utilities	151.6	155.5	159.0	159.7	5.4	151.1	156.8	157.9	155.4	158.0	159.2	.8
Wholesale and retail trade	146.7	152.0	153.2	153.5	4.6	147.1	151.6	152.2	152.3	153.0	153.9	.6
Finance, insurance, and real estate	152.0	158.2	159.8	162.0	6.5	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)
Services	150.4	154.7	156.9	158.4	5.3	150.6	155.5	155.6	155.9	157.1	158.6	1.0
PRIVATE SECTOR (in constant dollars)	93.2	93.7	94.3	(²)	(²)	93.1	94.8	94.7	94.0	94.2	(²)	(²)

¹This series is not seasonally adjusted because the seasonal component is small relative to the trend-cycle, irregular components, or both, and consequently cannot be separated with sufficient precision.
²Not available.

p = preliminary.

NOTE: See "Notes on the data" for a description of the most recent benchmark revision.

16. Weekly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average		1982			1983									
	1981	1982	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept. P	Oct. P
PRIVATE SECTOR															
Current dollars	\$255.20	\$266.92	\$270.31	\$271.01	\$273.70	\$273.34	\$270.86	\$274.13	\$275.52	\$278.15	\$280.54	\$283.20	\$281.08	\$286.28	287.70
Seasonally adjusted	(1)	(1)	269.27	269.97	272.14	276.59	272.90	275.27	277.46	279.75	280.80	281.05	279.30	284.42	286.18
Constant (1977) dollars	170.13	167.87	167.06	167.81	170.11	169.88	168.24	169.85	169.55	170.33	171.37	172.37	170.35	172.77	(1)
MINING	438.75	459.23	459.22	458.02	465.47	476.43	464.63	467.74	469.25	472.64	478.13	475.31	481.66	489.19	492.59
CONSTRUCTION	399.26	426.45	440.75	423.09	440.13	440.96	424.80	434.98	436.73	441.32	444.95	450.00	449.92	454.80	447.52
MANUFACTURING															
Current dollars	318.00	330.65	333.84	338.37	344.60	341.43	339.50	346.10	349.05	350.32	355.04	354.40	353.36	363.12	362.64
Constant (1977) dollars	212.00	207.96	206.33	209.52	214.17	212.20	210.87	214.44	214.80	214.53	216.88	215.70	214.16	219.14	(1)
Durable goods	343.31	356.06	357.90	363.13	371.45	367.62	366.81	372.53	375.19	377.34	382.30	379.76	380.14	391.52	391.11
Lumber and wood products	270.51	283.48	289.93	292.97	293.70	300.29	299.54	302.59	308.05	312.76	320.28	313.58	319.46	318.30	316.33
Furniture and fixtures	226.94	234.73	243.20	244.34	250.00	243.38	243.10	251.29	253.89	254.28	263.34	258.69	267.47	271.22	273.24
Stone, clay, and glass products	335.76	354.40	366.62	366.12	366.83	364.91	358.54	368.85	374.64	380.88	390.69	391.35	391.95	398.47	395.41
Primary metal industries	437.81	437.34	431.30	440.07	450.41	450.84	450.82	456.23	451.13	452.33	454.82	460.49	457.97	468.23	464.74
Fabricated metal products	330.06	344.18	346.04	350.66	359.30	354.71	354.37	361.10	364.61	366.83	371.69	365.82	372.10	381.71	380.88
Machinery except electrical	360.33	368.81	365.98	371.45	380.97	372.24	371.94	377.40	379.20	382.64	388.09	386.97	387.28	399.08	400.16
Electric and electronic equipment	304.80	322.65	329.67	334.62	342.95	338.64	336.41	344.00	344.86	345.72	350.38	350.21	349.92	359.21	358.39
Transportation equipment	424.95	450.36	457.25	467.21	474.35	468.54	469.94	480.28	484.26	482.69	491.95	484.55	475.04	505.47	503.53
Instruments and related products	299.77	322.38	327.10	331.57	338.55	337.64	335.81	340.49	339.25	341.74	340.90	344.51	343.76	351.29	347.09
Miscellaneous manufacturing	231.64	247.56	253.50	256.50	260.13	260.06	253.72	263.25	263.64	264.62	264.91	264.62	266.27	270.58	274.11
Nondurable goods	280.74	296.83	301.08	305.74	310.85	307.64	305.22	311.20	313.97	315.58	319.19	319.53	319.59	324.81	323.99
Food and kindred products	295.37	310.87	312.05	317.60	319.18	315.51	312.24	316.61	318.98	321.47	325.17	322.72	324.80	329.27	325.19
Tobacco manufactures	344.54	369.68	370.50	386.08	364.98	360.26	339.64	378.61	395.75	401.68	420.04	398.91	386.05	379.61	374.96
Textile mill products	218.59	218.63	227.56	231.47	236.77	237.12	236.07	242.57	246.83	248.67	253.18	248.03	254.41	257.92	256.46
Apparel and other textile products	177.43	180.44	183.91	184.97	186.38	188.68	185.48	190.28	192.07	192.41	196.18	193.14	195.81	198.35	198.18
Paper and allied products	365.50	389.58	397.40	402.24	410.13	402.41	396.62	406.14	410.18	415.94	425.14	429.56	428.86	437.91	434.02
Printing and publishing	305.49	324.63	329.82	332.72	341.10	332.79	330.83	338.63	337.72	337.57	338.84	341.25	344.58	351.50	353.02
Chemicals and allied products	379.39	407.36	416.98	420.66	427.25	421.87	425.77	428.07	432.85	435.75	440.79	440.13	439.25	448.14	445.30
Petroleum and coal products	491.62	546.99	555.59	564.26	563.05	572.46	573.73	584.32	581.23	575.73	579.48	584.76	572.46	591.41	588.74
Rubber and miscellaneous plastics products	288.95	302.94	304.18	309.28	319.56	317.19	314.03	321.55	326.75	327.57	328.75	329.65	330.84	338.55	338.58
Leather and leather products	183.13	189.39	189.73	194.22	196.38	196.90	190.30	197.06	201.48	204.42	207.52	207.00	206.25	209.43	206.09
TRANSPORTATION AND PUBLIC UTILITIES	382.18	401.70	406.62	413.01	416.30	409.43	411.65	413.32	413.79	415.64	419.54	425.71	421.86	432.22	433.40
WHOLESALE AND RETAIL TRADE	190.62	198.10	199.39	199.71	203.15	201.59	199.31	201.90	203.18	205.43	207.37	210.60	209.63	208.63	209.26
WHOLESALE TRADE	291.06	307.97	313.01	313.39	317.34	318.27	313.81	316.74	319.42	321.86	323.15	326.70	325.47	328.18	330.50
RETAIL TRADE	158.03	163.55	164.79	164.58	168.97	164.98	163.30	166.42	167.29	169.59	171.87	175.03	174.16	171.95	171.95
FINANCE, INSURANCE, AND REAL ESTATE	229.05	245.44	252.31	253.40	254.46	262.44	260.64	258.84	261.00	265.35	262.09	264.99	261.73	263.88	271.20
SERVICES	208.97	224.94	228.80	230.10	232.11	234.79	232.96	233.74	234.72	236.42	236.88	237.66	237.66	239.04	241.98

¹ Not available.
p = preliminary.

NOTE: See "Notes on the data" for a description of the most recent benchmark revision.

17. Indexes of diffusion: industries in which employment increased

[In percent]

Time span	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Over 1-month span	1981	57.8	52.4	52.2	65.6	60.2	58.9	62.6	49.5	42.2	33.3	29.3	30.9
	1982	28.5	45.4	36.0	39.0	47.6	32.8	38.4	37.1	34.1	29.3	32.0	42.2
	1983	56.5	45.7	62.4	69.1	71.0	64.5	68.5	68.0	P61.0	P67.2	—	—
Over 3-month span	1981	58.3	54.6	59.1	65.9	67.5	66.7	60.5	50.5	33.3	30.1	24.5	23.4
	1982	25.3	28.8	32.0	34.1	32.5	33.6	27.2	27.2	26.1	25.5	24.7	40.6
	1983	45.4	55.1	65.6	75.8	76.1	77.2	73.9	P79.3	P79.3	—	—	—
Over 6-month span	1981	68.5	65.3	63.7	69.4	64.2	58.6	45.7	34.4	29.6	24.2	25.0	22.0
	1982	20.2	23.7	25.3	29.8	26.1	26.1	23.4	19.1	21.2	26.1	26.6	35.8
	1983	50.5	63.2	73.4	76.3	79.3	P83.1	P82.8	—	—	—	—	—
Over 12-month span	1981	74.5	71.2	70.4	58.1	47.6	41.4	34.9	29.8	27.4	23.7	25.3	23.1
	1982	22.0	20.7	18.0	19.4	18.3	20.7	20.7	22.8	24.2	31.5	37.6	44.1
	1983	48.9	58.3	P62.4	P73.4	—	—	—	—	—	—	—	—

p = preliminary.

NOTE: Figures are the percent of industries with employment rising. (Half of the unchanged components

are counted as rising.) Data are centered within the spans. See the "Definitions" in this section. See "Notes" on the data" for a description of the most recent benchmark revision.

UNEMPLOYMENT INSURANCE DATA

NATIONAL UNEMPLOYMENT INSURANCE DATA are compiled monthly by the Employment and Training Administration of the U.S. Department of Labor from monthly reports of unemployment insurance activity prepared by State agencies. Railroad unemployment insurance data are prepared by the U.S. Railroad Retirement Board.

Definitions

Data for **all programs** represent an unduplicated count of insured unemployment under State programs, Unemployment Compensation for Ex-Servicemen, and Unemployment Compensation for Federal Employees, and the Railroad Insurance Act.

Under both State and Federal unemployment insurance programs for civilian employees, insured workers must report the completion of at least 1 week of unemployment before they are defined as unemployed. Persons not covered by unemployment insurance (about 10 percent of the labor force) and those who have exhausted or not yet earned benefit rights are excluded from the scope of the survey. **Initial claims** are notices filed by

persons in unemployment insurance programs to indicate they are out of work and wish to begin receiving compensation. A claimant who continued to be unemployed a full week is then counted in the insured unemployment figure. The **rate of insured unemployment** expresses the number of insured unemployed as a percent of the average insured employment in a 12-month period.

Average weekly seasonally adjusted insured unemployment data are computed by BLS' Weekly Seasonal Adjustment program. This procedure incorporated the X-11 Variant of the Census Method II Seasonal Adjustment program.

An **application** for benefits is filed by a railroad worker at the beginning of his first period of unemployment in a benefit year; no application is required for subsequent periods in the same year. **Number of payments** are payments made in 14-day registration periods. The **average amount of benefit payment** is an average for all compensable periods, not adjusted for recovery of overpayments or settlement of underpayments. However, **total benefits** paid have been adjusted.

18. Unemployment insurance and employment service operations

[All items except average benefits amounts are in thousands]

Item	1982				1983								
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept. ^P
All programs:													
Insured unemployment	4,282	4,391	4,635	5,074	5,459	5,437	5,134	4,642	3,947	3,481	3,275	2,917	2,580
State unemployment insurance program: ¹													
Initial claims ²	2,344	2,443	2,661	3,080	3,143	2,065	2,075	1,874	1,666	1,740	1,804	1,668	1,401
Insured unemployment (average weekly volume)	3,712	3,828	4,156	4,581	4,923	4,759	4,401	3,906	3,361	3,063	3,049	2,766	2,449
Rate of insured unemployment	4.2	4.4	4.7	5.2	5.6	5.5	5.0	4.5	3.9	3.5	3.5	3.2	2.8
Weeks of unemployment compensated	14,523	13,786	15,170	17,873	18,307	16,895	19,529	14,986	13,133	12,819	10,959	11,302	9,503
Average weekly benefit amount for total unemployment	\$121.03	\$122.81	\$123.43	\$123.42	\$124.29	\$124.47	\$125.47	\$124.85	\$124.49	\$123.44	\$121.59	\$121.46	\$122.05
Total benefits paid	\$1,711,306	\$1,647,343	\$1,820,019	\$2,135,302	\$2,205,551	\$2,052,415	\$2,367,752	\$1,816,539	\$1,587,888	\$1,549,758	\$1,298,189	\$1,337,417	\$1,124,988
State unemployment insurance program: ¹ (Seasonally adjusted data)													
Initial claims ²	2,902	2,688	2,680	2,586	2,187	2,138	2,148	1,952	1,993	1,836	1,723	1,841	1,688
Insured unemployment (average weekly volume)	4,446	4,680	4,618	4,355	3,980	3,979	3,884	3,774	3,538	3,301	3,303	3,026	3,088
Rate of insured unemployment	5.1	5.3	5.3	5.0	4.6	4.6	4.5	4.3	4.1	3.8	3.8	3.5	3.6
Unemployment compensation for ex-servicemen: ³													
Initial claims ¹	11	10	17	24	21	16	18	15	14	16	16	19	17
Insured unemployment (average weekly volume)	8	9	14	26	37	37	34	30	26	25	25	26	27
Weeks of unemployment compensated	25	28	33	90	132	143	156	117	104	107	94	108	105
Total benefits paid	\$2,897	\$3,366	\$4,006	\$11,191	\$16,807	\$18,032	\$19,588	\$14,776	\$13,111	\$13,588	\$12,118	\$13,850	\$13,492
Unemployment compensation for Federal civilian employees: ⁴													
Initial claims	13	16	14	15	16	10	11	10	9	13	12	11	11
Insured unemployment (average weekly volume)	26	28	31	33	35	33	31	26	22	21	23	22	22
Weeks of unemployment compensated	111	110	126	146	142	131	146	109	93	90	85	94	83
Total benefits paid	\$12,317	\$12,144	\$14,023	\$16,114	\$16,045	\$15,083	\$16,871	\$12,422	\$10,603	\$10,272	\$9,640	\$10,759	\$9,548
Railroad unemployment insurance:													
Applications	14	20	17	17	20	7	8	94	4	30	55	14	9
Insured unemployment (average weekly volume)	61	82	81	83	102	72	65	79	90	49	49	46	41
Number of payments	137	159	162	172	219	158	169	172	183	123	92	107	103
Average amount of benefit payment	\$216.14	\$212.35	\$216.55	\$217.00	\$220.32	\$214.54	\$213.44	\$203.87	\$215.15	\$203.54	\$199.87	\$214.21	\$214.77
Total benefits paid	\$31,123	\$31,638	\$35,061	\$39,500	\$44,514	\$33,100	\$36,243	\$27,783	\$29,411	\$14,984	\$17,551	\$21,789	\$20,239
Employment service: ⁵													
New applications and renewals	14,320			4,527			8,381			11,987			13,136
Nonfarm placements	2,804			642			1,184			1,921			2,521

¹Initial claims and State insured unemployment include data under the program for Puerto Rican sugarcane workers.

²Excludes transition claims under State programs.

³Excludes data on claims and payments made jointly with other programs.

⁴Excludes data on claims and payments made jointly with State programs.

⁵Cumulative total for fiscal year (October 1-September 30). Data computed quarterly.

NOTE: Data for Puerto Rico and the Virgin Islands included. Dashes indicate data not available.

p = preliminary.

r = revised.

PRICE DATA

PRICE DATA are gathered by the Bureau of Labor Statistics from retail and primary markets in the United States. Price indexes are given in relation to a base period (1967 = 100, unless otherwise noted).

Definitions

The Consumer Price Index is a monthly statistical measure of the average change in prices in a fixed market basket of goods and services. Effective with the January 1978 index, the Bureau of Labor Statistics began publishing CPI's for two groups of the population. It introduced a CPI for All Urban Consumers, covering 80 percent of the total noninstitutional population, and revised the CPI for Urban Wage Earners and Clerical Workers, covering about half the new index population. The All Urban Consumers index covers in addition to wage earners and clerical workers, professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees, and others not in the labor force.

The CPI is based on prices of food, clothing, shelter, fuel, drugs, transportation fares, doctors' and dentists' fees, and other goods and services that people buy for day-to-day living. The quantity and quality of these items is kept essentially unchanged between major revisions so that only price changes will be measured. Data are collected from more than 24,000 retail establishments and 24,000 tenants in 85 urban areas across the country. All taxes directly associated with the purchase and use of items are included in the index. Because the CPI's are based on the expenditures of two population groups in 1972-73, they may not accurately reflect the experience of individual families and single persons with different buying habits.

Though the CPI is often called the "Cost-of-Living Index," it measures only price change, which is just one of several important factors affecting living costs. Area indexes do not measure differences in the level of prices among cities. They only measure the average change in prices for each area since the base period.

Producer Price Indexes measure average changes in prices received in primary markets of the United States by products of commodities in all stages of processing. The sample used for calculating these indexes contains about 2,800 commodities and about 10,000 quotations per month selected to represent the movement of prices of all commodities produced in the manufacturing, agriculture, forestry, fishing, mining, gas and electricity, and public utilities sectors. The universe includes all commodities produced or imported for sale in commercial transactions in primary markets in the United States.

Producer Price Indexes can be organized by stage of processing or by commodity. The stage of processing structure organizes products by degree of fabrication (that is, finished goods, intermediate or semifinished goods, and crude materials). The commodity structure organizes products by similarity of end-use or material composition.

To the extent possible, prices used in calculating Producer Price Indexes apply to the first significant commercial transaction in the United States, from the production or central marketing point. Price data are generally collected monthly, primarily by mail questionnaire. Most prices are obtained directly from producing companies on a voluntary and confidential basis. Prices generally are reported for the Tuesday of the week containing the 13th day of the month.

In calculating Producer Price Indexes, price changes for the various commodities are averaged together with implicit quantity weights representing their importance in the total net selling value of all commodities as of 1972. The detailed data are aggregated to obtain indexes for stage of processing groupings, commodity groupings, durability of product groupings, and a number of special composite groupings.

Price indexes for the output of selected SIC industries measure average price changes in commodities produced by particular industries, as defined in the *Standard Industrial Classification Manual 1972* (Washington, U.S. Office of Management and Budget, 1972). These indexes are derived from several price series, combined to match the economic activity of the specified industry and weighted by the value of shipments in the industry. They use data from comprehensive industrial censuses conducted by the U.S. Bureau of the Census and the U.S. Department of Agriculture.

Notes on the data

Regional CPI's cross classified by population size were introduced in the May 1978 *Review*. These indexes enable users in local areas for which an index is not published to get a better approximation of the CPI for their area by using the appropriate population size class measure for their region. The cross-classified indexes are published bimonthly. (See table 20.)

For details concerning the 1978 revision of the CPI, see *The Consumer Price Index: Concepts and Content Over the Years*, Report 517, revised edition (Bureau of Labor Statistics, May 1978).

As of January 1976, the Producer Price Index incorporated a revised weighting structure reflecting 1972 values of shipments.

Additional data and analyses of price changes are provided in the *CPI Detailed Report* and *Producer Prices and Price Indexes*, both monthly publications of the Bureau.

For a discussion of the general method of computing producer, and industry price indexes, see *BLS Handbook of Methods*, Bulletin 2134-1 (Bureau of Labor Statistics, 1982), chapter 7. For consumer prices, see *BLS Handbook of Methods for Surveys and Studies* (1976), chapter 13. See also John F. Early, "Improving the measurement of producer price change," *Monthly Labor Review*, April 1978. For industry prices, see also Bennett R. Moss, "Industry and Sector Price Indexes," *Monthly Labor Review*, August 1965.

19. Consumer Price Index for Urban Wage Earners and Clerical Workers, annual averages and changes, 1967-82

[1967 = 100]

Year	All items		Food and beverages		Housing		Apparel and upkeep		Transportation		Medical care		Entertainment		Other goods and services	
	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change
1967	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...
1968	104.2	4.2	103.6	3.6	104.0	4.0	105.4	5.4	103.2	3.2	106.1	6.1	105.7	5.7	105.2	5.2
1969	109.8	5.4	108.8	5.0	110.4	6.2	111.5	5.8	107.2	3.9	113.4	6.9	111.0	5.0	110.4	4.9
1970	116.3	5.9	114.7	5.4	118.2	7.1	116.1	4.1	112.7	5.1	120.6	6.3	116.7	5.1	115.8	5.8
1971	121.3	4.3	118.3	3.1	123.4	4.4	119.8	3.3	118.6	5.2	128.4	6.5	122.9	5.3	122.4	4.8
1972	125.3	3.3	123.2	4.1	128.1	3.8	122.3	2.1	119.9	1.1	132.5	3.2	126.5	2.9	127.5	4.2
1973	133.1	6.2	139.5	13.2	133.7	4.4	126.8	3.7	123.8	3.3	137.7	3.9	130.0	2.8	132.5	3.9
1974	147.7	11.0	158.7	13.8	148.8	11.3	136.2	7.4	137.7	11.2	150.5	9.3	139.8	7.5	142.0	7.2
1975	161.2	9.1	172.1	8.4	164.5	10.6	142.3	4.5	150.6	9.4	168.6	12.0	152.2	8.9	153.9	8.4
1976	170.5	5.8	177.4	3.1	174.6	6.1	147.6	3.7	165.5	9.9	184.7	9.5	159.8	5.0	162.7	5.7
1977	181.5	6.5	188.0	8.0	186.5	6.8	154.2	4.5	177.2	7.1	202.4	9.6	167.7	4.9	172.2	5.8
1978	195.3	7.6	206.2	9.7	202.6	8.6	159.5	3.4	185.8	4.9	219.4	8.4	176.2	5.1	183.2	6.4
1979	217.7	11.5	228.7	10.9	227.5	12.3	166.4	4.3	212.8	14.5	240.1	9.4	187.6	6.5	196.3	7.2
1980	247.0	13.5	248.7	8.7	263.2	15.7	177.4	6.6	250.5	17.7	287.2	11.3	203.7	8.5	213.6	8.8
1981	272.3	10.2	267.8	7.7	293.2	11.4	186.6	5.2	281.3	12.3	295.1	10.4	219.0	7.5	233.3	9.2
1982	288.6	6.0	278.5	4.0	314.7	7.3	190.9	2.3	293.1	4.2	326.9	10.8	232.4	6.1	257.0	10.2

20. Consumer Price Index for All Urban Consumers and revised CPI for Urban Wage Earners and Clerical Workers, U.S. city average—general summary and groups, subgroups, and selected items

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1982	1983						1982	1983					
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
All items	293.3	295.5	297.1	298.1	299.3	300.3	301.8	292.8	294.9	296.3	297.2	298.2	299.5	300.8
Food and beverages	280.1	284.6	285.0	284.7	284.7	284.9	285.3	280.4	284.9	285.4	285.0	285.0	285.1	285.6
Housing	319.7	320.3	321.8	323.1	324.5	324.8	326.4	320.0	320.3	321.3	322.3	323.1	324.3	325.3
Apparel and upkeep	194.9	195.5	196.1	195.6	195.0	197.3	200.4	194.1	194.8	195.3	194.7	194.0	196.3	199.3
Transportation	295.3	292.3	296.2	298.3	300.4	302.4	303.7	296.9	293.5	297.5	299.6	301.9	304.1	305.5
Medical care	336.0	353.5	354.3	355.4	357.7	360.0	361.2	333.9	351.2	352.1	353.3	355.6	357.9	359.2
Entertainment	238.3	244.6	244.8	245.4	246.0	246.6	247.5	234.8	241.1	241.3	241.9	242.5	243.1	244.1
Other goods and services	266.6	283.2	283.6	284.5	287.5	289.0	294.4	262.8	281.4	281.8	282.8	286.4	288.0	292.0
Commodities	266.6	269.2	270.9	271.6	272.5	273.4	274.5	267.0	270.9	272.7	273.3	274.2	275.1	275.9
Commodities less food and beverages	256.1	257.3	259.7	260.9	262.3	263.6	265.1	256.8	260.3	262.7	263.7	264.9	266.1	267.2
Nondurables less food and beverages	269.9	267.8	271.3	272.3	273.5	274.7	275.8	271.8	269.7	273.3	274.4	275.7	276.9	277.9
Durables	244.1	248.7	249.5	251.2	252.9	254.3	256.4	243.6	251.2	252.8	253.7	254.8	256.0	257.0
Services	339.7	341.2	342.6	344.0	345.6	346.8	349.0	340.5	339.0	340.1	341.4	342.8	344.8	346.9
Rent, residential	226.9	234.5	235.1	235.9	237.1	238.2	239.5	226.4	234.0	234.6	235.3	236.5	237.6	238.9
Household services less rent of shelter (12/82 = 100)	...	102.0	103.2	104.2	104.8	104.8	105.1	...	...	...	...	...	...	...
Transportation services	298.7	300.8	301.2	301.4	302.3	304.0	305.4	296.9	297.2	297.6	297.5	298.4	300.2	301.4
Medical care services	364.0	382.8	383.5	384.6	387.2	389.8	391.0	361.1	379.7	380.5	381.7	384.4	387.0	388.3
Other services	266.3	274.2	274.7	275.6	276.3	276.9	282.5	264.0	272.0	272.6	273.5	274.2	274.8	279.6
Special indexes:														
All items less food	292.9	294.7	296.5	297.8	299.3	300.5	302.3	292.8	294.4	296.1	297.2	298.5	300.0	301.5
All items less homeowners' costs	...	101.0	101.6	101.9	102.3	102.7	103.2	...	...	...	...	...	...	...
All items less mortgage interest costs	...	...	...	...	...	...	276.7	279.0	279.7	281.7	283.5	285.3	286.3	287.5
Commodities less food	253.9	255.4	257.6	258.9	260.2	261.4	262.9	254.7	258.2	260.6	261.6	262.7	263.9	264.9
Nondurables less food	264.6	263.0	266.3	267.3	268.4	269.6	270.6	266.5	265.0	268.4	269.3	270.6	271.7	272.8
Nondurables less food and apparel	304.2	302.1	306.7	308.4	310.4	310.9	311.0	305.6	303.5	308.2	309.9	312.1	312.7	312.8
Nondurables	276.2	277.3	279.3	279.7	280.3	281.0	281.8	277.2	278.4	280.4	280.8	281.4	282.1	282.8
Services less rent of shelter (12/82 = 100)	...	101.6	102.2	102.7	103.1	103.5	104.2	...	...	...	...	...	...	...
Services less medical care	334.8	334.5	336.0	337.4	338.9	339.9	342.2	335.8	333.0	333.9	334.9	336.1	338.1	340.2
Domestically produced farm foods	268.0	269.9	270.6	269.6	269.6	269.2	269.2	267.0	269.0	269.6	268.7	268.5	268.0	268.1
Selected beef cuts	279.3	279.4	281.5	278.5	275.8	270.5	267.5	280.7	280.7	283.0	279.8	277.2	271.6	268.9
Energy ¹	424.4	410.0	421.3	427.3	430.1	429.8	429.3	425.6	410.8	422.1	428.1	430.9	430.7	430.2
Energy commodities ¹	433.3	403.2	416.3	420.7	423.4	423.7	422.1	433.8	404.3	417.3	421.7	424.5	424.9	423.4
All items less energy	283.1	287.0	287.6	288.2	289.2	290.3	292.1	281.9	285.6	286.1	286.5	287.4	288.8	290.3
All items less food and energy	280.4	284.0	284.7	285.5	286.8	288.2	290.2	279.2	282.6	283.2	283.8	284.9	286.6	288.3
Commodities less food and energy	234.1	240.2	240.8	241.5	242.7	244.2	246.2	233.6	241.2	242.3	242.9	243.8	245.1	246.4
Services less energy	334.2	334.8	335.6	336.4	337.9	339.3	341.6	334.8	332.7	332.6	333.2	334.5	336.8	339.0
Purchasing power of the consumer dollar, 1967 = \$1	\$0.341	\$0.338	\$0.337	\$0.335	\$0.334	\$0.333	\$0.331	\$0.342	\$0.339	\$0.337	\$0.336	\$0.335	\$0.334	\$0.332

See footnotes at end of table.

20. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers						Urban Wage Earners and Clerical Workers							
	1982	1983					1982	1983						
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
FOOD AND BEVERAGES	280.1	284.6	285.0	284.7	284.7	284.9	285.3	280.4	284.9	285.4	285.0	285.0	285.1	285.6
Food	287.6	291.9	292.4	292.0	292.0	292.2	292.6	287.7	292.1	292.6	292.2	292.1	292.2	292.6
Food at home	280.6	283.4	283.8	283.0	282.8	282.5	282.5	279.7	282.5	282.9	282.1	281.8	281.5	281.5
Cereals and bakery products	284.6	291.1	291.7	292.4	293.7	294.0	293.7	283.4	289.6	290.2	291.0	292.3	292.5	292.3
Cereals and cereal products (12/77 = 100)	154.3	156.1	157.0	157.9	158.3	158.6	158.5	155.2	156.9	157.7	158.7	159.2	159.5	159.3
Flour and prepared flour mixes (12/77 = 100)	141.4	140.2	141.3	142.2	142.8	143.9	142.9	141.8	140.4	141.7	142.7	143.3	144.6	143.4
Cereal (12/77 = 100)	166.9	173.8	175.7	176.4	176.7	177.2	177.5	169.0	175.9	177.8	178.5	178.8	179.5	179.7
Rice, pasta, and cornmeal (12/77 = 100)	148.2	145.8	144.8	146.2	146.5	145.6	146.0	149.4	146.8	145.8	147.3	147.7	146.8	147.1
Bakery products (12/77 = 100)	149.4	153.3	153.5	153.7	154.4	154.5	154.4	148.2	152.0	152.2	152.4	152.7	153.3	153.1
White bread	246.1	252.1	252.6	253.1	254.3	253.1	252.9	241.9	247.6	248.2	248.8	249.9	248.7	248.5
Other breads (12/77 = 100)	147.1	148.8	149.7	149.8	149.5	150.1	149.8	149.0	150.7	151.8	151.8	151.6	152.2	151.9
Fresh biscuits, rolls, and muffins (12/77 = 100)	149.5	152.5	152.0	151.7	153.2	153.4	152.6	145.6	148.4	147.9	148.0	149.6	149.6	148.7
Fresh cakes and cupcakes (12/77 = 100)	150.3	154.9	154.7	154.6	155.4	154.9	155.2	148.7	153.3	153.0	152.9	153.6	153.3	153.5
Cookies (12/77 = 100)	150.9	156.8	156.1	155.7	157.0	157.6	157.6	152.1	157.6	156.8	156.4	157.9	158.5	158.6
Crackers, bread, and cracker products (12/77 = 100)	140.8	147.2	147.9	149.5	150.3	151.4	148.3	142.3	148.7	149.5	151.0	151.8	152.8	149.5
Fresh sweetrolls, coffeecake, and donuts (12/77 = 100)	149.2	153.7	154.0	153.7	154.1	155.3	155.9	151.8	156.2	156.7	156.6	156.9	158.0	158.6
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	154.7	157.1	157.4	158.8	159.4	159.4	161.3	148.1	150.2	150.5	152.0	152.5	152.5	154.3
Meats, poultry, fish, and eggs	267.8	264.2	263.8	261.5	260.4	258.8	258.7	267.7	263.9	263.6	261.3	260.1	258.4	258.4
Meats, poultry, and fish	275.3	271.4	270.5	268.7	267.2	265.0	264.2	275.1	271.0	270.2	268.3	266.8	264.4	263.8
Meats	278.4	273.3	272.7	270.2	267.8	264.2	262.6	277.9	272.9	272.1	269.7	267.3	263.7	262.2
Beef and veal	279.1	279.4	281.3	278.6	275.8	270.7	268.0	279.8	280.0	282.0	279.2	276.5	271.1	268.7
Ground beef other than canned	265.4	267.0	266.9	265.6	261.4	256.5	254.3	267.0	268.0	268.3	265.7	262.7	258.0	255.9
Chuck roast	286.9	291.2	289.5	277.4	277.6	272.4	269.5	295.9	300.2	298.8	285.7	286.3	280.6	277.4
Round roast	245.4	251.1	249.6	245.6	240.7	232.4	230.3	249.2	254.0	252.3	249.1	243.8	235.0	232.8
Round steak	262.0	263.9	268.8	262.1	257.8	250.3	247.4	260.6	262.0	267.7	260.5	256.5	248.5	245.7
Sirloin steak	285.2	274.8	284.3	286.1	285.2	280.9	277.3	286.7	276.0	285.9	287.5	281.8	280.1	280.1
Other beef and veal (12/77 = 100)	169.3	168.3	170.2	170.5	168.8	166.6	164.8	167.6	166.8	168.6	169.1	167.4	165.1	163.7
Pork	277.1	262.1	257.3	254.1	251.2	249.6	250.2	276.3	261.7	256.8	253.9	250.8	249.3	249.7
Bacon	315.5	276.6	272.5	267.4	267.3	264.7	269.5	320.7	281.4	276.8	271.9	271.6	268.8	273.6
Chops	252.5	241.8	237.7	234.3	232.9	232.4	229.6	250.6	239.7	235.9	232.5	231.1	230.5	227.9
Ham other than canned (12/77 = 100)	122.1	116.7	112.0	110.3	108.3	109.6	111.0	119.1	113.9	109.3	107.5	105.5	106.8	108.1
Sausage	341.2	332.5	330.6	326.5	318.9	313.9	311.3	342.5	333.1	331.1	327.3	320.0	315.3	312.2
Canned ham	259.7	272.0	266.6	260.9	256.8	254.0	252.8	263.5	277.1	271.6	266.4	262.6	259.8	258.8
Other pork (12/77 = 100)	153.8	143.5	141.4	141.7	140.0	138.4	139.0	153.0	142.8	140.6	141.1	139.3	137.8	138.2
Other meats	272.1	268.6	267.7	267.4	266.9	264.6	262.6	271.7	268.3	267.3	266.9	266.6	264.4	262.4
Frankfurters	275.3	267.4	266.7	265.8	265.9	266.7	259.8	274.7	266.2	265.2	264.9	264.9	265.9	258.6
Bologna, liverwurst, and salami (12/77 = 100)	156.6	154.4	154.2	155.6	154.0	153.2	153.0	156.6	154.3	154.1	155.6	154.1	153.3	152.9
Other luncheonmeats (12/77 = 100)	138.9	139.7	137.7	136.6	137.1	136.4	136.1	137.7	135.8	134.6	135.2	134.5	134.2	134.2
Lamb and organ meats (12/77 = 100)	140.5	137.0	139.1	139.3	138.4	133.8	133.9	143.6	140.0	142.2	142.3	141.6	136.6	136.9
Poultry	196.2	191.0	192.0	193.6	198.1	200.5	204.4	194.2	189.0	190.1	191.8	196.1	198.5	202.6
Fresh whole chicken	194.8	184.5	187.7	192.1	198.7	202.1	209.6	192.5	182.3	185.7	190.4	196.6	200.0	207.2
Fresh and frozen chicken parts (12/77 = 100)	127.1	125.7	126.6	126.3	129.6	131.7	135.9	125.4	124.2	124.9	124.7	127.7	129.9	134.2
Other poultry (12/77 = 100)	127.9	127.2	125.4	125.3	126.0	125.7	122.9	127.4	126.6	124.9	124.7	125.3	125.1	122.7
Fish and seafood	369.4	379.4	372.6	371.2	368.9	372.7	372.6	368.4	377.5	371.5	369.8	367.3	370.8	370.7
Canned fish and seafood	139.3	137.9	137.2	138.6	135.7	135.9	133.9	138.7	137.4	136.8	138.1	135.2	135.4	133.4
Fresh and frozen fish and seafood (12/77 = 100)	141.5	148.4	144.7	143.0	143.3	145.5	146.7	141.3	147.7	144.4	142.5	142.8	144.8	146.0
Eggs	175.2	174.9	181.8	173.8	177.9	183.7	193.3	176.1	175.8	182.7	174.8	178.7	184.6	194.3
Dairy products	247.0	250.1	250.3	249.8	249.8	250.2	250.2	246.3	249.4	249.6	249.1	249.0	249.4	249.4
Fresh milk and cream (12/77 = 100)	135.1	136.6	136.5	136.3	136.2	136.5	136.1	134.5	136.1	136.0	135.9	135.7	135.9	135.5
Fresh whole milk	220.8	223.5	223.2	222.9	222.8	223.2	222.6	219.9	222.7	222.3	222.1	222.0	222.3	221.7
Other fresh milk and cream (12/77 = 100)	135.6	136.7	136.8	136.8	136.4	136.8	136.4	135.0	136.1	136.3	136.3	135.8	136.2	135.8
Processed dairy products	146.1	148.1	148.6	148.1	148.2	148.4	149.0	146.3	148.4	148.8	148.3	148.5	148.6	149.3
Butter	252.2	253.9	254.4	252.7	253.3	254.2	253.9	254.7	256.5	256.9	255.4	255.8	256.8	256.4
Cheese (12/77 = 100)	144.9	146.5	146.5	146.0	146.9	146.4	146.8	145.2	146.8	146.8	146.3	147.3	146.7	147.1
Ice cream and related products (12/77 = 100)	149.3	152.0	153.6	154.0	151.6	152.5	154.4	148.4	151.1	152.7	153.0	150.7	151.5	153.5
Other dairy products (12/77 = 100)	141.1	144.5	144.6	143.1	144.5	145.9	146.0	141.8	145.3	145.3	143.7	145.1	146.5	146.5
Fruits and vegetables	284.1	294.9	298.2	298.2	298.7	299.4	297.6	278.8	291.1	294.5	294.5	294.7	295.1	293.3
Fresh fruits and vegetables	283.5	304.3	311.0	310.9	310.6	310.7	306.6	275.2	298.9	305.5	305.4	304.8	304.3	300.3
Fresh fruits	329.0	291.9	300.6	310.5	326.5	328.9	316.7	313.6	282.2	290.6	299.7	315.3	317.5	305.9
Apples	285.5	259.9	266.4	281.9	287.5	310.0	320.2	286.6	260.5	266.8	283.4	288.8	311.9	321.3
Bananas	240.7	295.1	312.5	318.1	325.2	291.0	278.6	238.5	293.0	311.1	316.7	323.1	290.7	276.5
Oranges	516.3	301.3	297.2	309.1	347.9	359.8	337.0	466.8	274.4	270.2	280.1	321.5	329.9	307.1
Other fresh fruits (12/77 = 100)	152.1	155.8	162.4	166.3	173.3	173.2	164.1	146.4	150.9	156.9	160.0	166.6	166.3	157.7
Fresh vegetables	241.0	316.0	320.8	311.3	295.8	293.8	297.2	240.6	314.0	319.2	310.8	295.5	292.5	295.4
Potatoes	272.4	258.7	282.3	304.7	320.7	342.2	336.1	269.6	253.3	277.3	301.3	318.2	338.2	330.9
Lettuce	236.1	316.0	340.9	363.5	280.5	293.9	337.0	237.9	311.6	338.0	360.8	280.6	294.2	338.2
Tomatoes	184.9	327.5	307.8	262.3	243.1	200.5	212.2	187.9	332.1	313.2	267.1	247.3	204.0	216.2
Other fresh vegetables (12/77 = 100)	134.0	186.9	18											

20. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers						Urban Wage Earners and Clerical Workers							
	1982	1983					1982	1983						
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
FOOD AND BEVERAGES—Continued														
Food—Continued														
Food at home—Continued														
Fruits and vegetables—Continued														
Cut corn and canned beans except lima (12/77 = 100)	141.3	139.6	138.4	140.5	140.9	142.0	141.8	138.8	137.1	136.2	138.1	138.6	139.5	139.3
Other canned and dried vegetables (12/77 = 100)	134.8	130.6	130.8	131.2	131.7	132.9	134.0	133.3	129.2	129.5	129.8	130.2	131.5	132.6
Other foods at home	333.6	339.2	339.1	338.8	338.7	339.1	340.7	334.5	340.0	339.8	339.5	339.3	339.9	341.5
Sugar and sweets	371.2	373.2	373.1	374.5	376.1	375.8	376.4	371.3	373.0	372.9	374.1	376.0	375.7	376.2
Candy and chewing gum (12/77 = 100)	149.7	150.8	151.0	151.3	151.8	151.6	151.9	149.8	150.8	151.0	151.2	151.8	151.6	151.8
Sugar and artificial sweeteners (12/77 = 100)	167.5	168.3	167.2	168.5	169.7	169.7	170.3	169.0	169.7	168.7	169.8	171.0	171.0	171.6
Other sweets (12/77 = 100)	151.1	151.4	152.0	152.5	153.0	152.8	152.7	148.9	149.1	149.6	150.2	150.8	150.6	150.5
Fats and oils (12/77 = 100)	258.4	258.6	258.3	258.3	259.0	258.1	264.8	258.3	258.4	258.2	258.0	258.7	257.8	264.7
Margarine	259.3	259.6	257.1	259.3	259.5	257.2	259.3	258.5	258.1	255.5	257.5	257.6	255.1	257.3
Nondairy substitutes and peanut butter (12/77 = 100)	151.2	151.5	150.7	149.4	150.5	149.8	148.9	149.5	149.9	149.1	147.7	148.8	148.1	147.2
Other fats, oils, and salad dressings (12/77 = 100)	129.4	129.5	130.2	130.1	130.3	130.3	136.9	130.0	130.1	130.8	130.7	130.9	130.9	137.5
Nonalcoholic beverages	424.2	431.8	431.1	431.0	428.7	430.7	431.2	425.9	433.5	432.4	432.6	430.3	432.5	433.1
Cola drinks, excluding diet cola	305.0	313.1	311.5	312.3	310.3	312.4	312.7	302.8	310.4	308.5	309.7	307.8	309.9	310.2
Carbonated drinks, including diet cola (12/77 = 100)	144.6	146.8	147.3	146.3	145.1	146.3	147.6	142.3	144.5	144.9	143.9	142.6	144.1	145.3
Roasted coffee	362.9	361.4	360.8	359.3	356.6	356.0	353.7	357.9	356.2	355.6	354.3	351.7	350.8	348.4
Freeze dried and instant coffee	343.1	349.5	351.6	352.2	351.4	352.3	348.3	342.5	349.0	351.0	351.6	350.7	351.5	347.5
Other noncarbonated drinks (12/77 = 100)	138.3	140.6	140.1	140.5	140.4	140.5	141.0	139.0	140.9	140.4	140.7	140.7	140.8	141.3
Other prepared foods	269.9	276.9	277.2	276.1	276.8	276.9	277.8	271.7	278.5	278.8	277.7	278.4	278.5	279.4
Canned and packaged soup (12/77 = 100)	137.9	140.9	141.6	141.6	141.9	141.8	141.4	139.5	142.7	143.6	143.4	143.7	143.7	143.3
Frozen prepared foods (12/77 = 100)	148.9	155.0	154.4	153.8	154.4	155.1	155.7	148.4	154.2	153.7	153.1	153.5	154.2	154.9
Snacks (12/77 = 100)	153.0	159.2	160.6	159.0	159.3	159.3	159.9	155.0	161.2	162.7	161.1	161.3	161.4	162.0
Seasonings, olives, pickles, and relish (12/77 = 100)	155.3	159.3	159.3	158.6	158.5	158.3	158.9	154.4	158.3	158.4	157.6	157.5	157.4	158.1
Other condiments (12/77 = 100)	152.2	155.3	155.6	155.4	156.1	156.0	156.3	154.0	157.1	157.4	157.2	157.9	157.9	158.2
Miscellaneous prepared foods (12/77 = 100)	149.7	151.6	152.0	151.2	151.6	151.5	152.2	149.9	151.8	152.3	151.5	151.8	151.8	152.5
Other canned and packaged prepared foods (12/77 = 100)	145.9	147.4	146.2	146.2	146.8	146.5	147.2	147.3	148.7	147.5	147.6	148.0	147.7	148.4
Food away from home	309.8	318.0	318.6	319.3	319.8	321.0	322.2	312.9	321.3	321.9	322.5	323.0	324.3	325.4
Lunch (12/77 = 100)	150.7	154.4	154.6	154.9	154.9	155.4	155.9	152.3	156.1	156.2	156.5	156.5	157.1	157.5
Dinner (12/77 = 100)	149.2	152.5	152.7	153.1	153.4	153.9	154.9	150.9	154.2	154.4	154.8	155.1	155.6	156.6
Other meals and snacks (12/77 = 100)	151.5	157.1	157.9	158.2	158.6	159.5	159.4	152.1	157.7	158.4	158.7	159.1	160.0	159.9
Alcoholic beverages	210.1	216.1	216.6	217.0	217.2	217.1	218.4	212.2	218.5	219.1	219.6	219.8	219.7	221.3
Alcoholic beverages at home (12/77 = 100)	135.9	139.7	140.0	140.3	140.7	140.3	141.2	137.2	141.3	141.7	142.0	142.5	142.1	143.2
Beer and ale	211.4	222.5	222.7	224.1	224.8	224.4	225.4	210.5	221.2	221.5	222.8	223.6	223.2	224.8
Whiskey	149.8	151.4	151.3	151.6	152.1	151.6	153.7	150.5	151.9	151.9	152.1	152.6	152.1	154.2
Wine	237.5	236.3	239.1	236.3	237.1	234.8	235.7	246.2	243.9	247.0	244.1	245.2	242.4	243.7
Other alcoholic beverages (12/77 = 100)	120.3	121.5	121.5	122.1	121.7	122.4	122.5	120.4	121.3	121.4	122.0	121.8	122.4	122.3
Alcoholic beverages away from home (12/77 = 100)	142.5	146.5	147.0	147.1	146.1	147.3	148.4	143.9	147.7	148.2	148.3	147.1	148.5	149.6
HOUSING	319.7	320.3	321.8	323.1	324.5	324.8	326.4	320.0	320.3	321.3	322.3	323.1	324.3	325.3
Shelter (CPI-U)	342.6	341.7	342.7	343.6	345.3	346.6	348.5	344.7						
Renters' costs		101.8	102.2	102.5	103.1	103.7	104.4							
Rent, residential	226.9	234.5	235.1	235.9	237.1	238.2	239.5	226.4						
Other renters' costs	343.0	343.7	347.5	347.9	352.3	355.8	361.3	341.1						
Homeowners' costs		101.7	102.0	102.2	102.7	103.0	103.5							
Owners' equivalent rent		101.7	101.9	102.2	102.7	103.0	103.5							
Household insurance		102.0	102.4	102.4	102.7	103.5	104.0							
Maintenance and repairs	338.4	343.6	344.3	345.1	347.9	346.6	334.6							
Maintenance and repair services	372.5	382.8	382.7	381.6	383.3	388.6	387.6							
Maintenance and repair commodities	257.7	258.7	260.0	262.3	262.6	261.2	259.9							
Shelter (CPI-W)								341.1	342.4	342.9	343.3	344.1	346.4	347.5
Rent, residential								233.1	234.0	234.6	235.3	236.5	237.6	238.9
Other renters' costs								339.0	342.3	345.5	345.8	350.4	354.0	358.6
Lodging while out of town								353.1	358.2	363.0	363.5	370.7	375.7	374.8
Tenants' insurance (12/77 = 100)								152.6	153.2	154.0	153.5	153.8	155.4	156.2
Homeownership								379.9	381.2	381.7	381.9	382.5	385.2	386.1
Home purchase								298.9	301.0	303.9	303.5	304.1	304.1	303.4
Financing, taxes, and insurance								491.8	492.2	489.1	490.0	491.3	496.6	500.0
Property insurance								419.2	422.3	426.3	430.6	430.8	430.8	434.9
Property taxes								231.7	232.9	233.8	234.6	235.1	237.1	238.5
Contracted mortgage interest costs								625.7	625.5	620.1	620.8	622.5	629.8	634.2
Mortgage interest rates								207.5	206.0	202.4	203.0	203.8	205.5	207.2
Maintenance and repairs								337.5	339.0	339.9	341.0	342.0	344.3	343.7
Maintenance and repair services								376.6	378.9	379.5	380.0	381.4	385.1	385.5
Maintenance and repair commodities								254.2	253.9	255.6	257.5	258.0	257.5	255.2
Paint and wallpaper, supplies, tools, and equipment (12/77 = 100)								146.0	145.7	148.1	149.4	149.2	147.6	145.8
Lumber, awnings, glass, and masonry (12/77 = 100)								124.1	123.4	124.3	124.2	125.8	126.8	125.3
Plumbing, electrical, heating, and cooling supplies (12/77 = 100)								137.5	137.4	138.0	138.8	138.7	139.5	140.7
Miscellaneous supplies and equipment (12/77 = 100)								142.4	143.1	141.3	144.1	143.3	143.3	142.2

20. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers						Urban Wage Earners and Clerical Workers							
	1982		1983				1982		1983					
	Sept.	Apr.	May	June	July	Aug.	Sept.	Apr.	May	June	July	Aug.	Sept.	
Fuel and other utilities	359.5	363.6	369.3	373.6	375.5	375.1	376.4	361.0	365.1	370.8	375.5	377.3	376.8	378.1
Fuels	458.5	459.2	468.3	475.2	477.7	476.5	478.3	458.4	459.3	468.2	475.6	477.9	476.6	478.3
Fuel oil, coal, and bottled gas	662.8	610.6	621.0	620.0	619.3	619.0	623.2	665.4	612.8	623.4	621.7	621.5	625.6	625.6
Fuel oil	685.9	618.4	629.6	628.5	627.2	626.5	631.2	688.1	620.4	631.8	630.7	629.5	628.9	633.7
Other fuels (6/78 = 100)	176.8	186.7	188.6	188.6	189.3	190.0	190.2	178.0	187.7	189.7	189.5	190.2	190.8	191.0
Gas (piped) and electricity	409.2	420.5	429.1	437.4	440.5	439.1	440.5	408.6	420.1	428.5	437.4	440.3	438.7	440.0
Electricity	332.5	319.9	324.7	337.4	341.1	340.7	342.3	332.5	319.3	324.2	337.9	341.6	341.2	342.6
Utility (piped) gas	517.6	578.3	593.9	591.8	593.0	589.8	590.5	514.5	576.5	591.0	588.8	589.5	585.8	586.4
HOUSING														
Fuel and other utilities														
Other utilities and public services	203.6	211.7	212.5	213.2	214.2	214.8	215.4	204.3	212.5	213.4	214.1	215.3	215.9	216.4
Telephone services	165.5	171.9	172.8	173.4	173.8	173.9	174.4	165.9	172.4	173.2	173.9	174.3	174.5	175.0
Local charges (12/77 = 100)	134.3	139.9	140.9	141.8	141.8	142.1	142.6	134.8	140.3	141.3	142.2	142.3	142.6	143.1
Interstate toll calls (12/77 = 100)	119.7	121.8	121.8	121.8	121.9	121.9	121.9	120.1	122.3	122.3	122.2	122.3	122.4	122.3
Intrastate toll calls (12/77 = 100)	110.1	116.6	117.1	117.4	118.2	118.3	118.6	109.7	116.6	117.1	117.4	118.2	118.3	118.7
Water and sewerage maintenance	332.4	347.5	348.2	348.9	353.5	355.9	356.8	335.4	350.8	351.8	352.6	357.7	360.2	361.0
Household furnishings and operations	234.2	239.9	238.4	238.6	238.9	238.0	238.9	231.0	236.0	235.4	235.5	235.8	234.8	235.8
Housefurnishings	194.3	198.7	197.6	197.8	198.1	196.7	197.6	192.4	196.7	195.8	195.9	196.1	194.7	195.6
Textile housefurnishings	222.1	229.4	228.7	226.8	227.3	226.1	231.2	225.0	233.6	232.7	230.5	231.1	229.6	234.6
Household linens (12/77 = 100)	135.4	134.2	136.2	135.4	134.4	133.4	138.1	136.4	135.3	137.3	136.4	135.6	134.5	139.0
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100)	141.6	152.4	149.4	147.7	149.3	149.0	150.5	144.8	157.8	154.1	152.1	154.0	153.3	154.8
Furniture and bedding	213.3	221.6	220.0	220.0	220.5	217.2	217.9	210.3	216.7	216.5	217.6	214.3	215.1	215.1
Bedroom furniture (12/77 = 100)	145.5	152.9	151.9	152.3	156.5	151.3	152.5	142.1	149.4	148.8	148.9	153.0	148.2	148.9
Sofas (12/77 = 100)	117.2	118.9	118.1	118.0	117.7	117.3	117.6	117.7	119.1	118.6	118.3	118.0	117.6	118.1
Living room chairs and tables (12/77 = 100)	123.1	126.2	123.9	124.2	123.9	123.5	124.2	123.4	126.6	124.5	124.9	125.0	124.5	125.2
Other furniture (12/77 = 100)	137.8	144.6	144.5	143.8	141.1	139.8	139.4	134.1	140.2	139.8	139.0	137.1	135.6	135.8
Appliances including TV and sound equipment	151.5	152.3	151.2	151.4	150.9	150.6	151.0	151.4	152.4	151.7	151.9	151.2	150.8	151.2
Television and sound equipment	108.2	107.1	106.1	105.9	105.2	105.1	105.1	107.4	106.2	105.1	105.0	104.3	104.3	104.2
Television	103.7	100.9	100.2	100.8	100.1	100.1	99.6	102.6	99.7	99.0	99.6	99.0	99.0	98.3
Sound equipment (12/77 = 100)	113.2	113.6	112.3	111.6	110.8	110.6	111.1	112.5	112.6	111.3	110.5	109.8	109.7	110.2
Household appliances	184.7	188.5	187.8	188.4	188.6	188.0	189.2	185.1	188.9	188.9	189.5	189.0	188.0	189.1
Refrigerators and home freezers	190.2	193.3	194.1	194.0	192.7	191.4	192.4	196.1	199.2	200.3	200.2	199.2	197.2	198.0
Laundry equipment	137.6	142.7	143.5	144.6	143.7	142.0	142.7	137.9	143.6	144.6	145.2	143.5	142.8	143.6
Other household appliances (12/77 = 100)	124.0	125.4	124.3	124.7	125.6	125.4	126.2	122.0	123.5	122.6	123.2	123.6	123.4	124.2
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100)	123.4	125.0	123.2	123.9	124.0	123.7	125.4	121.5	123.3	121.7	122.8	122.6	122.1	123.6
Office machines, small electric appliances, and air conditioners (12/77 = 100)	124.6	126.1	125.5	125.7	127.3	127.2	127.3	122.5	123.8	123.6	123.7	124.8	124.8	124.9
Other household equipment (12/77 = 100)	137.8	140.4	139.9	141.2	142.0	141.2	141.0	135.6	138.4	138.0	139.0	139.7	138.9	138.8
Floor and window coverings, infants', laundry, cleaning, and outdoor equipment (12/77 = 100)	143.3	143.2	143.2	142.2	145.1	144.4	144.2	135.9	135.3	135.5	134.3	137.3	136.4	136.0
Clocks, lamps, and decor items (12/77 = 100)	129.7	133.3	132.5	133.0	133.6	132.3	132.9	124.9	128.3	128.3	128.8	129.3	128.3	128.4
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100)	141.6	145.5	145.1	149.2	149.1	148.7	147.7	137.6	142.0	141.6	145.0	144.9	144.4	143.6
Lawn equipment, power tools, and other hardware (12/77 = 100)	133.4	135.9	135.1	135.0	135.5	134.2	134.7	138.8	141.4	140.2	139.9	140.4	139.3	140.2
Housekeeping supplies	289.2	296.9	296.6	296.3	296.8	295.8	295.7	285.7	293.9	293.6	293.2	293.5	292.7	293.1
Soaps and detergents	282.8	294.5	294.5	294.9	294.6	294.4	296.1	278.9	290.4	290.6	290.9	290.3	290.2	292.0
Other laundry and cleaning products (12/77 = 100)	145.6	150.6	150.3	151.5	151.4	151.0	152.0	144.5	149.5	149.2	150.4	150.2	149.8	150.9
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100)	148.0	148.8	148.0	147.3	148.1	148.1	148.0	147.9	148.9	148.0	147.4	148.2	148.1	148.2
Stationery, stationery supplies, and gift wrap (12/77 = 100)	136.8	139.6	138.9	139.0	140.3	139.5	139.5	140.0	142.7	142.8	142.8	143.2	142.5	142.6
Miscellaneous household products (12/77 = 100)	150.2	154.5	154.4	154.0	153.9	154.1	154.9	145.0	149.2	149.1	148.7	148.6	148.8	149.5
Lawn and garden supplies (12/77 = 100)	143.8	147.2	147.3	145.8	146.6	144.6	140.8	136.4	141.4	141.4	139.4	139.7	137.8	134.9
Housekeeping services	313.4	317.1	318.0	318.5	318.7	319.3	320.9	312.7	316.5	317.5	318.0	318.3	319.1	320.8
Postage	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5
Moving, storage, freight, household laundry, and drycleaning services (12/77 = 100)	156.6	160.8	161.7	162.3	162.2	162.8	165.9	156.8	160.8	161.7	162.3	162.3	163.1	166.0
Appliance and furniture repair (12/77 = 100)	138.3	141.7	142.9	143.3	144.0	144.9	145.4	136.7	140.0	141.2	141.6	142.2	143.1	143.6
APPAREL AND UPKEEP	194.9	195.5	196.1	195.6	195.0	197.3	200.4	194.1	194.8	195.3	194.7	194.0	196.3	199.3
Apparel commodities	184.1	183.7	184.2	183.6	182.8	185.3	188.5	183.8	183.5	183.9	183.2	182.4	184.7	188.0
Apparel commodities less footwear	180.4	179.4	180.2	179.7	179.3	181.9	185.3	179.9	179.4	179.8	179.2	178.7	181.2	184.6
Men's and boys'	186.5	187.8	189.5	189.1	188.2	188.3	190.8	186.6	187.9	189.0	188.1	188.3	191.1	191.1
Men's (12/77 = 100)	117.7	117.9	119.2	118.8	118.3	118.5	120.1	118.2	118.3	119.9	119.2	118.7	118.9	120.7
Suits, sport coats, and jackets (12/77 = 100)	110.6	110.3	110.9	111.2	110.7	111.4	112.3	103.5	103.5	103.9	103.9	103.3	104.4	105.5
Coats and jackets	103.7	100.0	101.1	100.7	98.2	99.5	104.4	106.4	102.4	104.3	103.3	100.7	101.7	107.5
Furnishings and special clothing (12/77 = 100)	138.6	142.8	144.5	144.3	145.3	144.8	145.4	135.8	138.6	140.4	140.3	141.3	140.8	141.6
Shirts (12/77 = 100)	123.8	122.0	124.6	122.6	120.9	121.6	125.6	126.2	125.0	127.6	125.8	124.2	124.7	128.6
Dungarees, jeans, and trousers (12/77 = 100)	111.4	112.0	113.2	113.0	112.8	112.3	112.4	116.9	117.7	119.1	118.6	118.4	118.1	118.2
Boys' (12/77 = 100)	120.2	123.5	123.3	123.7	123.0	122.6	124.1	118.3	121.5	121.4	121.6	120.9	120.7	122.4
Coats, jackets, sweaters, and shirts (12/77 = 100)	113.7	115.2	115.4	116.3	114.9	115.4	119.0	114.6	115.7	116.1	116.6	115.5	116.2	120.5
Furnishings (12/77 = 100)	132.6	134.9	136.1	135.8	134.9	134.2	135.1	128.6	130.4	131.6	131.2	130.4	129.9	130.7
Suits, trousers, sport coats, and jackets (12/77 = 100)	120.3	125.5	124.4	124.7	124.6	123.5	123.7	117.3	122.6	121.7	121.9	121.6	120.7	120.8
Women's and girls'	163.6	160.6	160.1	159.7	158.8	164.2	168.8	165.7	162.1	162.4	161.5	160.8	165.8	170.2
Women's (12/77 = 100)	108.7	106.5	106.1	106.1	1									

20. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1982	1983						1982	1983					
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
APPAREL AND UPKEEP—Continued														
Apparel Commodities—Continued														
Apparel commodities less footwear—Continued														
Separates and sportswear (12/77 = 100)	102.0	100.1	98.1	97.7	96.3	99.4	102.5	102.9	101.0	98.9	98.4	96.9	99.7	102.9
Underwear, nightwear, and hosiery (12/77 = 100)	129.9	131.1	133.0	132.8	131.7	133.2	135.1	129.6	130.8	132.7	132.4	131.4	132.9	134.8
Suits (12/77 = 100)	88.6	80.5	77.8	77.2	81.0	87.3	94.3	106.7	99.4	95.9	93.9	99.8	108.1	115.0
Girls' (12/77 = 100)	109.9	108.2	108.4	106.5	106.2	107.7	104.5	108.7	109.2	109.4	107.4	106.6	106.8	108.3
Coats, jackets, dresses, and suits (12/77 = 100)	104.5	97.1	96.3	96.3	100.1	101.9	101.6	102.3	98.5	97.3	96.5	100.0	96.7	98.5
Separates and sportswear (12/77 = 100)	106.0	107.5	108.1	103.5	99.8	102.0	106.3	105.2	109.1	110.3	106.1	101.3	102.9	106.8
Underwear, nightwear, hosiery, and accessories (12/77 = 100)	126.0	127.8	128.6	128.6	127.7	127.8	128.4	125.1	126.9	127.4	127.5	126.8	126.7	127.0
Infants' and toddlers'	275.8	280.4	280.7	283.0	282.4	281.9	287.4	286.8	291.0	290.9	293.4	293.1	292.3	297.9
Other apparel commodities	213.1	214.4	215.0	214.0	215.9	216.2	217.4	201.7	202.5	203.3	203.0	204.6	204.6	205.9
Sewing materials and notions (12/77 = 100)	119.3	121.8	122.9	122.4	123.0	121.6	121.9	117.7	119.4	120.6	120.5	121.0	119.8	120.2
Jewelry and luggage (12/77 = 100)	145.6	145.8	145.9	145.1	146.7	147.5	148.5	136.2	136.2	136.5	136.2	137.4	138.0	139.0
Footwear	206.8	207.5	208.0	206.8	203.8	205.7	208.0	206.7	207.2	207.7	206.6	203.7	205.5	207.6
Men's (12/77 = 100)	133.2	133.9	133.7	133.7	132.8	132.3	134.8	135.0	135.6	135.4	135.5	134.7	134.2	136.7
Boys' and girls' (12/77 = 100)	129.5	130.7	131.7	130.7	128.9	130.3	130.4	132.1	133.4	134.3	133.1	131.0	132.6	132.9
Women's (12/77 = 100)	126.9	126.5	126.9	125.6	122.9	125.3	126.8	122.8	122.0	122.5	121.3	118.9	121.1	122.3
Apparel services	281.3	288.7	290.3	290.9	291.8	292.3	293.4	279.7	287.1	288.6	289.2	290.0	290.4	291.5
Laundry and drycleaning other than coin operated (12/77 = 100)	167.2	171.7	172.8	173.5	174.1	174.5	174.4	165.8	170.3	171.3	171.9	172.5	172.9	173.3
Other apparel services (12/77 = 100)	148.2	152.0	152.5	152.4	152.7	152.7	153.7	149.3	153.1	153.7	153.7	153.9	153.9	154.8
TRANSPORTATION														
Private	295.5	292.3	296.2	298.3	300.4	302.4	303.7	297.0	293.5	297.5	299.6	301.9	304.1	305.5
New cars	291.1	287.5	291.7	293.8	296.0	298.0	299.2	293.8	289.9	294.1	296.3	298.6	300.8	302.2
Used cars	197.7	201.1	201.6	201.6	201.4	202.1	202.7	197.4	200.7	201.3	201.2	201.0	201.7	202.3
Gasoline	306.7	312.7	317.1	322.7	329.6	336.8	343.9	306.7	312.7	317.1	322.7	329.6	336.8	343.9
Automobile maintenance and repair	390.6	367.6	380.9	386.1	389.3	389.5	387.1	391.9	369.3	382.4	387.4	390.6	391.0	388.8
Body work (12/77 = 100)	321.9	327.4	328.7	329.5	329.8	331.0	332.3	322.6	328.1	329.4	330.2	330.4	331.7	333.0
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100)	160.4	164.7	165.5	166.4	166.6	167.1	167.7	159.4	163.4	164.3	165.3	165.6	166.0	166.5
Maintenance and servicing (12/77 = 100)	153.2	157.3	157.7	157.7	158.3	158.9	160.7	157.2	161.2	161.6	161.7	162.2	162.8	164.5
Power plant repair (12/77 = 100)	149.3	151.0	151.7	152.2	152.0	152.8	152.6	148.6	150.4	151.0	151.5	151.3	152.2	151.9
Other private transportation	154.3	156.2	156.8	157.0	157.3	157.5	158.4	153.8	155.7	156.3	156.4	156.6	156.9	157.8
Other private transportation commodities	261.4	258.4	258.7	258.1	258.6	260.0	260.8	264.1	259.3	259.6	258.9	259.4	261.1	261.8
Motor oil, coolant, and other products (12/77 = 100)	214.4	212.2	210.9	210.4	209.6	208.9	208.3	216.9	214.7	213.3	212.9	212.1	211.2	210.9
Automobile parts and equipment (12/77 = 100)	151.9	156.1	155.1	156.0	155.3	153.5	154.2	151.0	155.0	153.9	154.8	154.1	152.6	153.2
Tires	136.7	134.5	133.6	133.2	132.7	132.4	131.9	138.6	136.4	135.4	135.0	134.5	134.1	133.8
Other parts and equipment (12/77 = 100)	189.6	186.4	185.1	184.3	183.5	183.4	181.7	193.2	190.1	188.8	187.9	187.2	186.9	185.4
Other private transportation services	135.4	133.4	132.7	132.7	132.3	131.6	132.9	135.4	133.4	132.4	132.5	132.1	131.3	132.8
Automobile insurance	276.4	273.1	273.9	273.3	274.1	276.0	277.3	279.1	273.7	274.4	273.6	274.5	276.8	277.8
Automobile finance charges (12/77 = 100)	283.9	299.0	301.2	301.1	302.4	302.9	303.8	283.2	298.2	300.5	300.5	302.0	302.5	303.4
Automobile rental, registration, and other fees (12/77 = 100)	185.2	157.3	154.5	152.2	151.7	155.4	156.4	184.6	156.6	153.8	151.4	151.1	155.0	155.8
State registration	138.8	141.4	143.8	144.7	145.6	146.0	146.9	139.8	142.2	144.9	144.6	146.9	147.2	147.9
Drivers' licenses (12/77 = 100)	183.7	186.6	192.3	192.3	194.8	194.6	195.3	183.2	186.3	192.1	192.1	194.7	194.5	195.2
Vehicle inspection (12/77 = 100)	132.8	133.9	133.9	150.3	152.9	153.0	153.0	133.1	134.1	134.1	150.6	153.4	153.4	153.4
Other vehicle-related fees (12/77 = 100)	128.5	131.1	131.2	131.2	139.0	139.0	139.8	129.9	132.4	132.5	132.5	139.8	139.8	140.5
Public	154.2	157.6	158.5	159.0	157.9	158.8	160.5	162.7	165.4	166.5	167.0	165.5	166.3	167.8
Airline fare	356.3	361.1	359.1	361.2	363.2	365.0	366.6	348.2	353.3	351.2	352.7	354.4	355.7	357.2
Intercity bus fare	413.7	417.2	411.2	415.4	418.8	420.7	423.3	411.1	415.9	407.4	410.9	415.9	417.1	419.5
Intracity mass transit	370.6	394.6	401.7	403.9	404.2	412.8	415.1	372.5	396.9	403.0	405.2	404.1	412.7	415.3
Taxi fare	315.2	320.2	321.7	321.7	322.6	323.7	324.6	314.7	319.1	320.1	320.6	320.7	321.6	322.5
Intercity train fare	300.2	302.0	302.1	301.0	301.0	302.4	303.5	309.9	311.4	311.6	311.0	311.0	311.8	312.7
Medical care	338.4	352.0	352.3	353.2	361.3	364.5	364.8	338.4	352.5	352.7	353.6	362.3	365.2	365.4
MEDICAL CARE														
Medical care commodities	338.7	353.5	354.3	355.4	357.7	360.0	361.2	336.5	351.2	352.1	353.3	355.6	357.9	359.2
Prescription drugs	211.6	221.2	222.5	223.2	224.2	225.4	226.3	212.1	221.6	222.8	223.6	224.5	225.8	226.7
Anti-infective drugs (12/77 = 100)	199.4	211.6	212.9	213.7	214.5	215.7	216.7	200.5	212.8	214.1	214.8	215.6	216.9	218.0
Tranquilizers and sedatives (12/77 = 100)	149.1	155.2	155.8	156.6	157.2	157.9	158.1	151.2	157.2	157.8	158.8	159.2	160.1	160.3
Circulatories and diuretics (12/77 = 100)	161.5	174.7	176.3	177.0	177.6	179.1	179.9	161.1	174.5	176.1	176.7	177.2	178.7	179.7
Hormones, diabetic drugs, biologicals, and prescription medical supplies (12/77 = 100)	140.3	153.4	153.5	153.3	154.0	155.4	155.8	142.8	153.2	153.4	153.2	153.9	155.4	155.7
Pain and symptom control drugs (12/77 = 100)	183.5	196.1	197.8	198.1	198.1	199.2	200.0	185.1	198.1	199.7	199.9	199.8	201.1	201.9
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100)	161.7	171.7	172.3	173.3	175.1	175.7	177.5	163.6	173.4	174.1	175.1	176.8	177.5	179.4
Nonprescription drugs and medical supplies (12/77 = 100)	152.3	159.4	160.7	161.8	162.3	162.6	163.8	152.4	159.7	161.0	162.0	162.5	162.9	164.1
Eyeglasses (12/77 = 100)	149.2	153.8	154.7	155.2	155.9	156.7	157.3	149.8	154.6	155.4	156.0	156.7	157.5	159.1
Internal and respiratory over-the-counter drugs	132.6	135.1	134.8	135.0	135.8	136.2	137.7	131.4	133.9	133.8	133.9	134.6	135.1	136.7
Nonprescription medical equipment and supplies (12/77 = 100)	240.7	248.7	250.9	251.9	253.5	255.0	255.6	241.9	250.2	252.1	253.3	254.9	256.3	256.9
Medical care services	144.1	149.4	150.0	150.4	150.3	151.0	151.2	145.1	150.6	151.3	151.4	151.3	152.4	152.3
Physicians' services	366.9	382.8	383.5	384.6	387.2	389.8	391.0	363.9	379.7	380.5	381.7	384.4	387.0	388.3
Professional services	306.6	318.0	319.7	322.0	324.2	326.0	327.6	306.9	318.4	320.0	322.2	324.6	326.5	328.0
Physicians' services	334.2	348.2	349.4	351.7	353.9	354.9	356.5	337.4	351.8	353.9	355.3	357.6	358.8	360.5

20. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1982	1983						1982	1983					
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
MEDICAL CARE—Continued														
Medical care service—Continued														
Professional services—Continued														
Dental services	287.0	295.7	298.6	301.2	303.8	306.5	308.3	285.0	293.4	296.1	298.9	301.6	304.3	306.1
Other professional services (12/77 = 100)	146.1	151.9	151.8	152.3	153.0	154.0	154.3	143.0	148.5	148.5	148.7	149.6	150.5	150.8
Other medical care services	439.8	461.1	460.5	460.4	463.3	466.9	467.8	435.6	456.9	456.4	456.4	459.4	462.9	463.9
Hospital and other medical services (12/77 = 100)	180.9	190.2	190.8	191.5	193.8	196.7	197.8	178.3	188.4	189.0	189.6	191.9	194.6	195.7
Hospital room	576.8	608.0	609.6	609.6	619.1	627.6	633.8	569.1	600.7	601.8	602.2	611.2	619.5	626.1
Other hospital and medical care services (12/77 = 100)	176.0	186.3	187.0	188.3	189.9	193.0	193.3	174.7	184.9	185.6	186.8	188.4	191.2	191.4
ENTERTAINMENT	240.3	244.6	244.8	245.4	246.0	246.6	247.5	236.5	241.1	241.3	241.9	242.5	243.1	244.1
Entertainment commodities	242.9	246.0	246.3	246.3	246.7	248.0	248.0	236.6	240.5	240.7	240.7	241.4	242.5	242.6
Reading materials (12/77 = 100)	153.1	158.4	159.7	158.5	158.5	160.9	161.2	152.4	157.8	159.1	158.0	158.0	160.2	160.5
Newspapers	290.4	300.2	301.6	302.0	302.7	303.5	304.0	290.1	300.4	301.7	302.0	302.7	303.4	303.9
Magazines, periodicals, and books (12/77 = 100)	159.2	164.8	166.8	164.2	163.6	168.4	168.6	159.2	164.8	167.0	164.2	163.6	168.5	168.8
Sporting goods and equipment (12/77 = 100)	134.3	133.6	133.2	134.0	134.2	134.1	134.6	125.8	127.5	127.3	127.7	128.3	128.3	128.9
Sport vehicles (12/77 = 100)	137.1	136.3	135.7	136.7	137.1	136.4	137.4	123.6	126.7	126.5	126.8	127.8	127.8	128.5
Indoor and warm weather sport equipment (12/77 = 100)	120.6	121.3	120.5	119.9	118.6	118.5	118.6	118.3	118.9	118.0	117.6	116.4	116.6	116.3
Bicycles	198.7	196.1	196.6	199.2	199.8	199.9	200.1	199.9	197.4	197.9	200.2	200.7	200.7	200.9
Other sporting goods and equipment (12/77 = 100)	131.9	132.0	132.2	132.2	132.8	133.1	134.6	132.1	132.0	132.3	132.2	132.7	132.9	134.5
Toys, hobbies, and other entertainment (12/77 = 100)	137.1	138.5	138.4	138.6	139.0	139.3	138.8	136.1	137.2	137.1	137.3	137.7	138.0	137.7
Toys, hobbies, and music equipment (12/77 = 100)	136.4	137.3	137.4	137.4	137.7	137.7	136.7	133.0	133.4	133.5	133.6	134.0	133.9	133.0
Photographic supplies and equipment (12/77 = 100)	129.6	131.6	131.7	131.4	131.6	131.6	131.0	130.6	132.6	132.6	132.4	132.7	132.8	132.1
Pet supplies and expenses (12/77 = 100)	143.9	145.8	145.1	145.9	146.6	147.5	148.5	145.0	146.9	146.1	146.9	147.6	148.6	149.6
Entertainment services	237.2	243.1	243.2	244.7	245.4	245.0	247.2	237.6	243.3	243.5	245.1	245.8	245.4	247.8
Fees for participant sports (12/77 = 100)	148.0	151.3	150.8	151.3	151.8	152.2	154.4	149.4	152.4	152.1	152.5	152.8	153.2	155.5
Admissions (12/77 = 100)	136.6	141.7	142.4	144.7	146.4	145.4	145.2	135.6	140.7	143.7	143.7	145.4	144.5	144.2
Other entertainment services (12/77 = 100)	129.6	131.6	131.9	131.8	130.6	129.8	131.0	130.5	132.4	132.6	132.6	131.4	130.7	132.3
OTHER GOODS AND SERVICES	271.2	283.2	283.6	284.5	287.5	289.0	294.4	267.8	281.4	281.8	282.8	286.4	288.0	292.0
Tobacco products	257.3	284.9	285.3	285.9	294.6	297.7	298.0	256.6	284.3	284.8	285.4	294.3	297.5	297.8
Cigarettes	262.3	292.0	292.4	293.1	302.8	306.1	306.4	261.4	290.9	291.5	292.0	301.7	305.2	305.5
Other tobacco products and smoking accessories (12/77 = 100)	142.9	149.6	149.6	149.9	150.5	150.9	151.2	143.1	149.5	149.6	149.8	150.5	150.9	151.2
Personal care	252.9	259.1	259.4	260.9	261.3	262.1	263.0	250.9	257.1	257.3	259.0	259.4	260.1	260.9
Toilet goods and personal care appliances	251.5	258.5	258.6	261.4	262.3	261.9	262.4	252.1	259.3	259.3	262.1	263.0	262.6	263.0
Products for the hair, hairpieces, and wigs (12/77 = 100)	147.8	150.9	150.8	151.7	152.5	152.8	153.0	146.9	150.3	150.0	150.9	151.7	151.9	152.0
Dental and shaving products (12/77 = 100)	155.2	160.5	161.2	162.5	162.6	160.0	160.8	153.5	158.9	159.6	160.8	160.8	158.5	159.1
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100)	141.4	145.6	145.1	148.5	148.8	148.6	148.3	142.1	146.3	145.7	149.2	149.5	149.2	148.9
Other toilet goods and small personal care appliances (12/77 = 100)	142.2	146.0	146.7	147.1	147.9	148.9	149.9	145.8	149.8	150.3	150.7	151.6	152.4	153.4
Personal care services	255.1	260.7	261.1	261.6	261.5	263.3	264.6	250.0	255.4	255.7	256.3	256.4	258.1	259.3
Beauty parlor services for women	258.3	264.2	264.5	265.0	264.3	266.5	268.1	251.6	257.2	257.4	258.0	257.5	259.7	261.1
Haircuts and other barber shop services for men (12/77 = 100)	141.0	143.8	144.1	144.4	145.1	145.6	146.0	139.8	142.7	143.0	143.2	143.9	144.4	144.8
Personal and educational expenses	319.3	324.9	325.6	326.0	327.2	328.1	344.6	320.4	326.8	327.7	328.1	329.4	330.5	345.6
Schoolbooks and supplies	283.0	292.5	292.9	293.6	294.2	294.6	306.6	286.8	296.5	296.8	297.6	298.3	298.8	310.8
Personal and educational services	327.7	332.7	333.5	333.8	335.1	336.2	353.5	328.7	334.5	335.5	335.8	337.3	338.6	354.3
Tuition and other school fees	167.2	167.6	167.7	167.6	168.0	168.2	178.6	167.7	168.2	168.2	168.2	168.5	168.8	178.4
College tuition (12/77 = 100)	164.9	167.4	167.4	167.3	167.8	168.0	180.7	166.9	167.5	167.5	167.4	167.9	168.0	180.5
Elementary and high school tuition (12/77 = 100)	168.7	168.8	168.9	168.9	168.9	169.2	170.9	169.6	169.8	169.9	169.9	169.9	170.3	172.7
Personal expenses (12/77 = 100)	169.4	183.1	185.1	186.1	187.9	189.8	192.6	171.7	183.1	185.3	186.2	188.3	190.4	193.0
Special indexes:														
Gasoline, motor oil, coolant, and other products	385.7	363.4	376.2	381.2	384.3	384.5	382.3	386.9	365.0	377.6	382.4	385.4	385.9	383.9
Insurance and finance								433.9	411.6	410.0	410.2	411.4	415.6	418.2
Utilities and public transportation	326.5	333.4	337.2	341.5	343.6	343.6	344.7	325.4	332.6	336.5	341.1	343.1	342.9	343.8
Housekeeping and home maintenance services	355.0	357.3	358.2	358.6	358.9	360.1	361.6	355.7	359.5	360.3	360.8	361.7	364.2	365.2

¹Excludes motor oil, coolant, and other products as of January 1983.

21. Consumer Price Index for All Urban Consumers: Cross classification of region and population size class by expenditure category and commodity and service group

[December 1977 = 100]

Category and group	Size class A (1.25 million or more)			Size class B (385,000-1,250 million)			Size class C (75,000-385,000)			Size class D (75,000 or less)		
	1983			1983			1983			1983		
	Apr.	June	Aug.	Apr.	June	Aug.	Apr.	June	Aug.	Apr.	June	Aug.
Northeast												
EXPENDITURE CATEGORY												
All items	153.1	153.9	155.0	159.0	160.8	161.5	163.5	164.2	165.5	158.2	158.5	160.0
Food and beverages	147.0	147.4	147.5	146.2	146.8	147.4	151.1	150.6	151.6	145.8	146.3	147.7
Housing	158.0	158.9	159.6	169.1	170.7	169.7	176.4	176.7	176.7	165.1	163.9	164.2
Apparel and upkeep	122.6	122.6	123.2	122.4	124.4	125.8	128.5	128.9	128.6	130.2	129.5	128.8
Transportation	160.1	161.7	164.2	165.4	169.2	171.4	164.3	166.6	169.5	164.3	166.7	169.7
Medical care	159.6	160.9	164.4	163.0	163.5	167.1	166.0	166.7	171.2	165.8	168.5	171.9
Entertainment	143.1	144.1	144.3	139.1	138.8	139.6	139.8	142.1	143.8	146.5	148.1	149.3
Other goods and services	156.2	156.7	160.3	158.6	159.8	162.8	162.3	163.1	165.9	162.1	162.2	166.7
COMMODITY AND SERVICE GROUP												
Commodities	148.4	149.1	150.1	153.0	154.8	156.0	153.6	154.3	155.4	151.3	152.3	153.9
Commodities less food and beverages	149.0	150.0	141.6	155.7	158.3	159.8	154.3	155.8	156.8	153.4	154.8	156.3
Services	159.0	160.0	161.3	168.2	169.8	169.8	179.4	180.1	181.7	168.5	167.9	169.2
North Central Region												
EXPENDITURE CATEGORY												
All items	163.6	165.2	166.6	161.1	162.0	162.2	157.3	158.3	159.6	158.1	159.3	160.7
Food and beverages	145.4	145.0	144.5	144.1	143.8	143.6	145.6	145.0	145.0	150.9	151.7	151.9
Housing	181.9	185.3	186.3	171.7	172.2	171.7	164.1	165.2	165.7	163.8	163.9	165.2
Apparel and upkeep	117.9	116.8	119.5	128.8	129.2	128.9	128.4	127.0	129.9	123.5	122.2	125.4
Transportation	161.7	164.2	167.4	164.0	167.1	168.6	163.9	167.1	169.8	161.2	165.7	167.8
Medical care	165.3	166.1	168.4	168.3	168.5	172.4	165.8	166.3	167.5	172.2	173.1	175.4
Entertainment	141.9	141.9	143.3	136.7	136.9	131.8	145.9	147.3	148.4	136.5	137.1	136.6
Other goods and services	156.2	156.7	158.1	167.4	168.5	170.4	152.6	153.8	158.3	165.2	166.3	169.3
COMMODITY AND SERVICE GROUP												
Commodities	152.7	153.5	154.7	151.7	152.8	153.1	149.1	150.0	151.5	148.5	149.9	151.3
Commodities less food and beverages	155.9	157.5	159.7	154.6	156.8	157.1	150.3	152.2	154.5	147.3	149.0	151.0
Services	179.9	182.4	184.3	176.1	176.8	176.8	170.7	171.7	172.8	173.0	174.1	175.6
South												
EXPENDITURE CATEGORY												
All items	159.1	161.2	162.4	160.9	161.7	162.9	160.2	161.2	162.3	160.8	162.0	162.8
Food and beverages	150.5	150.9	150.9	149.2	148.9	149.9	147.4	147.3	147.8	149.9	150.7	150.7
Housing	163.5	168.5	169.7	166.9	167.9	168.4	167.8	168.7	169.5	169.9	170.3	171.9
Apparel and upkeep	128.7	129.8	131.8	126.2	124.6	126.2	123.1	123.0	124.1	112.5	113.9	111.3
Transportation	163.8	166.8	168.7	167.1	170.3	172.2	165.9	168.5	170.3	162.9	166.0	167.3
Medical care	168.7	169.0	170.0	167.9	167.5	169.0	177.5	178.5	180.0	183.0	184.4	184.2
Entertainment	138.6	139.4	140.7	169.0	153.0	154.4	146.5	146.1	146.2	145.6	145.5	146.4
Other goods and services	158.4	159.3	162.1	154.5	162.9	164.9	153.5	160.0	161.6	160.4	161.0	162.9
COMMODITY AND SERVICE GROUP												
Commodities	152.3	153.7	155.0	153.8	154.5	155.6	151.0	152.0	153.7	151.1	153.0	153.2
Commodities less food and beverages	152.7	154.8	156.8	155.5	156.8	157.9	152.4	154.1	156.4	151.4	153.8	154.2
Services	168.6	171.5	172.7	171.6	172.6	173.9	174.4	175.3	175.6	175.3	175.7	177.1
West												
EXPENDITURE CATEGORY												
All items	159.2	161.4	162.7	159.5	161.8	162.5	152.2	153.5	155.2	157.0	160.0	162.2
Food and beverages	151.8	151.2	150.9	152.8	153.7	152.8	148.6	148.6	148.3	153.1	154.4	154.1
Housing	164.0	166.2	168.3	163.5	165.1	165.4	151.8	151.2	152.9	154.4	159.1	163.2
Apparel and upkeep	121.0	121.8	123.3	121.7	128.4	126.9	122.7	123.3	122.8	139.8	142.9	142.4
Transportation	165.1	171.3	173.0	165.8	171.6	174.4	162.4	167.7	170.6	161.1	165.6	167.8
Medical care	175.3	176.7	177.3	171.5	172.6	175.8	174.8	176.4	180.0	175.0	177.5	179.2
Entertainment	139.7	139.6	139.8	145.6	145.9	146.7	139.6	144.8	148.7	157.0	157.3	158.5
Other goods and services	163.5	155.5	165.0	162.8	163.4	165.5	158.1	158.0	161.2	169.3	169.2	173.4
COMMODITY AND SERVICE GROUP												
Commodities	149.9	152.4	152.6	151.7	154.6	155.2	149.8	152.1	153.3	149.0	151.2	152.4
Commodities less food and beverages	147.0	148.6	153.6	150.1	150.7	156.4	148.6	149.6	155.4	146.8	147.0	151.7
Services	170.7	171.6	175.9	169.0	170.2	172.6	154.0	155.3	157.6	172.5	168.8	176.6

22. Consumer Price Index—U.S. city average, and selected areas

[1967 = 100 unless otherwise specified]

Area ¹	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1982	1983					1982	1983						
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
U.S. city average ²	293.3	295.5	297.1	298.1	299.3	300.3	301.8	292.8	294.9	296.3	297.2	298.2	299.5	300.8
Anchorage, Alaska (10/67 = 100)	263.4	...	262.5	...	265.8	...	276.9	258.9	...	254.7	...	257.5	...	260.8
Atlanta, Ga.	...	297.6	...	302.3	...	303.9	...	...	300.1	...	302.0	...	304.3	...
Baltimore, Md.	289.2	...	296.5	...	300.4	...	302.9	288.8	...	296.7	...	297.4	...	299.5
Boston, Mass.	282.9	...	287.3	...	289.1	...	290.6	282.7	...	285.1	...	288.0	...	288.6
Buffalo, N.Y.	...	282.5	...	284.3	...	285.9	...	...	278.4	...	283.3	...	285.1	...
Chicago, Ill.-Northwestern Ind.	294.0	295.3	296.3	298.6	299.6	301.6	303.0	292.9	293.6	294.8	295.8	296.4	297.4	299.1
Cincinnati, Ohio-Ky.-Ind.	300.2	...	311.3	...	312.4	...	314.6	302.8	...	309.5	...	308.0	...	311.2
Cleveland, Ohio	...	320.6	...	325.5	...	327.3	...	...	315.4	...	316.8	...	317.6	...
Dallas-Ft. Worth, Tex.	...	308.6	...	314.1	...	315.9	...	...	301.7	...	306.3	...	309.0	...
Denver-Boulder, Colo.	324.5	...	334.7	...	335.8	...	339.4	331.3	...	331.9	...	331.7	...	337.3
Detroit, Mich.	294.9	294.9	294.9	296.6	298.4	298.8	299.2	291.2	295.0	298.9	300.7	303.8	303.7	304.6
Honolulu, Hawaii	...	272.8	...	271.4	...	273.5	...	...	276.9	...	273.4	...	278.2	...
Houston, Tex.	...	316.7	...	321.3	...	324.0	...	...	317.6	...	319.7	...	321.6	...
Kansas City, Mo.-Kansas	...	295.9	...	297.5	...	301.3	...	...	293.5	...	298.3	...	299.3	...
Los Angeles-Long Beach, Anaheim, Calif.	288.2	289.5	292.0	293.6	294.5	295.2	296.4	291.7	290.2	292.1	292.1	293.2	293.7	296.7
Miami, Fla. (11/77 = 100)	156.1	...	159.4	...	160.8	...	162.9	157.5	...	161.4	...	162.8	...	164.3
Milwaukee, Wis.	302.4	...	308.8	...	310.1	...	313.9	306.3	...	315.4	...	325.0	...	329.1
Minneapolis-St. Paul, Minn.-Wis.	...	309.4	...	312.6	...	316.2	...	...	312.4	...	311.8	...	308.5	...
New York, N.Y.-Northeastern N.J.	280.7	286.5	287.4	288.1	289.1	289.5	292.1	278.9	282.2	283.8	285.9	286.1	288.4	288.1
Northeast, Pa. (Scranton)	276.0	...	281.7	...	283.4	...	297.2	277.1	...	282.9	...	286.5	...	290.0
Philadelphia, Pa.-N.J.	283.0	283.5	284.3	286.1	288.3	289.9	291.4	282.1	286.8	286.5	288.7	291.1	293.3	294.2
Pittsburgh, Pa.	...	305.2	...	305.4	...	310.2	...	...	300.7	...	299.5	...	304.2	...
Portland, Oreg.-Wash.	288.2	...	288.5	...	291.5	...	293.3	285.8	...	283.8	...	286.4	...	288.2
St. Louis, Mo.-Ill.	294.1	...	295.4	...	299.3	...	302.0	293.1	...	294.0	...	296.7	...	299.1
San Diego, Calif.	325.6	...	332.0	...	335.2	...	340.4	321.1	...	314.8	...	320.0	...	323.8
San Francisco-Oakland, Calif.	...	299.3	...	303.0	...	306.0	...	...	294.7	...	298.6	...	301.6	...
Seattle-Everett, Wash.	302.2	...	300.9	...	306.3	...	308.8	298.3	...	290.4	...	294.2	...	297.7
Washington, D.C.-Md.-Va.	286.5	...	292.6	...	296.8	...	297.0	291.9	...	297.5	...	300.0	...	300.9

¹The areas listed include not only the central city but the entire portion of the Standard Metropolitan Statistical Area, as defined for the 1970 Census of Population, except that the Standard Consolidated Area is used for New York and Chicago.

²Average of 85 cities.

23. Producer Price Indexes, by stage of processing

[1967 = 100]

Commodity grouping	Annual average 1982	1982			1983									
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June ¹	July	Aug.	Sept.	Oct.
FINISHED GOODS														
Finished goods	280.6	284.1	284.9	285.5	283.9	284.1	283.4	283.1	284.2	285.0	285.7	286.2	285.1	287.9
Finished consumer goods	281.0	284.3	285.3	285.6	283.5	283.7	282.7	282.3	283.6	^r 284.6	285.2	285.6	285.1	287.1
Finished consumer foods	259.3	257.7	257.4	258.3	258.4	261.0	261.1	262.9	262.6	^r 261.2	260.8	261.0	263.3	264.3
Crude	252.7	232.4	236.1	247.6	232.9	240.8	247.9	265.8	267.2	^r 251.2	249.7	262.4	269.8	289.8
Processed	257.7	257.9	257.2	257.1	258.5	260.7	260.1	260.5	260.1	^r 260.0	259.6	258.7	260.5	259.9
Nondurable goods less foods	333.6	340.0	342.5	342.2	336.6	333.7	332.0	328.7	332.0	^r 335.7	337.8	338.4	338.6	337.9
Durable goods	226.7	231.0	231.2	232.0	231.7	232.9	231.9	232.2	232.9	^r 233.1	233.1	233.5	228.9	235.4
Consumer nondurable goods less food and energy	223.8	227.8	228.4	229.2	228.3	228.9	229.4	230.1	230.3	^r 230.7	232.2	232.3	232.8	233.3
Capital equipment	279.4	283.2	283.8	284.9	285.2	285.6	285.6	286.2	286.5	^r 286.7	287.4	288.0	285.4	290.9
INTERMEDIATE MATERIALS														
Intermediate materials, supplies, and components	310.4	309.9	309.9	310.1	309.2	309.9	309.5	308.7	309.7	^r 311.3	313.0	314.4	315.7	316.0
Materials and components for manufacturing	289.8	289.4	288.7	288.3	288.6	291.1	290.2	291.0	291.9	292.4	293.4	294.8	296.3	296.4
Materials for food manufacturing	255.1	254.2	251.0	249.8	250.9	254.1	252.8	255.1	257.0	^r 257.0	257.3	260.8	269.3	264.0
Materials for nondurable manufacturing	284.4	280.4	279.2	278.0	277.0	277.0	276.6	277.3	277.7	^r 277.7	278.3	281.4	281.9	283.5
Materials for durable manufacturing	310.1	309.8	309.3	309.4	312.0	319.2	315.7	316.6	318.4	^r 319.0	320.1	320.6	322.8	322.2
Components for manufacturing	273.9	276.7	276.9	277.3	276.8	277.6	278.3	278.9	279.4	^r 280.3	281.8	281.7	281.8	282.2
Materials and components for construction	293.7	293.7	293.6	294.7	296.5	298.8	299.6	300.9	301.2	^r 302.4	302.9	303.6	302.8	303.5
Processed fuels and lubricants	591.7	590.0	593.0	595.0	577.9	565.4	564.2	543.3	547.8	^r 562.0	572.7	576.4	579.2	579.9
Manufacturing industries	497.8	496.6	500.4	502.2	485.2	475.5	480.6	460.4	462.9	^r 475.9	487.7	491.1	495.4	498.7
Nonmanufacturing industries	674.3	672.1	674.2	676.4	659.4	644.6	637.2	615.9	622.2	^r 637.5	647.0	650.9	652.1	650.4
Containers	285.6	285.1	284.9	285.0	285.0	285.3	285.2	284.8	285.8	285.9	286.5	286.8	287.3	288.3
Supplies	272.1	272.0	272.8	273.0	273.1	273.5	273.9	275.5	275.6	^r 275.6	276.4	278.0	280.1	280.4
Manufacturing industries	265.8	266.9	266.9	267.2	267.4	267.8	268.1	268.6	268.9	^r 269.8	270.4	270.6	271.2	271.8
Nonmanufacturing industries	275.7	274.9	276.1	276.3	276.4	276.8	277.1	279.3	279.3	^r 278.8	279.8	282.0	285.0	285.1
Feeds	207.0	192.9	199.8	204.7	206.5	207.4	207.7	219.8	218.1	^r 213.4	216.1	230.2	247.1	245.6
Other supplies	289.8	291.9	291.9	291.1	290.9	291.2	291.6	291.9	292.2	^r 292.5	293.1	293.1	293.5	293.9
CRUDE MATERIALS														
Crude materials for further processing	319.5	312.0	313.2	312.7	313.9	320.2	321.6	325.8	325.8	^r 323.3	320.6	326.9	328.3	324.5
Foodstuffs and feedstuffs	247.8	236.3	236.3	237.1	239.6	249.3	249.1	256.8	256.5	252.1	248.6	256.6	257.4	253.9
Nonfood materials	473.9	474.8	478.6	475.3	473.6	473.0	477.7	474.6	475.4	^r 476.8	475.5	478.4	481.1	476.7
Nonfood materials except fuel	376.8	371.9	369.2	365.8	368.0	366.0	366.8	367.0	369.0	^r 370.5	370.5	374.2	376.6	375.3
Manufacturing industries	387.2	382.2	379.2	375.0	377.6	375.1	375.9	376.1	378.3	^r 379.9	379.6	383.9	386.5	385.1
Construction	270.3	266.3	265.6	268.1	267.5	269.1	269.3	270.0	270.3	^r 271.3	272.9	272.5	273.1	272.6
Crude fuel	886.1	917.2	954.7	952.2	930.7	937.7	961.8	941.6	935.9	^r 936.7	929.1	926.8	931.2	911.2
Manufacturing industries	1,034.8	1,075.3	1,125.5	1,121.4	1,093.8	1,103.9	1,134.3	1,107.6	1,100.9	^r 1,102.3	1,091.9	1,089.5	1,094.7	1,067.9
Nonmanufacturing industries	782.2	805.9	834.2	832.2	815.5	820.0	839.2	824.0	819.1	^r 819.4	814.1	811.7	815.7	800.9
SPECIAL GROUPINGS														
Finished goods excluding foods	285.8	290.8	292.0	292.5	290.3	289.6	288.7	287.7	289.3	290.8	291.9	292.4	290.3	293.7
Finished consumer goods excluding foods	287.8	293.3	294.8	295.0	291.4	290.3	288.9	287.3	289.4	^r 291.6	292.7	293.2	291.3	293.8
Finished consumer goods less energy	244.1	246.5	246.7	247.6	247.1	248.7	248.6	249.5	249.7	^r 249.4	249.8	250.1	249.6	252.2
Intermediate materials less foods and feeds	315.7	315.5	315.5	315.7	314.6	315.2	314.8	313.6	314.6	^r 316.4	318.1	319.2	319.8	320.4
Intermediate materials less energy	290.4	290.1	289.8	290.0	290.5	292.4	292.1	293.2	293.9	^r 294.4	295.3	296.6	297.8	298.1
Intermediate foods and feeds	239.4	234.4	234.4	235.1	236.4	238.8	238.0	243.6	244.4	^r 242.8	243.8	250.9	262.2	258.2
Crude materials less agricultural products	536.3	537.2	541.9	537.4	536.0	535.1	539.7	536.1	536.2	537.5	536.3	539.0	541.7	537.4
Crude materials less energy	240.4	230.0	229.2	229.9	232.5	241.4	242.7	248.6	249.0	^r 246.2	243.7	250.9	252.2	249.1

¹Data for June 1983 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication. r = revised.

24. Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1982	1982			1983									
			Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June ¹	July	Aug.	Sept.	Oct.
	All commodities	299.3	299.8	300.3	300.7	299.9	300.9	300.6	300.6	301.5	'302.4	303.2	304.9	305.3	306.3
	All commodities (1957-59 = 100)	317.6	318.1	318.6	319.0	318.2	319.3	318.9	318.9	319.9	'320.8	321.7	323.5	323.9	325.0
	Farm products and processed foods and feeds	248.9	243.8	243.9	244.8	245.8	250.4	250.6	254.7	254.7	'252.5	251.6	255.7	259.2	257.9
	Industrial commodities	312.3	314.3	315.0	315.2	313.9	313.9	313.5	312.4	313.6	'315.3	316.6	317.5	317.2	318.7
	FARM PRODUCTS AND PROCESSED FOODS AND FEEDS														
01	Farm products	242.4	299.2	230.7	232.6	233.2	240.7	241.5	250.5	250.4	'247.4	244.3	253.5	256.3	255.2
01-1	Fresh and dried fruits and vegetables	253.7	223.0	233.4	248.8	227.6	227.8	234.9	266.6	260.1	'264.4	258.0	269.9	275.5	307.6
01-2	Grains	210.9	183.2	198.6	262.3	206.3	222.4	227.4	243.8	242.2	'241.5	236.7	251.8	258.0	253.7
01-3	Livestock	257.8	248.5	239.1	237.2	242.3	251.1	251.4	260.6	258.0	'251.7	240.7	242.2	231.5	229.4
01-4	Live poultry	191.9	177.1	181.6	177.8	177.1	200.1	177.8	170.8	186.9	199.3	214.5	221.4	242.2	208.5
01-5	Plant and animal fibers	202.9	198.1	195.3	200.6	201.7	206.4	217.0	213.6	223.8	229.7	230.4	240.7	238.7	234.5
01-6	Fluid milk	282.5	285.0	285.9	285.5	284.5	284.3	282.9	280.8	279.8	278.6	278.7	281.7	284.4	284.1
01-7	Eggs	178.7	177.9	172.5	170.0	170.0	170.0	170.0	170.0	185.1	169.3	177.2	189.5	200.1	(²)
01-8	Hay, haysseeds, and oilseeds	212.8	194.3	204.8	209.0	212.4	217.9	217.8	226.3	227.3	213.3	227.3	262.8	297.8	288.8
01-9	Other farm products	274.5	274.0	276.3	280.1	279.9	281.2	280.3	279.2	281.0	284.4	282.5	285.7	287.3	283.7
02	Processed foods and feeds	251.5	250.8	250.2	250.5	251.7	254.7	254.5	256.0	256.1	'254.3	254.6	255.8	259.7	258.3
02-1	Cereal and bakery products	253.8	253.0	254.2	256.2	257.3	256.8	256.9	258.8	259.1	'260.3	261.9	262.6	263.2	264.6
02-2	Meats, poultry, and fish	257.6	256.9	251.6	249.9	252.3	261.0	260.7	259.1	257.8	'250.2	248.2	245.1	244.3	239.6
02-3	Dairy products	248.9	249.8	250.2	250.8	250.7	250.9	250.7	251.0	250.9	250.4	250.3	250.4	250.5	251.0
02-4	Processed fruits and vegetables	274.5	273.4	272.8	275.7	274.8	274.3	274.9	273.7	275.3	'271.7	277.0	278.2	278.1	280.0
02-5	Sugar and confectionery	269.7	276.3	280.4	280.1	282.1	286.4	283.7	287.4	289.9	296.0	296.4	298.9	300.1	297.7
02-6	Beverages and beverage materials	256.9	257.9	258.4	258.8	260.1	261.3	262.0	263.0	263.6	'263.0	263.0	263.4	264.5	265.1
02-7	Fats and oils	215.1	213.8	207.2	203.0	201.7	205.3	206.0	214.6	220.0	'219.3	222.7	245.7	303.7	287.4
02-8	Miscellaneous processed foods	248.6	247.9	247.8	248.6	248.8	249.3	248.5	249.9	249.9	'251.5	253.9	251.8	257.5	259.7
02-9	Prepared animal feeds	211.3	199.8	206.0	210.1	211.6	212.3	212.4	222.8	221.3	'217.1	219.9	232.6	247.2	247.7
	INDUSTRIAL COMMODITIES														
03	Textile products and apparel	204.6	204.1	203.9	202.6	202.7	202.6	203.4	203.5	204.3	'204.7	205.1	205.7	205.8	206.4
03-1	Synthetic fibers (12/75 = 100)	162.1	161.1	161.2	159.7	156.7	153.1	153.9	153.8	155.6	'155.9	159.1	158.4	158.6	160.4
03-2	Processed yarns and threads (12/75 = 100)	138.3	136.5	136.7	136.7	134.7	135.0	135.8	136.0	137.4	137.6	138.5	140.2	140.5	140.7
03-3	Gray fabrics (12/75 = 100)	145.3	143.7	143.1	143.3	144.4	144.3	145.1	145.8	146.2	145.8	146.0	146.6	147.1	148.9
03-4	Finished fabrics (12/75 = 100)	124.6	123.2	123.0	122.8	122.2	122.3	122.4	123.1	122.8	122.5	122.4	123.5	123.3	123.8
03-81	Apparel	194.4	195.7	195.4	193.0	194.4	195.0	196.1	195.8	196.5	'197.9	197.1	197.3	197.4	197.3
03-82	Textile housefurnishings	238.5	236.2	236.2	236.2	236.5	234.3	234.2	234.2	237.6	'235.2	238.9	238.5	238.6	238.5
04	Hides, skins, leather, and related products	262.6	263.2	263.2	264.1	266.7	264.3	264.9	267.4	269.4	'271.2	272.7	275.5	275.3	274.7
04-2	Leather	311.4	309.5	312.8	314.4	314.4	312.8	316.2	320.5	326.6	'335.9	333.3	345.7	341.8	337.1
04-3	Footwear	245.0	248.0	249.1	247.7	251.5	247.7	248.1	250.0	248.7	'249.9	249.9	250.1	250.9	251.2
04-4	Other leather and related products	247.4	247.2	247.1	249.1	250.8	251.0	250.9	251.0	251.7	'251.7	257.4	257.6	257.0	256.9
05	Fuels and related products and power	693.2	698.8	706.1	703.4	683.6	668.6	658.0	644.8	651.9	'665.5	671.6	674.3	675.7	672.7
05-1	Coal	534.7	538.1	539.6	538.7	535.6	533.4	538.6	538.0	535.2	'534.1	535.5	534.0	536.1	536.7
05-2	Coke	461.7	452.3	452.3	452.3	450.9	450.9	447.3	447.3	438.4	'438.4	438.4	434.6	453.9	453.5
05-3	Gas fuels ³	1,060.8	1,130.1	1,190.0	1,181.2	1,147.3	1,154.7	1,180.0	1,156.1	1,156.7	'1,155.1	1,151.2	1,148.2	1,149.3	1,130.7
05-4	Electric power	406.5	408.7	404.9	409.9	410.8	410.8	411.4	409.2	412.2	'419.4	425.1	425.9	428.2	423.9
05-61	Crude petroleum ⁴	733.4	735.3	733.6	720.0	719.7	692.9	678.0	678.0	678.0	'677.9	676.1	675.5	676.1	676.1
05-7	Petroleum products, refined ⁵	761.2	754.6	758.0	754.2	720.6	692.8	666.6	645.9	659.3	'684.2	694.9	701.1	701.8	702.4
06	Chemicals and allied products	292.3	289.9	290.5	289.6	289.3	290.5	289.8	291.3	291.1	'290.8	291.3	294.9	294.8	296.4
06-1	Industrial chemicals ⁶	352.6	345.8	345.2	342.4	339.3	340.1	338.8	338.7	338.8	'338.5	338.8	348.5	346.3	348.6
06-21	Prepared paint	262.8	264.7	264.7	264.7	264.7	264.7	264.7	264.7	264.7	'264.7	265.6	265.7	264.5	264.1
06-22	Paint materials	304.6	303.0	302.4	301.7	301.5	299.5	298.4	299.8	300.2	'299.5	300.4	305.5	316.0	316.6
06-3	Drugs and pharmaceuticals	210.1	214.9	215.5	216.0	218.6	222.2	222.9	225.1	225.2	'225.2	227.5	227.8	228.0	229.7
06-4	Fats and oils, inedible	267.1	242.3	239.6	240.8	242.0	253.4	262.2	278.3	287.1	'276.9	263.6	277.8	305.5	319.5
06-5	Agricultural chemicals and chemical products	292.4	288.8	286.5	285.2	283.2	283.3	284.2	282.8	282.4	'280.6	278.6	277.6	276.0	276.8
06-6	Plastic resins and materials	283.4	281.3	282.2	282.5	283.8	283.1	282.1	285.4	288.0	289.1	290.6	294.1	293.1	297.5
06-7	Other chemicals and allied products	270.1	268.6	272.3	272.0	272.8	274.4	272.0	274.7	272.0	'272.4	273.6	274.4	274.5	273.9
07	Rubber plastic products	241.4	242.2	241.7	242.2	242.9	242.3	241.8	243.0	243.2	'243.1	244.4	244.6	244.5	245.1
07-1	Rubber and rubber products	267.8	268.9	267.9	268.2	269.6	268.3	267.1	267.0	267.0	'265.6	267.6	267.2	266.8	267.1
07-11	Crude rubber	278.9	272.5	270.9	271.1	271.1	274.3	281.2	281.3	280.6	'280.2	283.1	284.4	284.3	284.3
07-12	Tires and tubes	255.2	255.7	254.5	256.0	259.1	250.5	246.6	246.5	246.3	'243.7	242.7	242.4	242.5	242.7
07-13	Miscellaneous rubber products	276.9	281.4	280.7	279.7	284.5	289.6	285.8	285.7	286.0	'285.9	291.5	290.6	289.3	289.9
07-2	Plastic products (6/78 = 100)	132.3	132.7	132.7	133.0	133.0	133.1	133.2	134.6	134.8	'135.5	135.9	136.3	136.4	137.0
08	Lumber and wood products	284.7	279.4	279.9	285.6	293.3	303.1	305.8	307.2	308.0	'314.8	314.5	313.9	306.0	306.1
08-1	Lumber	310.8	305.6	305.1	312.6	326.8	344.7	349.3	354.2	358.6	'372.8	372.5	366.6	348.2	345.8
08-2	Millwork	279.4	278.6	280.3	286.5	293.7	300.5	304.0	302.8	299.0	'294.9	296.1	307.7	305.7	307.1
08-3	Plywood	232.1	224.0	227.8	231.2	235.3	239.5	238.9	239.4	241.1	'255.5	252.5	244.8	242.4	246.5
08-4	Other wood products	236.2	235.8	233.0	231.2	232.0	233.2	231.6	230.8	231.1	229.6	229.7	229.3	229.6	229.6

See footnotes at end of table.

24. Continued—Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1982	1982			1983									
			Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June ¹	July	Aug.	Sept.	Oct.
INDUSTRIAL COMMODITIES—Continued															
09	Pulp, paper, and allied products	288.7	289.8	289.8	290.5	293.6	294.2	294.8	295.4	296.0	297.0	297.7	298.0	299.1	300.4
09-1	Pulp, paper, and products, excluding building paper and board	273.2	270.3	269.4	268.8	269.8	268.7	268.7	268.5	268.7	269.2	269.9	270.1	271.7	273.0
09-11	Woodpulp	379.0	350.4	347.3	347.2	346.6	345.7	343.0	342.5	343.2	344.9	347.5	348.2	348.4	348.6
09-12	Wastepaper	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)
09-13	Paper	286.3	285.4	280.6	279.2	279.3	278.8	278.4	278.5	279.0	279.5	281.7	281.0	285.3	286.6
09-14	Paperboard	254.9	248.0	247.6	244.1	243.3	244.1	246.3	248.1	248.7	249.4	249.5	250.4	252.8	255.5
09-15	Converted paper and paperboard products	264.4	264.0	264.7	264.8	265.0	265.1	265.1	264.2	264.1	264.5	264.5	265.0	265.3	266.5
09-2	Building paper and board	239.5	242.1	241.0	242.0	241.1	241.4	244.2	247.0	249.3	255.7	256.2	252.1	252.8	254.7
10	Metals and metal products	301.6	301.6	300.5	299.9	300.3	304.7	304.4	304.6	306.1	306.3	307.4	308.5	310.9	310.7
10-1	Iron and steel	339.0	337.6	335.9	332.8	333.3	339.9	341.6	341.5	340.9	341.3	341.3	342.8	347.6	348.2
10-17	Steel mill products	349.5	349.8	348.6	344.7	343.7	351.1	349.8	349.7	349.8	350.1	349.9	351.4	357.7	358.1
10-2	Nonferrous metals	263.6	262.9	261.7	263.2	267.0	275.8	270.6	271.8	277.7	275.7	277.6	279.6	282.1	279.8
10-3	Metal containers	328.5	329.7	329.0	328.3	327.9	331.1	331.4	331.9	337.1	337.4	337.4	338.0	338.3	338.3
10-4	Hardware	280.3	283.0	283.1	285.8	287.2	287.9	288.2	288.6	288.5	289.7	289.7	289.8	289.8	290.0
10-5	Plumbing fixtures and brass fittings	278.7	277.8	278.3	279.2	280.6	283.5	285.6	287.7	289.1	290.8	292.1	291.9	291.5	292.7
10-6	Heating equipment	237.2	238.4	238.8	239.3	240.7	240.7	241.1	242.3	242.7	243.0	249.0	244.8	244.7	245.0
10-7	Fabricated structural metal products	304.8	305.9	305.3	304.7	303.6	302.8	303.7	302.5	302.1	302.0	302.2	302.8	303.8	304.4
10-8	Miscellaneous metal products	282.3	284.1	283.4	283.2	279.1	279.0	280.4	280.7	280.8	283.4	287.4	287.6	287.7	288.2
11	Machinery and equipment	278.8	281.1	281.8	282.4	283.3	284.3	284.7	285.4	286.0	286.2	286.9	287.1	287.5	287.8
11-1	Agricultural machinery and equipment	311.1	317.5	318.7	320.7	322.4	323.3	323.5	323.9	326.4	326.4	326.2	327.1	328.0	327.9
11-2	Construction machinery and equipment	343.9	347.6	347.9	348.1	348.3	349.3	349.6	350.9	352.3	352.5	352.7	352.8	353.4	353.5
11-3	Metalworking machinery and equipment	320.9	323.1	323.5	323.6	324.1	325.2	325.5	326.2	326.7	327.0	326.5	326.1	326.3	326.5
11-4	General purpose machinery and equipment	304.0	305.9	306.4	307.0	307.4	307.9	307.5	308.2	308.4	308.4	308.4	308.2	308.1	308.3
11-6	Special industry machinery and equipment	325.1	327.8	329.1	329.9	331.8	332.6	333.6	334.5	335.8	336.7	337.8	338.9	339.7	340.5
11-7	Electrical machinery and equipment	231.6	232.6	233.7	234.2	235.2	237.2	237.5	238.4	238.5	238.8	240.8	241.2	242.1	242.5
11-9	Miscellaneous machinery	268.4	271.6	272.0	272.3	272.9	272.7	273.7	274.2	275.3	275.0	274.9	275.0	274.5	274.9
12	Furniture and household durables	206.9	208.9	208.9	209.2	210.7	212.5	212.3	212.8	213.6	214.0	214.4	214.5	214.9	215.1
12-1	Household furniture	229.8	231.2	231.4	232.0	231.9	232.6	231.1	231.8	234.4	235.0	235.3	235.4	236.3	237.1
12-2	Commercial furniture	275.5	278.3	278.6	278.5	281.1	282.2	285.1	286.2	285.9	286.9	287.9	287.2	287.7	287.9
12-3	Floor coverings	181.2	181.6	181.3	181.5	182.2	182.1	182.0	182.2	182.1	181.4	185.1	188.1	188.2	188.1
12-4	Household appliances	199.1	201.3	201.2	201.8	203.9	204.9	205.0	206.3	207.5	207.5	207.4	207.3	207.6	207.6
12-5	Home electronic equipment	88.1	87.8	87.0	87.1	87.3	87.0	87.0	86.6	86.4	86.5	86.1	86.0	85.8	85.8
12-6	Other household durable goods	289.3	296.5	297.2	298.1	302.8	314.8	312.9	312.0	312.7	314.3	313.5	312.3	313.0	313.1
13	Nonmetallic mineral products	320.2	321.1	321.2	320.5	321.5	322.3	322.0	324.1	324.1	324.5	325.4	326.2	327.2	327.9
13-11	Flat glass	221.5	221.1	225.3	225.3	229.7	229.7	229.7	229.7	229.7	229.7	229.8	229.8	229.6	229.5
13-2	Concrete ingredients	310.0	309.9	310.0	306.7	307.2	310.0	308.5	312.8	313.7	314.2	315.4	317.2	318.9	318.8
13-3	Concrete products	297.8	298.6	298.2	298.5	299.4	300.1	300.4	301.0	301.1	301.6	302.2	302.3	302.8	303.3
13-4	Structural clay products, excluding refractories	260.8	264.0	264.8	264.8	264.9	264.3	270.7	275.7	277.6	281.5	281.7	281.7	281.7	282.8
13-5	Refractories	337.1	340.8	337.2	337.2	337.7	337.7	337.7	338.2	338.2	336.8	338.7	339.9	340.7	345.6
13-6	Asphalt roofing	298.4	406.7	399.0	397.0	393.7	380.4	374.7	384.0	380.0	379.6	383.9	381.9	385.7	385.0
13-7	Gypsum products	256.1	255.1	255.0	253.9	263.1	267.4	265.9	271.9	275.7	273.8	276.0	289.2	295.7	304.3
13-8	Glass containers	355.5	358.5	357.8	357.6	356.6	355.8	354.1	353.5	351.8	351.8	351.7	351.3	351.2	351.1
13-9	Other nonmetallic minerals	471.8	470.4	471.3	471.0	471.5	476.1	476.4	478.7	478.5	479.5	480.8	481.5	482.4	482.7
14	Transportation equipment (12/68 = 100)	249.7	256.0	256.3	257.5	256.3	255.8	255.2	255.6	255.8	256.1	256.4	257.0	250.3	261.2
14-1	Motor vehicles and equipment	251.3	257.8	257.8	258.1	257.0	256.3	255.4	255.9	256.2	256.7	256.7	256.9	248.9	261.1
14-4	Railroad equipment	346.5	350.8	350.8	350.8	350.8	350.5	350.3	350.0	350.4	350.1	358.1	357.8	357.5	355.4
15	Miscellaneous products	276.4	285.4	285.2	290.4	285.7	288.8	287.4	287.4	287.1	288.0	291.7	291.5	291.3	291.2
15-1	Toys, sporting goods, small arms, ammunition	221.5	221.2	221.3	223.7	222.7	225.3	225.7	226.3	226.0	225.9	224.8	225.0	225.3	225.3
15-2	Tobacco products	323.1	365.4	364.5	382.9	356.2	356.4	353.8	354.1	353.8	352.1	373.5	373.3	376.5	376.7
15-3	Notions	277.0	280.1	279.8	279.8	280.5	280.6	280.6	280.3	280.3	280.3	280.3	279.7	79.7	279.7
15-4	Photographic equipment and supplies	210.4	209.7	209.7	210.0	210.0	211.8	216.6	216.6	216.6	216.5	216.8	216.9	216.9	217.1
15-5	Mobile homes (12/74 = 100)	161.9	162.6	161.6	161.7	161.8	161.7	162.9	162.3	162.4	163.1	163.4	163.5	164.0	164.2
15-9	Other miscellaneous products	338.3	345.2	345.1	351.6	350.8	359.8	350.5	350.3	349.2	353.4	353.5	352.3	349.0	347.9

¹Data for June 1983 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

²Not available.

³Prices for natural gas are lagged 1 month.

⁴Includes only domestic production.

⁵Most prices for refined petroleum products are lagged 1 month.

⁶Some prices for industrial chemicals are lagged 1 month.

r = revised.

25. Producer Price Indexes, for special commodity groupings

[1967 = 100 unless otherwise specified]

Commodity grouping	Annual average 1982	1982			1983									
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June ¹	July	Aug.	Sept.	Oct.
All commodities—less farm products	303.0	304.7	305.1	305.4	304.4	304.9	304.5	303.8	304.8	306.0	307.1	308.2	308.4	309.5
All foods	254.4	252.8	251.9	252.7	252.4	255.7	255.8	258.2	258.2	256.6	256.4	257.5	261.0	261.1
Processed foods	256.0	256.2	254.7	254.7	255.8	259.3	258.9	259.5	259.6	257.9	258.0	258.1	261.3	259.3
Industrial commodities less fuels	272.8	274.4	274.4	274.9	275.4	277.0	276.9	277.6	278.2	278.7	279.5	280.4	279.8	281.8
Selected textile mill products (Dec. 1975 = 100)	138.2	137.4	137.1	136.8	136.7	136.8	137.2	137.4	137.7	137.4	137.7	138.8	138.7	139.2
Hosiery	138.3	138.7	139.7	139.7	141.7	144.5	144.5	144.5	144.5	144.5	144.5	145.6	145.6	145.6
Underwear and nightwear	217.6	220.1	219.7	219.7	223.3	222.6	223.8	223.4	223.5	222.7	223.2	223.5	224.4	224.2
Chemicals and allied products, including synthetic rubber and fibers and yarns	283.8	281.8	282.3	281.4	280.8	281.4	280.7	281.8	281.6	281.5	282.5	285.5	285.0	286.4
Pharmaceutical preparations	206.0	211.7	212.3	212.8	215.8	219.4	220.3	223.3	223.5	223.6	226.0	226.6	227.2	229.5
Lumber and wood products, excluding millwork	288.8	282.5	283.4	289.6	300.7	314.3	317.2	320.8	324.3	338.8	337.6	331.0	317.6	317.4
Steel mill products, including fabricated wire products	349.4	349.1	348.5	344.8	343.1	349.9	348.4	348.4	348.5	348.7	348.4	349.8	355.4	355.8
Finished steel mill products, excluding fabricated wire products	348.4	348.6	348.0	344.0	342.1	349.8	348.3	348.4	348.5	348.8	348.5	350.1	356.7	357.2
Finished steel mill products, including fabricated wire products	348.1	347.8	347.2	343.3	341.6	348.5	347.0	347.0	347.1	347.4	347.0	348.4	354.4	354.8
Special metals and metal products	286.6	289.5	288.9	288.7	288.6	290.9	290.3	290.7	291.7	292.0	292.7	293.5	291.5	296.5
Fabricated metal products	291.6	293.0	292.5	292.5	291.1	291.3	292.3	292.2	292.6	294.0	295.5	295.9	296.2	296.7
Copper and copper products	185.5	178.8	181.2	181.8	190.7	201.5	198.9	200.9	206.7	201.3	202.2	201.2	198.0	190.5
Machinery and motive products	272.1	276.4	277.0	277.9	277.8	278.2	278.1	278.7	279.2	279.3	279.9	280.3	277.5	282.6
Machinery and equipment, except electrical	306.4	309.4	310.0	310.6	311.3	311.9	312.2	312.9	313.8	313.9	313.9	314.1	314.2	314.5
Agricultural machinery, including tractors	323.1	330.6	332.2	335.1	337.0	337.7	337.8	338.2	341.7	341.8	341.4	342.4	343.5	343.2
Metalworking machinery	350.4	354.1	354.2	354.1	354.6	355.7	355.6	356.3	358.0	357.8	357.7	357.6	357.3	357.2
Total tractors	355.0	361.4	361.4	364.2	365.6	365.6	365.7	366.1	370.5	370.6	370.7	369.9	372.5	372.6
Agricultural machinery and equipment less parts	313.8	320.1	321.5	324.3	325.9	326.6	326.8	327.1	330.1	330.2	329.8	330.9	332.0	331.9
Farm and garden tractors less parts	327.8	336.1	336.1	340.3	342.2	342.2	342.2	342.2	348.8	348.8	348.8	347.6	350.6	350.7
Agricultural machinery, excluding tractors less parts	319.6	326.4	329.3	331.1	333.1	334.4	334.5	335.2	336.2	336.4	335.6	338.4	337.9	337.3
Construction materials	288.0	288.0	287.8	287.9	290.3	294.6	295.0	296.1	296.8	298.6	299.1	299.8	299.8	300.4

¹Data for June 1983 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication. r = revised.

26. Producer Price Indexes, by durability of product

[1967 = 100]

Commodity grouping	Annual average 1982	1982			1983									
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June ¹	July	Aug.	Sept.	Oct.
Total durable goods	279.0	281.2	281.2	282.0	282.6	284.8	284.6	285.3	286.0	286.7	287.3	287.8	286.7	289.2
Total nondurable goods	315.3	314.3	315.3	315.3	313.3	313.4	313.0	312.4	313.5	314.5	315.5	318.2	319.9	319.5
Total manufactures	292.7	293.8	293.9	294.3	293.5	293.9	293.2	292.7	293.7	295.0	296.1	297.1	297.3	298.8
Durable	279.8	282.3	282.4	283.2	283.7	285.7	285.3	286.0	286.7	287.3	287.9	288.3	287.1	289.7
Nondurable	306.4	306.0	306.1	305.9	303.8	302.5	301.4	299.7	301.0	303.1	304.7	306.4	308.1	308.3
Total raw or slightly processed goods	331.2	327.9	330.9	331.6	330.4	335.2	337.3	340.4	340.9	339.0	338.3	343.7	346.0	343.6
Durable	233.8	224.2	219.2	217.4	224.2	235.4	243.3	244.1	246.1	249.4	250.7	257.6	261.5	260.6
Nondurable	337.3	334.5	338.1	339.0	337.2	341.5	343.2	346.5	346.8	344.6	343.7	348.9	351.1	348.6

¹Data for June 1983 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication. r = revised.

27. Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1982	1982			1983										
			Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June ¹	July	Aug.	Sept.	Oct.	
MINING																
1011	Iron ores (12/75 = 100)	175.2	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1
1092	Mercury ores (12/75 = 100)	312.2	312.5	308.3	312.5	306.2	289.5	285.4	272.9	268.7	254.1	237.5	231.2	243.3	283.3	
1311	Crude petroleum and natural gas	925.8	945.9	969.0	958.4	945.2	931.2	934.4	922.1	921.8	924.2	917.4	916.6	920.8	908.0	
1455	Kaolin and ball clay (6/76 = 100)	151.2	151.7	151.7	151.7	153.6	156.3	158.4	164.3	164.3	164.3	164.3	164.3	164.3	164.3	171.7
MANUFACTURING																
2021	Creamery butter	276.0	276.8	276.5	277.8	275.5	275.6	275.6	275.6	275.6	275.6	275.6	276.1	278.4	278.1	
2044	Rice milling	185.1	183.0	175.2	196.1	191.3	183.0	183.0	188.9	191.3	194.5	193.7	198.1	201.1	196.7	
2067	Chewing gum	304.1	304.8	306.0	306.1	326.0	326.0	326.1	326.1	326.1	327.2	327.2	327.3	327.3	327.3	
2074	Cottonseed oil mills	168.3	157.6	164.1	169.4	157.5	173.4	167.1	186.8	186.2	179.2	192.4	220.6	265.6	256.5	
2083	Malt	256.9	251.2	240.6	240.6	232.6	232.6	232.6	232.6	232.6	232.6	232.6	232.6	232.6	232.6	
2091	Canned and cured seafoods (12/73 = 100)	187.0	186.3	186.4	186.6	182.8	179.2	177.9	177.7	175.7	173.4	173.7	169.4	169.8	170.2	
2098	Macaroni and spaghetti	258.5	255.5	255.5	255.5	255.5	255.5	255.5	255.5	255.5	255.5	255.5	255.5	255.5	258.6	
2251	Women's hosiery, except socks (12/75 = 100)	116.8	116.9	118.5	118.3	118.5	122.6	122.7	122.7	122.7	122.7	122.9	123.0	123.0	123.0	
2261	Finishing plants, cotton (6/76 = 100)	139.5	136.8	136.2	136.1	135.3	136.0	136.1	139.8	138.0	132.9	132.6	133.8	133.5	134.2	
2262	Finishing plants, synthetics, silk (6/76 = 100)	128.2	127.5	127.8	127.3	125.7	126.2	127.2	126.9	126.9	125.1	125.1	127.2	125.8	127.2	
2284	Thread mills (6/76 = 100)	157.2	157.9	157.9	157.8	157.9	161.9	165.6	165.7	165.7	165.7	165.7	165.7	166.1	166.1	
2298	Cordage and twine (12/77 = 100)	141.5	142.6	142.6	142.6	142.6	142.7	142.8	137.6	137.6	137.6	137.6	137.6	139.0	139.0	
2323	Men's and boys' neckwear (12/75 = 100)	119.5	121.3	121.3	121.3	121.3	121.3	121.3	121.3	121.3	121.3	121.3	121.3	123.5	123.5	
2361	Children's dresses and blouses (12/77 = 100)	120.6	118.6	117.0	117.0	117.0	117.0	115.5	115.5	115.5	117.0	117.0	117.0	117.0	117.0	
2381	Fabric dress and work gloves	292.1	287.4	287.4	287.4	288.8	288.8	288.8	291.0	291.7	291.7	296.3	296.3	296.3	296.3	
2394	Canvas and related products (12/77 = 100)	145.4	147.3	147.3	147.3	148.7	148.7	146.2	146.2	146.2	146.2	146.8	146.8	146.8	148.5	
2396	Automotive and apparel trimmings (12/77 = 100)	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	
2448	Wood pallets and skids (12/75 = 100)	145.6	144.3	144.2	144.6	144.6	145.2	145.7	146.9	148.5	149.5	150.8	151.2	150.9	151.4	
2521	Wood office furniture	270.3	271.4	271.4	271.4	271.4	273.4	279.6	282.5	282.5	282.5	284.7	284.7	284.7	284.7	
2654	Sanitary food containers	259.7	261.7	261.7	261.7	261.7	261.7	265.1	265.2	265.2	265.2	268.6	268.7	269.3	270.6	
2655	Fiber cans, drums, and similar products (12/75 = 100)	177.8	177.9	180.7	183.8	183.8	183.8	183.8	185.6	185.6	185.9	187.7	187.7	187.7	187.8	
2911	Petroleum refining (6/76 = 100)	278.3	278.3	280.1	278.3	267.2	257.4	250.4	240.6	246.0	254.0	256.3	258.1	257.8	258.0	
2952	Asphalt felts and coating (12/75 = 100)	173.5	177.2	173.7	172.9	171.4	165.8	163.2	166.9	165.1	164.9	166.8	165.8	167.4	167.1	
3251	Brick and structural clay tile	307.4	314.0	315.5	315.5	315.7	315.6	328.3	332.2	333.8	334.6	337.5	337.5	337.5	339.5	
3253	Ceramic wall and floor tile (12/75 = 100)	140.6	140.7	140.7	140.7	140.7	140.7	140.7	142.4	142.4	149.6	146.8	146.8	146.8	146.8	
3255	Clay refractories	352.8	357.0	350.3	350.3	351.1	351.1	351.2	352.2	352.2	349.4	353.0	355.3	356.8	366.0	
3259	Structural clay products, n.e.c.	219.7	219.0	218.9	219.0	219.0	215.7	215.7	232.7	234.7	234.7	235.4	235.4	235.5	235.7	
3261	Vitreous plumbing fixtures	265.0	269.1	270.3	269.7	272.1	273.3	275.1	275.3	276.1	276.9	277.2	277.2	281.3	283.7	
3262	Vitreous china food utensils	357.8	360.8	370.2	377.7	380.1	380.1	380.1	380.1	380.1	369.2	369.2	369.2	369.2	369.2	
3263	Fine earthenware food utensils	318.2	323.5	324.8	326.0	365.7	365.7	365.7	365.7	365.9	366.5	364.3	364.3	364.3	364.3	
3269	Pottery products, n.e.c. (12/75 = 100)	167.3	169.6	171.9	173.7	186.5	186.6	186.6	186.6	186.6	186.6	183.8	183.8	183.8	183.8	
3274	Lime (12/75 = 100)	186.3	187.7	187.5	185.7	187.3	185.5	185.1	187.8	185.2	186.2	187.3	187.9	186.6	186.2	
3297	Nonclay refractories (12/74 = 100)	201.8	203.8	203.7	203.6	203.7	203.6	203.6	203.8	203.6	203.6	203.8	203.8	203.8	204.0	
3482	Small arms ammunition (12/75 = 100)	164.2	150.1	150.6	174.1	175.1	175.1	181.6	181.6	181.6	181.6	187.6	187.6	187.6	187.6	
3623	Welding apparatus, electric (12/72 = 100)	239.6	243.0	243.3	243.3	243.6	244.0	243.4	243.3	243.1	242.3	238.4	238.4	238.5	238.7	
3636	Sewing machines (12/75 = 100)	154.6	154.2	154.2	154.2	154.2	154.4	155.0	156.8	156.8	156.8	156.1	156.1	156.1	156.1	
3641	Electric lamps	294.0	302.9	303.0	303.4	306.0	311.5	311.4	313.8	313.8	316.7	319.4	319.8	332.4	332.7	
3648	Lighting equipment, n.e.c. (12/75 = 100)	170.0	171.3	171.3	171.4	171.4	171.5	171.6	172.6	172.6	173.1	173.4	173.4	173.6	173.7	
3671	Electron tubes, receiving type	382.1	380.3	414.0	414.1	431.6	432.0	431.9	432.1	432.1	432.1	432.4	432.4	432.6	432.9	
3942	Dolls (12/75 = 100)	136.7	136.8	136.8	136.5	137.1	136.8	136.8	137.7	137.7	137.7	137.3	137.3	137.3	137.3	
3944	Games, toys, and children's vehicles	234.0	235.3	235.3	235.5	235.3	243.4	241.8	242.2	242.2	242.2	231.9	231.9	232.1	232.1	
3955	Carbon paper and inked ribbons (12/75 = 100)	140.0	139.3	139.2	139.4	139.2	139.2	139.2	139.2	139.2	139.2	139.2	139.2	139.2	139.3	
3995	Burial caskets (6/76 = 100)	148.4	150.8	150.8	150.8	147.0	152.1	152.1	152.1	152.1	152.1	155.4	155.4	155.4	156.0	
3996	Hard surface floor coverings (12/75 = 100)	155.9	158.9	158.9	156.8	159.2	159.2	159.2	159.7	159.6	159.6	162.0	163.4	163.5	163.5	

¹Data for June 1983 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication. r = revised.

PRODUCTIVITY DATA

PRODUCTIVITY DATA are compiled by the Bureau of Labor Statistics from establishment data and from estimates of compensation and output supplied by the U.S. Department of Commerce and the Federal Reserve Board.

Definitions

Output is the constant dollar gross domestic product produced in a given period. Indexes of **output per hour of labor input**, or labor productivity, measure the value of goods and services produced per hour of labor. **Compensation per hour** includes wages and salaries of employees plus employers' contributions for social insurance and private benefit plans. The data also include an estimate of wages, salaries, and supplementary payments for the self-employed, except for nonfinancial corporations, in which there are no self-employed. **Real compensation per hour** is compensation per hour adjusted by the Consumer Price Index for All Urban Consumers.

Unit labor cost measures the labor compensation cost required to produce one unit of output and is derived by dividing compensation by output. **Unit nonlabor payments** include profits, depreciation, interest, and indirect taxes per unit of output. They are computed by subtracting compensation of all persons from the current dollar gross domestic product and dividing by output. In these tables, **unit nonlabor costs** contain all

the components of unit nonlabor payments except unit profits. **Unit profits** include corporate profits and inventory valuation adjustments per unit of output.

The **implicit price deflator** is derived by dividing the current dollar estimate of gross product by the constant dollar estimate, making the deflator, in effect, a price index for gross product of the sector reported.

Hours of all persons describes the labor input of payroll workers, self-employed persons, and unpaid family workers. **Output per all employee hour** describes labor productivity in nonfinancial corporations where there are no self-employed.

Notes on the data

In the business sector and the nonfarm business sector, the basis for the output measure employed in the computation of output per hour is Gross Domestic Product rather than Gross National Product. Computation of hours includes estimates of nonfarm and farm proprietor hours.

Output data are supplied by the Bureau of Economic Analysis, U.S. Department of Commerce, and the Federal Reserve Board. Quarterly manufacturing output indexes are adjusted by the Bureau of Labor Statistics to annual estimates of output (gross product originating) from the Bureau of Economic Analysis. Compensation and hours data are from the Bureau of Economic Analysis and the Bureau of Labor Statistics.

28. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years, 1950-82

[1977 = 100]

Item	1950	1955	1960	1965	1970	1975	1976	1977	1978	1979	1980	1981	1982
Business sector:													
Output per hour of all persons	50.4	58.3	65.2	78.3	86.2	94.5	97.6	100.0	100.6	99.4	98.9	101.3	101.2
Compensation per hour	20.0	26.4	33.9	41.7	58.2	85.5	92.9	100.0	108.6	118.7	131.2	143.9	155.1
Real compensation per hour	50.5	59.6	69.5	80.1	90.8	96.3	98.9	100.0	100.9	99.1	96.5	95.9	97.4
Unit labor costs	39.8	45.2	52.1	53.3	67.5	90.5	95.1	100.0	108.0	119.5	132.7	142.1	153.3
Unit nonlabor payments	43.4	47.6	50.6	57.6	63.2	90.4	94.0	100.0	106.7	112.8	119.0	136.2	136.9
Implicit price deflator	41.0	46.0	51.6	54.7	66.0	90.4	94.7	100.0	107.5	117.2	128.1	140.1	147.7
Nonfarm business sector:													
Output per hour of all persons	56.3	62.7	68.3	80.5	86.8	94.7	97.8	100.0	100.6	99.1	98.4	100.3	100.2
Compensation per hour	21.8	28.3	35.7	42.8	58.7	86.0	93.0	100.0	108.6	118.4	130.7	143.5	154.7
Real compensation per hour	55.0	64.0	73.0	82.2	91.5	96.8	99.0	100.0	100.9	98.9	96.1	95.6	97.1
Unit labor costs	38.8	45.1	52.3	53.2	67.6	90.8	95.1	100.0	108.0	119.5	132.8	143.0	154.4
Unit nonlabor payments	42.7	47.8	50.4	58.0	63.8	88.5	93.5	100.0	105.3	110.4	118.5	135.0	137.0
Implicit price deflator	40.1	46.0	51.6	54.8	66.3	90.0	94.6	100.0	107.1	116.5	128.1	140.4	148.6
Nonfinance corporations:													
Output per hour of all persons	(1)	(1)	68.0	81.9	87.4	95.5	98.2	100.0	100.9	100.7	99.8	102.3	102.8
Compensation per hour	(1)	(1)	37.0	43.9	59.4	86.1	92.9	100.0	108.5	118.7	130.9	143.6	154.8
Real compensation per hour	(1)	(1)	75.8	84.3	92.7	96.9	98.9	100.0	100.7	99.1	96.3	95.7	97.2
Unit labor costs	(1)	(1)	54.4	53.5	68.0	90.2	94.6	100.0	107.5	117.8	131.2	140.3	150.6
Unit nonlabor payments	(1)	(1)	54.6	60.8	63.1	90.8	95.0	100.0	104.2	106.9	117.4	134.4	137.6
Implicit price deflator	(1)	(1)	54.5	56.1	66.3	90.4	94.7	100.0	106.4	114.1	126.4	138.3	146.1
Manufacturing:													
Output per hour of all persons	¹ 49.9	¹ 56.8	¹ 60.3	¹ 74.7	79.1	¹ 93.3	97.5	100.0	100.8	101.5	101.7	105.3	106.5
Compensation per hour	21.5	28.8	36.7	42.8	57.6	85.4	92.3	100.0	108.3	118.8	132.7	145.8	158.2
Real compensation per hour	54.0	65.1	75.1	82.3	89.8	96.2	98.3	100.0	100.6	99.2	97.6	97.2	99.3
Unit labor costs	¹ 43.0	¹ 50.7	¹ 60.8	¹ 57.4	¹ 72.8	91.5	¹ 94.7	100.0	107.4	117.0	130.5	138.5	148.5
Unit nonlabor payments	¹ 54.9	¹ 59.0	¹ 61.9	¹ 69.1	¹ 65.2	87.3	93.7	100.0	102.5	99.9	97.7	110.2	109.2
Implicit price deflator	46.6	53.2	61.1	61.0	70.5	90.3	94.4	100.0	106.0	112.0	120.9	130.2	137.0

¹ Not available.

r = revised.

29. Annual changes in productivity, hourly compensation, unit costs, and prices, 1972-82

Item	Year											Annual rate of change	
	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1950-82	1972-82
Business sector:													
Output per hour of all persons	3.5	2.6	-2.4	2.2	3.3	2.4	0.6	-1.2	-0.5	2.4	-0.1	2.2	0.9
Compensation per hour	6.5	8.0	9.4	9.6	8.6	7.7	8.6	9.4	10.5	9.7	7.7	6.6	8.9
Real compensation per hour	3.1	1.6	-1.4	0.5	2.6	1.2	0.9	-1.7	-2.6	-0.6	1.5	2.1	0.2
Unit labor costs	2.9	5.3	12.1	7.3	5.1	5.1	8.0	10.7	11.1	7.1	7.9	4.3	7.9
Unit nonlabor payments	4.5	5.9	4.4	15.1	4.0	6.4	6.7	5.8	5.5	14.4	0.5	3.7	6.8
Implicit price deflator	3.4	5.5	9.5	9.8	4.7	5.6	7.5	9.0	9.2	9.4	5.4	4.1	7.6
Nonfarm business sector:													
Output per hour of all persons	3.7	2.4	-2.5	2.0	3.2	2.2	0.6	-1.5	-0.7	1.9	-0.1	1.8	0.8
Compensation per hour	6.7	7.6	9.4	9.6	8.1	7.5	8.6	9.0	10.4	9.8	7.8	6.3	8.8
Real compensation per hour	3.3	1.3	-1.4	0.4	2.2	1.0	0.9	-2.0	-2.8	-0.6	1.6	1.8	0.1
Unit labor costs	2.8	5.0	12.2	7.5	4.8	5.2	8.0	10.7	11.1	7.7	7.9	4.4	8.0
Unit nonlabor payments	3.2	1.3	5.9	16.7	5.7	6.9	5.3	4.8	7.4	13.9	1.4	3.7	6.8
Implicit price deflator	3.0	3.8	10.2	10.3	5.1	5.7	7.1	8.8	10.0	9.6	5.8	4.2	7.6
Nonfinancial corporations:													
Output per hour of all employees	2.9	2.4	-3.7	2.9	2.9	1.8	0.9	-0.2	-0.9	2.5	0.5	(1)	0.9
Compensation per hour	5.7	7.5	9.4	9.6	7.9	7.6	8.5	9.4	10.3	9.7	7.8	(1)	8.8
Real compensation per hour	2.4	1.2	-1.5	0.4	2.0	1.1	0.7	-1.7	-2.8	-0.6	1.6	(1)	0.0
Unit labor costs	2.8	4.9	13.6	6.5	4.9	5.7	7.5	9.6	11.3	7.0	7.3	(1)	7.8
Unit nonlabor payments	2.7	1.5	7.1	20.1	4.6	5.3	4.2	2.6	9.8	14.5	2.4	(1)	7.1
Implicit price deflator	2.8	3.8	11.4	10.9	4.8	5.6	6.4	7.2	10.8	9.4	5.7	(1)	7.6
Manufacturing:													
Output per hour of all persons	4.9	5.4	-2.4	3.1	4.4	2.6	0.9	0.7	0.3	3.5	1.3	2.4	1.9
Compensation per hour	5.4	7.2	10.6	11.9	8.0	8.3	8.3	9.7	11.7	9.9	8.5	6.4	9.4
Real compensation per hour	2.0	1.0	-0.3	2.5	2.1	1.8	0.6	-1.4	-1.6	-0.4	2.2	1.9	0.6
Unit labor costs	0.4	1.7	13.3	8.6	3.4	5.6	7.3	9.0	11.4	6.1	7.1	3.9	7.4
Unit nonlabor payments	0.6	-3.1	-1.3	25.7	7.3	6.7	2.8	-2.1	-1.1	12.8	-0.2	2.2	4.1
Implicit price deflator	0.5	0.3	9.0	13.1	4.6	6.0	6.0	5.7	7.9	7.7	5.2	3.4	6.5

¹Not available.

r = revised.

30. Quarterly indexes of productivity, hourly compensation, unit costs, and prices, seasonally adjusted

[1977 = 100]

Item	Annual average		Quarterly indexes										
			1981				1982				1983		
	1981	1982	I	II	III	IV	I	II	III	IV	I	II	III
Business sector:													
Output per hour of all persons	101.3	101.2	100.5	101.1	102.3	101.2	101.1	100.7	101.1	101.9	102.5	103.8	105.0
Compensation per hour	143.9	155.1	139.7	142.2	145.5	148.2	151.6	153.9	156.5	158.7	160.7	162.1	164.3
Real compensation per hour	95.9	97.4	96.3	96.1	95.6	95.6	97.1	97.4	97.1	98.0	99.4	99.2	99.5
Unit labor costs	142.1	153.3	139.0	140.7	142.3	146.4	149.9	152.9	154.7	155.6	156.9	156.2	156.5
Unit nonlabor payments	136.2	136.9	131.2	133.4	139.9	140.2	137.0	137.0	136.3	137.4	140.8	145.8	148.2
Implicit price deflator	140.1	147.7	136.3	138.2	141.5	144.3	145.5	147.5	148.5	149.4	151.5	152.7	153.7
Nonfarm business sector:													
Output per hour of all persons	100.3	100.2	100.1	100.1	101.1	99.9	100.0	99.9	100.4	100.8	101.7	103.3	104.5
Compensation per hour	143.5	154.7	139.3	141.8	145.1	147.7	151.3	153.5	156.1	158.3	161.0	162.7	164.5
Real compensation per hour	95.6	97.1	96.0	95.8	95.3	95.4	96.9	97.1	96.9	97.8	99.5	99.6	99.5
Unit labor costs	143.0	154.4	139.2	141.6	143.5	147.8	151.3	153.6	155.4	157.1	158.3	157.4	157.3
Unit nonlabor payments	135.0	137.0	130.3	132.2	138.3	139.5	136.4	137.7	136.5	137.2	140.7	145.9	149.3
Implicit price deflator	140.4	148.6	136.2	138.4	141.8	145.0	146.4	148.3	149.1	150.5	152.4	153.6	154.6
Nonfinancial corporations:													
Output per hour of all employees	102.3	102.8	101.8	102.1	103.0	102.2	102.4	102.3	103.2	103.4	104.3	105.9	(1)
Compensation per hour	143.6	154.8	139.5	142.0	145.0	147.8	151.7	153.7	156.1	158.1	160.4	161.6	(1)
Real compensation per hour	95.7	97.2	96.2	95.9	95.2	95.4	97.2	97.2	96.9	97.7	99.2	98.9	(1)
Total unit costs	142.7	153.5	138.4	141.1	143.6	147.7	150.9	153.1	153.8	156.3	156.7	155.3	(1)
Unit labor costs	140.3	150.6	137.0	139.0	140.7	144.6	148.1	150.2	151.1	152.9	153.9	152.5	(1)
Unit nonlabor costs	149.4	161.8	142.3	147.0	151.9	156.6	158.9	161.2	161.3	165.9	164.7	163.1	(1)
Unit profits	104.1	88.9	103.0	100.3	108.6	104.2	90.8	90.3	91.2	83.0	96.1	115.0	(1)
Implicit price deflator	138.3	146.1	134.3	136.4	139.6	142.7	144.0	145.9	146.6	147.9	149.7	150.7	(1)
Manufacturing:													
Output per hour of all persons	105.3	106.5	105.1	105.4	106.1	104.4	105.1	105.3	107.8	108.1	110.2	112.6	115.8
Compensation per hour	145.8	158.2	141.6	144.3	147.0	150.5	155.1	157.1	159.6	161.4	165.5	166.4	167.6
Real compensation per hour	97.2	99.3	97.6	97.5	96.5	97.1	99.4	99.4	99.1	99.7	102.3	101.8	101.4
Unit labor costs	138.5	148.5	134.8	136.9	138.5	144.1	147.6	149.1	148.1	149.3	150.2	147.8	144.7

¹Not available.

31. Percent change from preceding quarter and year in productivity, hourly compensation, unit costs, and prices, seasonally adjusted at annual rate

Item	Quarterly percent change at annual rate						Percent change from same quarter a year ago					
	I 1982 to II 1982	II 1982 to III 1982	III 1982 to IV 1982	IV 1982 to I 1983	I 1983 to II 1983	II 1983 to III 1983	II 1981 to II 1982	III 1981 to III 1982	IV 1981 to IV 1982	I 1982 to I 1983	II 1982 to II 1983	III 1982 to III 1983
Business sector:												
Output per hour of all persons	-1.6	1.7	3.3	2.0	5.4	4.8	-0.4	-1.1	0.7	1.3	3.1	3.9
Compensation per hour	6.4	6.7	5.7	5.4	3.5	5.6	8.2	7.5	7.1	6.1	5.3	5.0
Real compensation per hour	1.1	-1.0	3.7	5.8	-0.7	0.8	1.3	1.6	2.5	2.4	1.9	2.4
Unit labor costs	8.1	5.0	2.3	3.3	-1.8	6.7	8.7	8.7	6.3	4.7	2.2	1.1
Unit nonlabor payments	-0.1	-2.0	3.2	10.5	15.0	2.7	2.7	-2.6	-2.0	2.8	6.5	8.8
Implicit price deflator	5.5	2.7	2.6	5.5	3.3		6.7	4.9	3.5	4.1	3.5	3.5
Nonfarm business sector:												
Output per hour of all persons	-0.4	2.3	1.3	3.7	6.6	5.0	-0.3	-0.6	0.8	1.7	3.4	4.1
Compensation per hour	5.8	7.2	5.8	6.8	4.3	4.5	8.2	7.6	7.2	6.4	6.0	5.3
Real compensation per hour	0.5	-0.6	3.7	7.2	0.1	-0.3	1.3	1.7	2.6	2.7	2.6	2.7
Unit labor costs	6.2	4.7	4.4	3.0	-2.1	-0.5	8.5	8.3	6.3	4.6	2.5	1.2
Unit nonlabor payments	3.7	-3.4	2.0	10.6	15.7	9.2	4.2	-1.3	-1.6	3.1	6.0	9.3
Implicit price deflator	5.4	2.2	3.7	5.3	3.2	2.5	7.1	5.2	3.7	4.1	3.6	3.7
Nonfinancial corporations:												
Output per hour of all employees	-0.5	3.8	0.6	3.4	6.5	(1)	0.1	0.2	1.2	1.8	3.6	(1)
Compensation per hour	5.4	6.4	5.4	6.0	2.9	(1)	8.2	7.6	7.0	5.8	5.2	(1)
Real compensation per hour	0.1	-1.3	3.4	6.4	-1.2	(1)	1.3	1.7	2.4	2.1	1.7	(1)
Total units costs	6.0	1.8	6.7	1.0	-3.5	(1)	8.5	7.1	5.8	3.8	1.4	(1)
Unit labor costs	6.0	2.4	4.8	2.5	-3.4	(1)	8.1	7.4	5.7	3.9	1.5	(1)
Unit nonlabor costs	6.0	0.1	11.9	-2.8	-3.8	(1)	9.7	6.2	6.0	3.7	1.2	(1)
Unit profits	-2.1	3.8	-31.4	79.9	104.7	(1)	-9.9	-16.1	20.3	5.8	27.3	(1)
Implicit price deflator	5.4	1.9	3.6	5.1	2.5	(1)	7.0	5.0	3.6	4.0	3.3	(1)
Manufacturing:												
Output per hour of all persons	0.8	9.6	1.2	8.0	9.0	12.1	-0.1	1.6	3.5	4.8	6.9	7.5
Compensation per hour	5.1	6.5	4.5	10.7	2.1	3.1	8.8	8.6	7.3	6.7	5.9	5.0
Real compensation per hour	-0.2	-1.2	2.5	11.1	-21	-1.6	1.9	2.6	2.7	3.0	2.5	2.4
Unit labor costs	4.3	-2.8	3.3	2.5	-6.4	-8.0	8.9	6.9	3.6	1.8	-0.9	-2.3

¹Not available.

WAGE AND COMPENSATION DATA

DATA FOR THE EMPLOYMENT COST INDEX are reported to the Bureau of Labor Statistics by a sample of 2,000 private nonfarm establishments and 750 State and local government units selected to represent total employment in those sectors. On average, each reporting unit provides wage and compensation information on five well-specified occupations.

Data on negotiated wage and benefit changes are obtained from contracts on file at the Bureau, direct contact with the parties, and secondary sources.

Definitions

The **Employment Cost Index (ECI)** is a quarterly measure of the average change in the cost of employing labor. The rate of total compensation, which comprises wages, salaries, and employer costs for employee benefits, is collected for workers performing specified tasks. Employment in each occupation is held constant over time for all series produced in the ECI, except those by region, bargaining status, and area. As a consequence, only changes in compensation are measured. Industry and occupational employment data from the 1970 Census of Population are used in deriving constant weights for the ECI. While holding total industry and occupational employment fixed, in the estimation of indexes by region, bargaining status, and area, the employment in those measures is allowed to vary over time in accord with changes in the sample. The rate of change (in percent) is available for wages and salaries, as well as for total compensation. Data are collected for the pay period including the 12th day of the survey months of March, June, September, and December. The statistics are neither annualized nor adjusted for seasonal influence.

Wages and salaries consist of earnings before payroll deductions, excluding premium pay for overtime, work on weekends and holidays, and shift differentials. Production bonuses, incentive earnings, commissions, and cost-of-living adjustments are included; nonproduction bonuses are included with other supplemental pay items in the benefits category; and payments-in-kind, free room and board, and tips are excluded. *Benefits* include supplemental pay, insurance, retirement and savings plans, and hours-related and legally required benefits.

Data on negotiated wage changes apply to private nonfarm industry collective bargaining agreements covering 1,000 workers or more. Data on compensation changes apply only to those agreements covering 5,000 workers or more. *First-year* wage or compensation changes refer to average negotiated changes for workers covered by settlements reached in the period

and implemented within the first 12 months after the effective date of the agreement. *Changes over the life of the agreement* refer to all adjustments specified in the contract, expressed as an average annual rate. These measures exclude wage changes that may occur under cost-of-living adjustment clauses, that are triggered by movements in the Consumer Price Index. *Wage-rate changes* are expressed as a percent of straight-time hourly earnings; *compensation changes* are expressed as a percent of total wages and benefits.

Effective wage adjustments reflect all negotiated changes implemented in the reference period, regardless of the settlement date. They include changes from settlements reached during the period, changes deferred from contracts negotiated in an earlier period, and cost-of-living adjustments. The data also reflect contracts providing for no wage adjustment in the period. Effective adjustments and each of their components are prorated over all workers in bargaining units with at least 1,000 workers.

Notes on the data

The Employment Cost Index data series began in the fourth quarter of 1975, with the quarterly percent change in wages and salaries in the private nonfarm sector. Data on employer costs for employee benefits were included in 1980, to produce a measure of the percent change in employers' cost for employees' total compensation. State and local government units were added to the ECI coverage in 1981, providing a measure of total compensation change in the civilian nonfarm economy.

Data for the broad white-collar, blue-collar, and service worker groups, and the manufacturing, nonmanufacturing, and service industry groups are presented in the ECI. Additional occupation and industry detail are provided for the wages and salaries component of total compensation in the private nonfarm sector. For State and local government units, additional industry detail is shown for both total compensation and its wages and salaries component.

Historical indexes (June 1981 = 100) of the quarterly rates of changes presented in the ECI are also available.

For a more detailed discussion of the ECI, see chapter 11, "The Employment Cost Index," of the BLS *Handbook of Methods* (Bulletin 2134-1), and the *Monthly Labor Review* articles: "Employment Cost Index: a measure of change in the 'price of labor,'" July 1975; "How benefits will be incorporated into the Employment Cost Index," January 1978; and "The Employment Cost Index: recent trends and expansion," May 1982.

Additional data for the ECI and other measures of wage and compensation changes appear in *Current Wage Developments*, a monthly publication of the Bureau.

32. Employment Cost Index, by occupation and industry group

[June 1981 = 100]

Series	1981		1982				1983			Percent change	
	Sept.	Dec.	March	June	Sept.	Dec.	March	June	Sept.	3 months ended	12 months ended
										September 1983	
Civilian workers¹	102.6	104.5	106.3	107.5	110.1	111.4	113.2	114.5	116.5	1.7	5.8
Workers, by occupational group											
White-collar workers	102.7	104.9	106.5	107.7	110.7	111.9	113.7	114.9	117.6	2.3	6.2
Blue-collar workers	102.3	104.1	105.7	107.1	109.2	110.5	112.3	113.6	114.8	1.1	5.1
Service workers	102.8	104.2	107.2	108.3	110.8	112.4	114.3	115.1	116.7	1.4	5.3
Workers, by industry division											
Manufacturing	102.1	104.0	106.0	107.2	109.3	110.4	112.5	113.5	115.0	1.3	5.2
Nonmanufacturing	102.8	104.8	106.4	107.7	110.5	111.8	113.5	114.9	117.2	2.0	6.1
Services	104.4	107.1	108.2	109.2	113.5	115.0	116.6	117.1	121.1	3.4	6.7
Public administration ²	104.3	106.0	108.1	109.1	112.8	113.6	116.2	117.0	119.8	2.4	6.2
Private industry workers⁴	102.0	104.0	105.8	107.2	109.3	110.7	112.6	113.9	115.6	1.5	5.8
Workers, by occupational group											
White-collar workers	101.8	104.0	105.8	107.2	109.5	110.8	112.8	114.2	116.5	2.0	6.4
Blue-collar workers	102.2	104.0	105.6	107.0	109.0	110.3	112.1	113.5	114.6	1.0	5.1
Service workers	101.9	103.1	106.7	107.9	109.6	111.8	113.8	114.6	115.1	.4	5.0
Workers, by industry division											
Manufacturing	102.1	104.0	106.0	107.2	109.3	110.4	112.5	113.5	115.0	1.3	5.2
Nonmanufacturing	102.0	103.9	105.7	107.1	109.3	110.8	112.6	114.2	116.0	1.6	6.1
State and local government workers	^c 105.3	107.4	108.8	109.3	114.3	115.1	116.5	117.1	120.8	3.2	5.7
Workers, by occupational group											
White-collar workers	^c 105.7	107.8	109.1	109.5	114.9	115.8	117.0	117.5	121.5	3.4	5.7
Blue-collar workers	104.2	105.9	108.2	108.9	112.7	113.0	114.9	115.8	118.0	1.9	4.7
Workers, by industry division											
Services	105.8	107.9	109.0	109.4	114.9	115.9	116.8	117.4	121.7	3.7	5.9
Schools	106.0	107.9	108.9	109.1	114.8	115.8	116.6	116.9	121.9	4.3	6.2
Elementary and secondary	106.3	108.3	109.3	109.5	115.6	116.6	117.2	117.4	123.3	5.0	6.7
Hospitals and other services ³	105.0	107.8	109.5	110.3	115.3	116.0	117.5	118.8	121.1	1.9	5.0
Public administration ²	104.3	106.0	108.1	109.1	^c 112.8	113.6	116.2	117.0	119.8	2.4	6.2

¹Excludes farm, household, and Federal workers.

²Consists of legislative, judicial, administrative, and regulatory activities.

³Includes, for example, library, social, and health services.

c = corrected.

33. Employment Cost Index, wages and salaries, by occupation and industry group

[June 1981 = 100]

Series	1981		1982				1983			Percent change	
	Sept.	Dec.	March	June	Sept.	Dec.	March	June	Sept.	3 months ended	12 months ended
										September	1983
Civilian workers¹	102.5	104.4	106.3	107.3	109.7	110.9	112.2	113.4	115.3	1.7	5.1
Workers, by occupational group											
White-collar workers	102.6	104.7	106.7	107.6	110.4	111.4	113.0	114.2	116.7	2.2	5.7
Blue-collar workers	102.4	104.0	^c 105.5	106.7	108.6	109.8	110.8	112.0	113.1	1.0	4.1
Service workers	102.5	103.6	106.8	107.9	110.1	111.8	113.2	113.9	115.1	1.1	4.5
Workers, by industry division											
Manufacturing	102.1	104.0	105.9	107.0	108.8	109.8	111.0	112.0	113.3	1.2	4.1
Nonmanufacturing	102.7	104.5	106.5	107.5	110.1	111.3	112.7	114.0	116.1	1.8	5.4
Services	104.4	106.6	108.6	109.5	113.2	114.4	115.8	116.3	120.1	3.3	6.1
Public administration ²	103.8	^c 105.5	107.5	108.4	111.9	112.6	114.6	115.4	118.2	2.4	5.6
Private industry workers	102.0	103.8	105.9	107.1	109.0	110.3	111.6	112.9	114.5	1.4	5.0
Workers, by occupational group											
White-collar workers	101.8	103.9	106.2	107.3	109.4	110.6	112.2	113.6	115.9	2.0	5.9
Professional and technical workers	103.3	105.5	108.0	109.4	111.8	112.9	114.8	115.9	119.9	3.5	7.2
Managers and administrators	101.6	102.8	105.8	107.2	108.5	109.3	112.0	114.0	114.8	.7	5.8
Salesworkers	98.0	101.9	102.2	101.8	104.5	106.2	105.7	107.1	108.4	1.2	3.7
Clerical workers	102.7	104.2	107.0	108.3	110.3	111.6	113.4	114.6	116.7	1.8	5.8
Blue-collar workers	102.3	103.9	105.4	106.6	108.5	109.7	110.7	111.9	112.9	.9	4.1
Craft and kindred workers	102.9	104.3	106.2	107.6	109.6	111.2	112.2	113.4	114.3	.8	4.3
Operatives, except transport	102.1	104.1	105.4	106.6	108.3	109.3	110.0	111.1	112.3	1.1	3.7
Transport equipment operatives	101.0	102.7	103.2	104.1	106.0	106.9	108.0	110.3	110.7	.4	4.4
Nonfarm laborers	101.5	103.3	104.1	105.1	106.5	107.8	109.0	109.8	110.8	.9	4.0
Service workers	101.8	102.7	106.7	107.9	109.3	111.4	112.9	113.5	113.7	.2	4.0
Workers, by industry division											
Manufacturing	102.1	104.0	105.9	107.0	108.8	109.8	111.0	112.0	113.3	1.2	4.1
Durables	102.1	104.5	106.3	107.4	109.0	110.3	111.1	111.8	112.9	1.0	3.6
Nondurables	102.0	103.1	105.3	106.3	108.5	109.1	110.9	112.3	113.9	1.4	5.0
Nonmanufacturing	102.0	103.8	105.9	107.1	109.1	110.5	112.0	113.4	115.2	1.6	5.6
Construction	103.0	104.3	105.9	107.3	109.1	109.7	110.4	112.1	112.2	.1	2.8
Transportation and public utilities	102.0	103.6	105.7	106.9	109.5	111.1	112.9	114.7	115.7	.9	5.7
Wholesale and retail trade	101.3	102.3	103.9	105.8	106.5	107.2	108.5	110.8	111.5	.6	4.7
Wholesale trade	102.0	103.4	106.3	108.9	109.0	109.8	111.8	114.1	115.7	1.4	6.1
Retail trade	101.0	101.9	103.0	104.5	^c 105.5	106.1	107.2	109.4	109.9	.5	4.2
Finance, insurance, and real estate	98.3	102.3	103.7	102.4	106.1	109.0	110.6	111.1	113.5	2.2	7.0
Services	103.6	105.8	108.8	110.0	112.5	114.3	116.0	116.6	120.4	3.3	7.0
State and local government workers	105.0	107.0	108.2	108.7	113.5	114.0	115.1	115.7	119.2	3.0	5.0
Workers, by occupational group											
White-collar workers	105.4	107.5	108.5	108.9	114.2	114.6	115.6	116.1	119.8	3.2	4.9
Blue-collar workers	103.9	105.5	107.5	107.9	111.5	112.0	113.3	114.3	116.4	1.8	4.4
Workers, by industry division											
Services	105.5	107.6	108.4	108.8	114.2	114.6	115.5	115.9	119.8	3.4	4.9
Schools	105.7	107.7	108.3	108.5	114.2	114.5	115.2	115.4	119.9	3.9	5.0
Elementary and secondary	106.0	107.9	108.7	108.8	114.9	115.1	115.6	115.8	121.1	4.6	5.4
Hospitals and other services ³	104.6	107.3	108.8	109.5	114.3	114.9	116.5	117.7	119.7	1.7	4.7
Public administration ²	103.8	105.5	107.5	108.4	111.9	112.6	114.6	115.4	118.2	2.4	5.6

¹Excludes farm, household, and Federal workers.

²Consists of legislative, judicial, administrative, and regulatory activities.

³Includes, for example, library, social and health services.

c = corrected.

34. Employment Cost Index, private industry workers, by bargaining status, region, and area size

[June 1981 = 100]

Series	1981		1982				1983			Percent change	
	Sept.	Dec.	March	June	Sept.	Dec.	March	June	Sept.	3 months ended	12 months ended
										September 1983	
COMPENSATION											
Workers, by bargaining status ¹											
Union	102.5	104.8	106.5	108.4	110.6	112.3	114.5	116.0	117.8	1.6	6.5
Manufacturing	102.3	104.6	106.3	108.0	110.3	111.8	114.0	114.8	116.3	1.3	5.4
Nonmanufacturing	102.7	105.0	106.8	108.7	111.0	112.8	114.9	117.1	119.2	1.8	7.4
Nonunion	101.7	103.5	105.3	106.5	108.5	109.7	111.5	112.8	114.4	1.4	5.4
Manufacturing	101.8	103.5	105.7	106.6	^c 108.4	109.2	111.2	112.3	113.8	1.3	5.0
Nonmanufacturing	101.7	103.5	^c 105.2	106.4	108.6	109.9	111.6	113.0	114.7	1.5	5.6
Workers, by area size ¹											
Metropolitan areas	102.1	104.1	105.7	107.2	109.4	110.9	112.9	114.2	116.0	1.6	6.0
Other areas	101.8	103.2	106.2	107.0	108.6	109.1	110.8	112.3	113.4	1.0	4.4
WAGES AND SALARIES											
Workers, by bargaining status ¹											
Union	102.7	105.0	106.5	108.1	110.3	111.8	112.9	114.2	116.0	1.6	5.2
Manufacturing	102.6	104.7	105.9	107.3	109.5	110.8	111.4	112.3	113.7	1.2	3.8
Nonmanufacturing	102.8	105.2	107.0	108.8	111.1	112.7	114.3	116.0	118.3	2.0	6.5
Nonunion	101.6	103.2	105.6	106.5	108.3	109.5	110.9	112.2	113.7	1.3	5.0
Manufacturing	101.7	103.3	105.9	106.7	108.2	109.1	110.7	111.8	113.0	1.1	4.4
Nonmanufacturing	101.6	103.2	105.5	106.4	108.3	109.6	111.0	112.4	114.0	1.4	5.3
Workers, by region ¹											
Northeast	101.7	104.4	106.1	106.7	109.7	111.5	112.0	113.6	115.3	1.5	5.1
South	101.9	102.8	105.7	107.4	108.8	109.8	111.4	112.5	114.3	1.6	5.1
North Central	101.6	103.3	104.7	106.1	107.6	108.6	110.1	111.5	112.8	1.2	4.8
West	103.2	105.1	107.9	108.6	110.7	112.0	114.1	114.9	116.5	1.4	5.2
Workers by area size ¹											
Metropolitan areas	102.1	104.0	105.9	107.1	109.1	110.5	111.9	113.2	114.9	1.5	5.3
Other areas	101.8	103.1	106.0	106.8	108.3	108.8	110.1	111.4	112.3	.8	3.7

¹The indexes are calculated differently from those for the occupation and industry groups. For a detailed description of the index calculation, see BLS *Handbook of Methods*, Bulletin 1910.

c = corrected.

35. Wage and compensation change, major collective bargaining settlements, 1978 to date

[In percent]

Measure	Annual average					Quarterly average								
	1978	1979	1980	1981	1982	1981	1982				1983 ^P			
						IV	I	II	III	IV	I	II	III	
Total compensation changes, covering 5,000 workers or more, all industries:														
First year of contract	8.3	9.0	10.4	10.2	3.2	11.0	1.9	2.6	6.2	3.3	-1.6	4.6	4.5	
Annual rate over life of contract	6.3	6.6	7.1	8.3	2.8	5.8	1.2	2.1	4.7	4.8	1.4	3.8	4.1	
Wage rate changes covering at least 1,000 workers, all industries:														
First year of contract	7.6	7.4	9.5	9.8	3.8	9.0	3.0	3.4	5.4	3.8	-1.2	2.7	3.6	
Annual rate over life of contract	6.4	6.0	7.1	7.9	3.6	5.7	2.8	3.2	4.5	4.8	2.2	2.8	3.6	
Manufacturing:														
First year of contract	8.3	6.9	7.4	7.2	2.8	6.6	2.5	1.8	5.1	4.1	-3.4	1.3	3.8	
Annual rate over life of contract	6.6	5.4	5.4	6.1	2.6	5.4	2.7	1.7	3.9	4.5	.9	1.6	4.1	
Nonmanufacturing (excluding construction):														
First year of contract	8.0	7.6	9.5	9.8	4.3	9.6	2.7	6.6	5.5	3.6	3.5	6.4	5.6	
Annual rate over life of contract	6.5	6.2	6.6	7.3	4.1	5.6	2.1	6.1	4.8	5.2	5.4	5.7	3.9	
Construction:														
First year of contract	6.5	8.8	13.6	13.5	6.5	11.4	8.6	6.2	6.3	3.4	.7	1.7	.4	
Annual rate over life of contract	6.2	8.3	11.5	11.3	6.3	11.7	8.2	6.3	5.9	2.9	2.4	2.1	2.4	

p = preliminary.

36. Effective wage adjustments in collective bargaining units covering 1,000 workers or more, 1978 to date

Measure	Year					Year and quarter								
	1978	1979	1980	1981	1982	1981	1982				1983 ^P			
						IV	I	II	III	IV	I	II	III	
Average percent adjustment (including no change):														
All industries	8.2	9.1	9.9	9.5	6.8	1.5	1.0	2.0	2.4	1.3	0.3	1.3	1.1	
Manufacturing	8.6	9.6	10.2	9.4	5.2	1.9	.9	1.0	1.7	1.5	-.4	1.0	1.1	
Nonmanufacturing	7.9	8.8	9.7	9.5	7.9	1.1	1.1	2.7	2.9	1.2	.9	1.4	1.1	
From settlements reached in period	2.0	3.0	3.6	2.5	1.7	.4	.2	.4	.5	.6	-.2	.2	.2	
Deferred from settlements reached in earlier period	3.7	3.0	3.5	3.8	3.6	.4	.6	1.4	1.3	.4	.4	1.0	.8	
From cost-of-living clauses	2.4	3.1	2.8	3.2	1.4	.6	.3	.2	.6	.3	.1	.1	.2	
Total number of workers receiving wage change (in thousands) ¹	—	—	—	8,648	7,852	3,225	2,878	3,423	3,760	3,441	2,998	3,139	2,883	
From settlements reached in period	—	—	—	2,270	1,907	604	204	511	620	825	444	542	444	
Deferred from settlements reached in earlier period	—	—	—	6,267	4,846	882	1,001	1,594	2,400	860	828	1,413	1,328	
From cost-of-living clauses	—	—	—	4,593	3,830	2,179	1,920	1,568	2,251	1,970	2,050	1,376	1,216	
Number of workers receiving no adjustments (in thousands)	—	—	—	145	483	5,568	5,457	4,912	4,575	4,895	5,047	4,906	5,163	

¹ The total number of workers who received adjustments does not equal the sum of workers that received each type of adjustment, because some workers received more than one type of adjustment during the period.

p = preliminary.

WORK STOPPAGE DATA

WORK STOPPAGES include all known strikes or lockouts involving 1,000 workers or more and lasting a full shift or longer. Data are based largely on newspaper accounts and cover all workers idle one shift or more in establishments directly involved in a stoppage. They do not measure the indirect or secondary effect on other establishments whose employees are idle owing to material or service shortages.

Estimates of days idle as a percent of estimated working time measures only the impact of larger strikes (1,000 workers or more). Formerly, these estimates measured the impact of strikes involving 6 workers or more; that is, the impact of virtually *all* strikes. Due to budget stringencies, collection of data on strikes involving fewer than 1,000 workers was discontinued with the December 1981 data.

37. Work stoppages involving 1,000 workers or more, 1947 to date

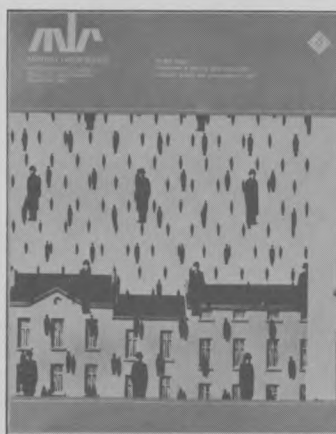
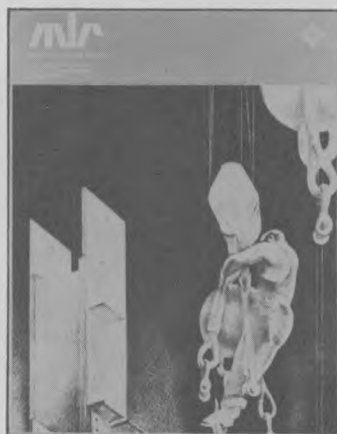
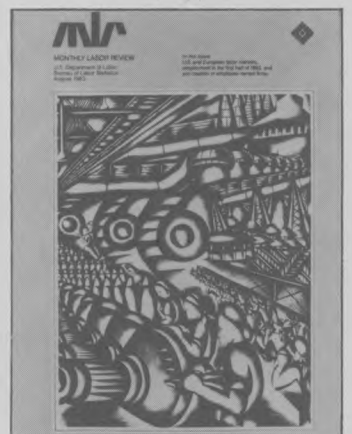
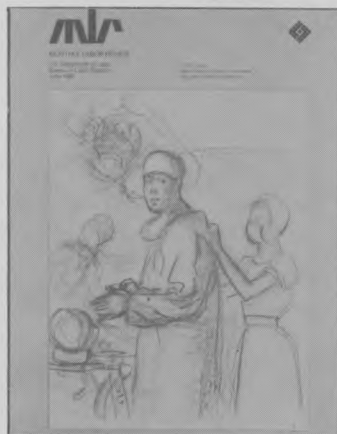
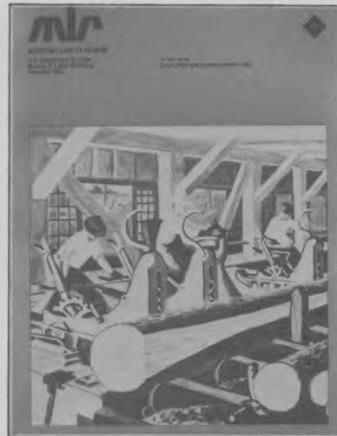
Month and year	Number of stoppages		Workers involved		Days idle	
	Beginning in month or year	In effect during month	Beginning in month or year (in thousands)	In effect during month (in thousands)	Number (in thousands)	Percent of estimated working time
1947	270		1,629		25,720	
1948	245		1,435		26,127	.22
1949	262		2,537		43,420	.38
1950	424		1,698		30,390	.26
1951	415		1,462		15,070	.12
1952	470		2,746		48,820	.38
1953	437		1,623		18,130	.14
1954	265		1,075		16,630	.13
1955	363		2,055		21,180	.16
1956	287		1,370		26,840	.20
1957	279		887		10,340	.07
1958	332		1,587		17,900	.13
1959	245		1,381		60,850	.43
1960	222		896		13,260	.09
1961	195		1,031		10,140	.07
1962	211		793		11,760	.08
1963	181		512		10,020	.07
1964	246		1,183		16,220	.11
1965	268		999		15,140	.10
1966	321		1,300		16,000	.10
1967	381		2,192		31,320	.18
1968	392		1,855		35,567	.20
1969	412		1,576		29,397	.16
1970	381		2,468		52,761	.29
1971	298		2,516		35,538	.19
1972	250		975		16,764	.09
1973	317		1,400		16,260	.08
1974	424		1,796		31,809	.16
1975	235		965		17,563	.09
1976	231		1,519		23,962	.12
1977	298		1,212		21,258	.10
1978	219		1,006		23,774	.11
1979	235		1,021		20,409	.09
1980	187		795		20,844	.09
1981	145		729		16,908	.07
1982	96		656		9,061	.04
1982	January	2	6.1	11.4	202.8	.01
	February	3	3.9	15.3	241.1	.01
	March	4	13.3	26.1	357.0	.02
	April	14	59.5	79.1	533.1	.03
	May	15	42.7	66.1	657.6	.04
	June	18	42.8	66.9	907.2	.05
	July	13	38.4	65.9	844.7	.04
	August	9	18.8	58.0	754.3	.04
	September	14	390.0	427.0	2,088.8	.11
	October	3	38.1	67.6	904.8	.05
1983 ^P	January	1	1.6	38.0	794.8	.04
	February	5	14.0	50.4	844.4	.05
	March	5	10.5	54.9	1,131.5	.05
	April	2	2.8	52.4	789.5	.04
	May	11	23.6	32.9	493.9	.03
	June	15	59.8	79.7	689.0	.03
	July	10	49.9	85.1	1,198.1	.07
	August	7	675.8	730.4	10,655.7	.51
	September	17	21.7	50.8	574.6	.03
	October	10	62.9	79.6	1,152.2	.06

p = preliminary.

r = revised.

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