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Henry Lowenstern, Editor-in-Chief
Robert W. Fisher, Executive Editor

Labor Month In Review

REPORT TO CONGRESS. On October 26, U.S. Secretary of Labor Raymond J. Donovan sent to the Congress a final report on actions taken in response to recommendations made in 1979 by the National Commission on Employment and Unemployment Statistics (NCEUS). Excerpts from the Secretary's report:

Discouraged workers. The Commission's major definitional recommendation was for a change in the measurement of discouraged workers (persons outside the labor force who are not looking for jobs because they believe none is available). Criticizing the present definition as both too arbitrary and too subjective, the Commission recommended that the measurement of discouraged workers be based on prior job search (during the preceding 6-month period), availability, and desire for a job. The Commission also recommended continuation of the present practice of classifying this group as not in the labor force, rather than as unemployed.

I fully support these and the other recommendations relating to labor force data.

Seasonal adjustment. To improve the accuracy of current labor force statistics, the Commission recommended that important current statistics be adjusted on a concurrent basis—calculating new factors every month based on the current month's data. I believe that prior announcement of factors is desirable in order to maintain public confidence in important time series and thus am not accepting this recommendation. BLS research has shown that a 6-month update procedure would improve the accuracy of seasonal adjustment in the last half of each year. The BLS implemented the 6-month update of factors in January 1980. The official seasonal adjustment factors are published with data for January and July, but BLS also makes available publicly each month unemployment rates based on a concurrent adjustment as well as on five other unofficial alternative approaches. Both the BLS and Census Bureau are carrying out continuing research efforts in the area of seasonal adjustment, and, if future findings suggest the desirability of a change to a concurrent or other procedure, this will be seriously considered, in consultation with the government's working group on statistics.

Sample expansion. Although I believe that more accurate State and area unemployment estimates and more reliable data on minority workers are desirable, I cannot in good conscience support increased expenditures of more than $20 million to accomplish these recommendations. The President's overall goals for improving the economy require careful control of government spending. These new initiatives that are recommended by the Commission must, therefore, be rejected. Because of the importance of these issues, however, I have asked the Bureau of Labor Statistics to work out methods—to the extent feasible within current budget constraints—to improve both area and minority worker data as a part of the redesign of the CPS.

Armed Forces. A major Commission recommendation was to include the Armed Forces in the official national labor force and unemployment statistics but to exclude them from State and area data. This is a significant change from the current practice, which has been to base the official national unemployment rate on the civilian labor force. I accept the Commission's recommendation on inclusion of the Armed Forces. Under the present volunteer system, employment in the Armed Forces is not substantively different from civilian employment, and I believe that the official national unemployment rate should be based on a labor force which includes members of the Armed Forces stationed in the United States.

Objectivity of data. The Commission reiterated the Gordon Committee's emphasis on the need for objectivity in the release of data. The NCEUS reviewed the development and analysis of data by the BLS and emphasized the nonpolitical nature of the BLS. I am pleased at the Commission's findings on the integrity and objectivity of the BLS. That objectivity must be preserved, and I pledge that this Administration will do all that it can to ensure that the Bureau's work will continue to be conducted in a thoroughly nonpartisan environment. The country needs accurate and credible data, and I am committed to the preservation and enhancement of the professionalism with which the BLS operates.

Funding arrangements. The Commission recommended the administrative and funding arrangements for all employment and unemployment Federal-State statistical programs be placed in the BLS. I have already taken steps to improve the management of the Department of Labor, and the Commission's recommendation should be reviewed within our overall management improvement framework. I am, therefore, requesting the Assistant Secretary for Administration and Management to chair a committee, with representation from the Employment and Training Administration and the Bureau of Labor Statistics, to review these issues. They will make recommendations for any changes considered desirable as part of our overall review of programs and funding.

Single copies of the "Final Report of the Secretary of Labor on the Recommendations of the National Commission on Employment and Unemployment Statistics" are available from the Office of Information, U.S. Department of Labor, Washington, D.C. 20210. □

Unemployment, labor force trends, and layoff practices in 10 countries

Unemployment rates reached record highs in Great Britain, France, and the Netherlands and were the lowest in Japan and Sweden; statistical treatment of laid-off workers is evaluated

JOYANNA MOY AND CONSTANCE SORRENTINO

After declining in 1979, unemployment rates resumed their upward trend in 1980 in most major industrial countries. In the first half of 1981, unemployment rates leveled off in North America and Japan, but continued rising in Western Europe. By May 1981, the British rate was 11 percent—the highest in Britain's post-World War II history, and the highest rate recorded by any country in the Bureau of Labor Statistics' series of comparative unemployment rates. Unemployment also reached record highs in France and the Netherlands. In contrast, jobless rates of only 2 percent were recorded in the two nations where unemployment has been the lowest and most stable, Japan and Sweden. (See table 1.)

This article examines unemployment and labor force trends in the United States and nine other nations through the first half of 1981, based on data approximating U.S. concepts. For the first time, adjusted labor force statistics are presented for the Netherlands. The Dutch data are shown on an annual average basis only. Some revisions to previously published estimates for other countries are also presented. The revisions generally arise from the inclusion of more recent survey results. (See appendix for an explanation of the Dutch statistics and of the revisions.)

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In addition, persons on temporary layoff are excluded from the unemployed in France and Great Britain, and this has had a slight impact on the comparative rates. In the past, persons on layoff had been included in the unemployed for comparability with U.S. concepts. However, layoff practices are so fundamentally different abroad, compared with U.S. practices, that BLS has decided to make no adjustments on this point. The question of layoffs in international unemployment comparisons is discussed in detail.

Unemployment

In the 1960's and first half of the 1970's, unemployment rates in the United States and Canada were much higher than in Western Europe, Japan, and Australia. However, this situation has been changing in recent years. (See table 2.) In 1979, the U.S. rate of 5.8 percent was surpassed in Australia, France, and Canada; and unemployment in Great Britain and the Netherlands was close to the U.S. rate. In 1980, the U.S. rate rose to 7.1 percent. Only Canada and Great Britain had jobless rates above that level, but Australia, France, and the Netherlands all had rates of more than 6 percent. As of mid-1981, unemployment rates in the United States, Canada, and France were more than 7 percent and the British rate had soared to 11 percent. Unemployment began to recede in Australia, but the German jobless rate, which had averaged 3 percent in 1979 and 1980, reached 4 percent—the highest recorded in the past

Table 1. Quarterly unemployment rates approximating U.S. concepts, seasonally adjusted, 1978–81

Period	United States	Canada	Australia [1]	Japan	France [2]	Germany [2]	Great Britain [3]	Italy [4]	Sweden
1978	6.0	8.4	6.3	2.3	5.4	3.4	6.3	3.7	2.2
I	6.3	8.4	6.7	2.2	4.8	3.5	6.5	3.6	2.2
II	6.0	8.5	6.3	2.3	5.3	3.5	6.4	3.6	2.3
III	5.9	8.4	6.4	2.3	5.7	3.4	6.2	3.6	2.4
IV	5.9	8.2	6.3	2.3	5.6	3.3	6.1	3.9	2.1
1979	5.8	7.5	6.2	2.1	6.1	3.0	5.7	3.9	2.1
I	5.8	7.9	6.3	2.1	5.8	3.2	5.9	3.8	2.2
II	5.7	7.6	6.2	2.1	6.2	3.0	5.6	3.9	2.2
III	5.7	7.1	6.0	2.1	6.3	2.9	5.5	3.9	2.0
IV	5.9	7.3	6.0	2.1	6.2	2.8	5.6	3.9	1.9
1980	7.1	7.5	6.1	2.0	6.5	3.0	7.4	3.9	2.0
I	6.2	7.5	6.0	1.9	6.2	2.8	6.1	4.0	1.8
II	7.3	7.7	6.2	2.0	6.4	2.9	6.7	4.0	1.9
III	7.5	7.5	6.1	2.1	6.5	3.1	7.5	3.9	1.9
IV	7.6	7.4	5.9	2.2	6.6	3.3	8.9	3.8	2.2
1981									
I	7.4	7.2	5.6	2.2	7.2	3.6	10.1	3.9	2.2
II	7.4	7.2	5.6	2.4	8.0	4.0	10.8	4.6	2.2
III	7.2	7.5	5.8	([5])	8.2	4.6	11.2	4.5	2.5

[1] Quarterly data are for February, May, August, and November.
[2] Preliminary data from 1979 forward.
[3] Preliminary data from 1980 forward.
[4] Quarterly data are for January, April, July, and October.
[5] Not available.

NOTE: Quarterly figures for France, Germany, Italy, and Great Britain are calculated by applying annual adjustment factors to current published data, and therefore should be viewed as only approximate indicators of unemployment under U.S. concepts. Published data for Australia, Canada, Japan, and Sweden require little or no adjustment.

two decades. Swedish and Japanese unemployment, which averaged only about 2 percent in 1979 and 1980, showed a slight upward trend in 1980 which continued into 1981. In April, the Japanese rate, 2.4 percent, was its highest monthly rate since late 1978.

Italian unemployment statistics are difficult to interpret. The BLS tentative adjustment of the Italian statistics to approximate U.S. concepts indicates an unemployment rate of about 4 percent in 1979 and 1980, rising to 4.6 percent in the second quarter of 1981. According to the Italian labor force survey, an additional 4 percent of the labor force are looking for work, but have not taken any active steps to find work in the past month. BLS has excluded such persons from the Italian unemployed because U.S. concepts require that a person actively seek work in the past 4 weeks to be counted as unemployed (unless on temporary layoff or waiting to begin a new job).[1] By classifying such persons as out of the labor force rather than as unemployed, the Italian unemployment rate looks quite favorable. However, it implies a very large number of discouraged workers, that is, persons who want jobs but who have stopped actively looking for work because they believe no jobs are available.[2]

The Italian labor market situation is also complicated by a large amount of unrecorded employment, known as "black labor" in Italy.[3] The other countries covered here also have unrecorded employment, but not to the same extent as in Italy. Some persons classified in the Italian survey as not working and looking for work may well have done some work during the survey period which they do not declare when replying to the survey.

Other labor market indicators

Differences in unemployment rates—after adjustment to a common statistical base—reflect the significant differences in the institutions and social programs as well as in the level of economic activity among the 10 countries studied here. Differences in growth and sectoral composition of the labor force also affect unemployment rates. Because unemployment rates alone do not indicate the full extent of labor force underutilization, other labor market indicators, such as employment, employment-population ratios, participation rates, and migration are also examined in this article.

Employment. In 1980, civilian employment in the United States was about 13 percent greater than in 1974, the year before the full effects of the 1974–75 recession were felt. Only Canada had a sharper employment increase. In Australia, Japan, Italy, the Netherlands, and Sweden, employment was up 3 to 7 percent; in France, only 1 percent; and in Germany and Great Britain, employment was 2 percent below 1974 levels. These rates of change in employment are, of course, related to differential rates of growth in the population of working age and to changes in the level of unemployment—all countries except Sweden had higher unemployment rates in 1980 than in 1974. The rates also reflect labor force participation; as will be shown later, only the United States, Canada, and Sweden had significantly higher labor force participation rates in 1980 than in 1974.

While U.S. employment has risen substantially since 1974, the rate of increase slowed in 1979 and employment rose only 0.3 percent in 1980. In Britain, a large drop in the number of persons with jobs in 1980 more than offset small increases recorded the previous 3 years. Employment could have dropped even further were it not for the existence of special employment and training measures. In March 1981, 1.2 million Britons were covered under special employment programs, the most extensive of which subsidizes employers who cut working hours rather than lay off workers. According to the British Department of Employment, these programs kept approximately 345,000 persons from becoming unemployed in March.[4] The Netherlands was the only other country with a 1980 decline in employment, but the fall was not nearly as severe as in Great Britain.

In France, Germany, Italy, and Sweden, employment was bolstered by extensive programs which assisted workers during periods of reduced working hours. In France, the number of workers collecting partial unem-

ployment benefits declined sharply in 1979, but rose by 60 percent in 1980 to 179,000, approximately 1 percent of the labor force. The number of working days compensated doubled to more than 10 million in 1980. In Germany, workers on shorter hours dropped to 88,000 in 1979, the lowest since 1973. In late 1979, however, partial unemployment was again rising and in the fourth quarter of 1980, 270,000 persons, 1 percent of

Table 2. Civilian labor force, employment, and unemployment approximating U.S. concepts, 10 countries, 1974–80

[Numbers in thousands]

Year	United States	Canada	Australia	Japan	France	Germany	Great Britain	Italy	Netherlands	Sweden
Labor force:										
1974	91,011	9,639	6,053	52,440	21,590	26,040	24,850	20,060	4,760	4,037
1975	92,613	9,974	6,169	52,530	21,620	25,630	25,100	20,270	4,830	4,123
1976	94,773	10,206	6,244	53,100	21,800	25,400	25,330	20,490	4,890	4,149
1977	97,401	10,498	6,358	53,820	22,130	25,360	25,520	20,530	4,950	4,168
1978	100,420	10,882	6,399	54,600	22,300	25,520	25,650	20,630	[1]4,970	4,203
1979	102,908	11,207	6,480	55,210	[1]22,500	[1]25,780	25,580	20,910	[1]5,040	4,262
1980	104,719	11,522	6,655	55,740	[1]22,670	[1]25,990	[1]25,440	21,210	[1]5,060	4,314
Labor force participation rate[2]:										
1974	61.2	60.5	63.0	63.0	57.2	54.4	62.6	47.9	48.2	64.9
1975	61.2	61.1	63.2	62.4	56.7	53.4	63.0	47.9	49.3	65.9
1976	61.6	61.1	62.7	62.3	56.7	52.8	63.3	48.1	49.1	66.0
1977	62.3	61.5	62.7	62.5	57.1	52.4	63.5	48.0	49.0	65.9
1978	63.2	62.6	62.0	62.8	57.1	52.8	63.4	47.7	[1]48.5	66.1
1979	63.7	63.3	61.7	62.7	[1]57.3	[1]52.6	62.8	47.8	[1]48.7	66.8
1980	63.8	64.0	62.2	62.6	[1]57.4	[1]53.0	[1]62.1	48.0	[1]48.4	[1]67.2
Employment:										
1974	85,936	9,125	5,891	51,710	20,960	25,620	24,080	19,500	4,580	3,957
1975	84,783	9,284	5,866	51,530	20,710	24,740	23,950	19,620	4,580	4,056
1976	87,485	9,479	5,946	52,020	20,800	24,510	23,820	19,760	4,630	4,083
1977	90,546	9,648	6,000	52,720	21,040	24,460	23,900	19,790	4,700	4,093
1978	94,373	9,972	5,997	53,360	21,100	24,650	24,040	19,870	[1]4,710	4,109
1979	96,945	10,369	6,075	54,040	[1]21,130	[1]25,000	24,130	20,100	[1]4,770	4,174
1980	97,270	10,655	6,250	54,600	[1]21,200	[1]25,210	[1]23,560	20,380	[1]4,740	4,228
Employment-population rate[3]:										
1974	57.8	57.3	61.3	62.2	55.5	53.5	60.7	46.6	46.3	63.6
1975	56.0	56.9	60.1	61.2	54.3	51.5	60.2	46.4	46.7	64.8
1976	56.8	56.7	59.7	61.1	54.1	50.9	59.6	46.3	46.5	64.9
1977	57.9	56.6	59.2	61.2	54.3	50.5	59.4	46.2	46.5	64.8
1978	59.4	57.4	58.1	61.3	53.8	51.0	59.4	45.9	[1]45.9	64.6
1979	60.0	58.6	57.9	61.4	[1]53.8	[1]51.0	59.3	46.0	[1]46.1	65.4
1980	59.3	59.2	58.4	61.3	[1]53.6	[1]51.4	[1]57.5	46.1	[1]45.3	[1]65.9
Unemployment:										
1974	5,076	514	162	730	630	420	770	560	180	80
1975	7,830	690	302	1,000	910	890	1,150	650	250	67
1976	7,288	727	298	1,080	1,000	890	1,510	730	260	66
1977	6,855	850	358	1,100	1,090	900	1,620	740	250	75
1978	6,047	911	402	1,240	1,200	870	1,610	760	[1]260	94
1979	5,963	838	405	1,170	[1]1,370	[1]780	1,450	810	[1]270	88
1980	7,448	867	405	1,140	[1]1,470	[1]780	[1]1,880	830	[1]320	86
Unemployment rate:										
1974	5.6	5.3	2.7	1.4	2.9	1.6	3.1	2.8	3.8	2.0
1975	8.5	6.9	4.9	1.9	4.2	3.5	4.6	3.2	5.2	1.6
1976	7.7	7.1	4.8	2.0	4.6	3.5	6.0	3.6	5.4	1.6
1977	7.0	8.1	5.6	2.0	5.0	3.5	6.3	3.6	5.1	1.8
1978	6.0	8.4	6.3	2.3	5.4	[1]3.4	6.3	3.7	[1]5.2	2.2
1979	5.8	7.5	6.2	2.1	[1]6.1	[1]3.0	5.7	3.9	[1]5.4	2.1
1980	7.1	7.5	6.1	2.0	[1]6.5	[1]3.0	[1]7.4	3.9	[1]6.3	2.0
Unemployment rate (as published by each country)[4]:										
1974	5.6	5.3	2.7	1.4	2.8	2.6	2.6	[5]5.4	3.5	2.0
1975	8.5	6.9	4.9	1.9	4.2	4.7	4.1	[5]5.9	5.0	1.6
1976	7.7	7.1	4.8	2.0	4.6	4.6	5.6	[5]6.7	5.3	1.6
1977	7.0	8.1	5.6	2.0	4.9	4.5	6.1	7.2	5.1	1.8
1978	6.0	8.4	6.3	2.2	5.3	4.3	6.0	7.2	5.0	2.2
1979	5.8	7.5	6.2	2.1	6.1	3.8	5.6	7.7	5.0	2.1
1980	7.1	7.5	6.1	2.0	6.4	3.8	7.4	7.6	5.8	2.0

[1] Preliminary estimate based on incomplete data.

[2] Civilian labor force as a percent of civilian working-age population.

[3] Civilian employment as a percent of civilian working-age population.

[4] Published and adjusted data for the United States, Canada, and Australia are identical. For France, unemployment as a percent of the civilian labor force; for Japan, Italy, and Sweden, unemployment as a percent of the civilian labor force plus career military personnel; for Germany, Great Britain, and the Netherlands, registered unemployed as a percent of employed wage and salary workers plus the unemployed. Except for France, which does not publish an unemployment rate, these are the usually published unemployment rates for each country.

[5] Italian Central Institute of Statistics estimate made for comparability with the revised labor force survey, introduced in 1977.

NOTE: Data for the United States relate to the population 16 years and over. Published data for France, Germany, Italy, and the Netherlands relate to the population 14 years and over; for Sweden, to the population age 16 to 74; and for Canada, Australia, and Japan, to the population 15 years and over. For Great Britain, the lower age limit was raised from 15 to 16 in 1973. The statistics have been adapted, insofar as possible, to the age at which compulsory schooling ends in each country. Therefore, the statistics for France relate to the population 16 and over and for Germany and the Netherlands, to the population 15 years and over. The age limits of the statistics for Canada, Australia, Japan, Great Britain, and Italy coincide with the age limits of the published statistics. Statistics for Sweden remain at the lower age limit of 16, but have been adjusted to include persons 75 years of age and over.

the labor force, collected short-time benefits. In Italy, the number of hours subsidized rose from 287 million in 1979 to 296 million, approximately 37 million days, in 1980. In Sweden, programs such as training and public works assist the unemployed and disabled. The number of persons enrolled in these programs has exceeded the number of jobless since 1973. In 1977, enrollment was more than double the number of unemployed. Since 1978, when the average number of persons in training and public works programs reached 170,000, enrollment has declined slowly. Persons in training for labor market reasons made up 40 percent of total enrollments in the early 1970's; by 1977, this figure had risen to 55 percent. In 1979, enrollment in training programs returned to the proportions recorded in the early 1970's, as enrollment in public works projects expanded from 18 percent of the total in 1977 to 31 percent in 1979.

The relative movement of workers out of the goods-producing sector and into the service sector continued its long-term trend in all countries. Employment in industry—mining, manufacturing, and construction—which at one time absorbed many surplus agricultural workers, now appears to be declining as a proportion of total civilian employment in all of the countries.

As of 1979–80, the agricultural sector (including forestry and fishing) accounted for about 15 percent of civilian employment in Italy, 10 percent in Japan, 9 percent in France, and under 7 percent in the other countries. Twenty years earlier, agriculture accounted for about 30 percent of employment in Japan and Italy, more than 20 percent in France, and more than 10 percent in all of the other countries except the United States and the United Kingdom.

Employment in services—which includes employment in transportation, communications, and public ultilities, wholesale and retail trade, finance, insurance, and real estate, public administration, and personal, business, and miscellaneous services—has been growing both absolutely and as a proportion of total employment in all countries. In 1980, service employment reached 50 percent of the total in Germany, leaving Italy as the only country with more workers engaged in the production of agricultural and industrial goods than of services. In 1960, service employment accounted for more than half of the total only in the United States and Canada; two-thirds of U.S. and Canadian employment is now in the service sector.

Employment in industry has been declining as a proportion of total employment in most of the countries since at least the mid-1960's. The exceptions are Japan and Italy, where industrial employment continued to rise relative to total employment until 1974. However, Germany, where industrial employment has been moving slowly downward, still has the highest proportion of industrial workers—44 percent. Industrial employment in the other countries ranges from under 30 percent in the United States, Canada, and Australia to about 38 percent in Italy and the United Kingdom.

Employment-population ratios. In 1980, civilian employment as a percent of the population of working age—the employment-population ratio—declined in Great Britain, the Netherlands, the United States, and France. This occurred because employment declined in Great Britain and the Netherlands and employment growth in the United States and France did not match the increases in their working-age population. For the United States, this was the first decline in the employment-population ratio since the recession of 1975; between 1975 and 1979, the ratio had increased by an average of 1 percentage point a year.

The employment ratio is the highest in Sweden, where it rose to 65.9 percent in 1980. The Japanese employment-population ratio fell to 61.2 percent in 1975 and has remained at about that level since. In the United States, Canada, Australia, and Great Britain, the ratios have ranged between 57 and 60 percent in recent years, while the ratios for France and Germany are somewhat lower. Italy and the Netherlands are the only countries studied where fewer than one-half of the civilian working-age population is employed.[5] This reflects low female labor force participation rates in these two countries, although the Italian figures would be understated to the extent that persons engaged in "black labor"—and not otherwise employed—are not counted in the Italian survey. Black labor, or unreported employment, exists to some extent in all countries, but it is of greatest concern in Italy.

Participation rates. The U.S. labor force participation rate—the ratio of the civilian labor force to the civilian working-age population—was 63.8 percent in 1980, little changed from 1979, but substantially higher than the 1974–75 level of 61.2 percent. Only Canada had a sharper rise over this period. But, Sweden continued to have the highest labor force participation rate—67.2 percent in 1980. In all three countries, male participation rates have been falling, but they have been more than offset by rising female participation. (See table 3.) In the other countries, 1980 participation rates were about the same or lower than in 1974, as slowly rising female rates only matched or failed to match declining male rates. Australia, Japan, and Great Britain at one time had higher labor force participation rates than the United States, but in 1978, the U.S. rate surpassed those in Australia and Japan and in 1979, the British rate fell below the U.S. rate and continued downward in 1980.

The lowest labor force participation rates are in Italy and the Netherlands, where less than half of the work-

Table 3. Labor force participation rates approximating U.S. concepts, by sex, 1974–80

Year	United States	Canada	Australia	Japan	France[1]	Germany	Great Britain	Italy	Netherlands[2]	Sweden
Men:										
1974	78.7	78.7	82.7	81.5	73.0	73.5	80.9	71.3	([3])	76.9
1975	77.9	78.4	82.2	81.0	73.2	72.0	81.2	71.0	74.7	77.0
1976	77.5	77.6	81.5	80.9	72.6	71.0	81.4	70.5	([3])	76.5
1977	77.7	77.6	81.0	80.3	71.6	70.2	81.1	69.1	73.4	75.6
1978	77.9	77.9	79.8	80.1	71.4	70.6	80.4	68.6	([3])	75.1
1979	77.9	78.4	79.5	79.9	71.6	[4]70.1	79.2	68.2	([3])	75.2
1980	77.4	78.3	79.2	79.6	([3])	[4]70.2	[4]78.0	67.8	([3])	75.0
Women:										
1974	45.6	43.0	43.5	45.7	41.6	37.9	46.1	26.6	([3])	53.3
1975	46.3	44.4	44.5	44.8	42.5	37.4	46.6	26.9	28.0	55.2
1976	47.3	45.2	44.3	44.8	42.9	37.2	47.1	27.6	([3])	55.8
1977	48.4	46.0	44.8	45.7	44.2	37.1	47.5	28.6	28.8	56.7
1978	50.0	47.8	44.5	46.4	43.3	37.5	48.1	28.6	([3])	57.5
1979	51.0	48.9	44.3	46.6	44.3	[4]37.9	48.0	29.2	([3])	58.7
1980	51.6	50.3	45.5	46.6	([3])	[4]38.2	[4]47.6	29.9	([3])	59.7

[1] Data are for March.
[2] Data are for March–May.
[3] Not available.
[4] Preliminary estimate.

NOTE: Data relate to the civilian labor force approximating U.S. concepts as a percent of the civilian working-age population. Working age is defined as 16-year-old and over in the United States, France, and Sweden; 15-year-old and over in Australia, Canada, Germany, and Japan; and 14-year-old and over in Italy. For Great Britain, the lower age limit was raised from 15 to 16 in 1973. The institutionalized working-age population is included in Japan and Germany.

ing-age population is employed or looking for work. For the Netherlands, the low rates may be explained, in part, by provisions of the social security system, as disability payments are usually more generous than early retirement pensions or unemployment benefits. Therefore, according to the Organization for Economic Cooperation and Development, "the more favorable benefits and the weak demand for labor may have encouraged continuing shifts from the active population into inactivity."[6] In 1979, the number of disability recipients was 12 percent of the labor force, twice the proportion in 1973.

Male-female differences in labor force participation rates were widest in Italy and in the Netherlands and narrowest in Sweden. In 1980, the participation rate for Italian women was still substantially less than half the rate of their male counterparts. In Sweden, the rate for women was 80 percent of that for men, reflecting in part, extensive government-financed day care facilities, separate taxation for married women, parenthood insurance, and greater flexibility in working hours.

Migrant workers. In 1973–74, several European Community nations banned the recruitment of foreign workers from outside the Community. Consequently, many unemployed foreign workers remained in the host countries because re-entry was uncertain and social benefits such as unemployment insurance were more generous than in the home countries. This trend of jobless alien workers remaining in the host nations contributed to the sharp rise in overall unemployment recorded in Western Europe during the 1974–75 recession.

Since 1974, the jobless rates of foreign workers have been significantly higher than the overall unemployment rates. This contrasts with the situation of the 1960's and early 1970's when unemployment rates of migrant workers were much lower than the overall rates. The higher foreign worker jobless rates reflect their concentration in sectors vulnerable to economic downturns, such as in manufacturing, construction, hotels, and restaurants. In addition, migrant workers tend to be young or unskilled or both, two groups with high incidences of joblessness.

In France, the overall jobless rate, as recorded in the March 1973 labor force survey, was 3.4 percent and the foreign worker rate was 2.7 percent (not adjusted to U.S. concepts). By March 1976, the foreign worker unemployment rate had risen to 6.5 percent, compared to the overall rate of 6 percent. In March 1979, the foreigners' jobless rate, 9.2 percent, was significantly higher than the overall rate of 7 percent. In Germany, the overall 1973 unemployment rate (based on registration statistics and not adjusted to U.S. concepts) was 1.2 percent, compared with the foreign worker jobless rate of 0.8 percent. By 1975, the overall rate, 4.7 percent, was lower than the migrant worker rate of 6.8 percent. In 1980, the alien workers' jobless rate was 5.2 percent, compared with the overall rate of 3.8 percent.

In Sweden, migrant workers' unemployment rates have been double the overall rate since 1977 when the data were first collected in the labor force survey. Data on registered foreign workers available from the second half of 1974 are also indicative of their rising unemployment. Foreign workers accounted for 4.3 percent of all registrations in the second half 1974, 8.6 percent in 1978, and 6.9 percent in 1980.

Employment of foreign nationals in Germany declined sharply during the 1974–75 recession and did not begin to rise until 1978. In March 1981, alien worker employment reached 2 million for the first time since 1975. In Sweden, foreign worker employment has risen slowly since 1977 to 225,000 in 1980. In contrast, the

number of foreign nationals with a job in France has declined since 1977. However, foreign worker employment in March 1979, 1.4 million, was still higher than in 1974.

The demographic pattern of migrants in Western Europe has changed in the past decade. In the 1960's and early 1970's, the foreign population consisted primarily of economically active men whose families remained in the home countries. Beginning in the mid-1970's, when new migration from non-European Community member states was banned, the number of dependent family members in Western Europe increased rapidly as host countries liberalized integration programs and promoted family unification. In 1972, 65.6 percent of Germany's foreign population were in the labor force, compared with 48.7 percent in 1979. This proportion is expected to rise again as dependents of "settled" migrant workers are now eligible to obtain work permits.

Treatment of layoffs

In the U.S. labor force survey, persons on layoff who are awaiting recall to their jobs are classified as unemployed. In European countries and Japan, however, many such persons are classified as employed. In the past, BLS made adjustments to include such persons in the unemployed count in two of the European countries —France and Great Britain. Japanese, Italian, and German unemployment data also would have been adjusted if reliable data on layoffs had been available. In recent years, when reliable layoff data became available, adjustments were developed for those countries. However, BLS reconsidered its strict application of the U.S. definition after labor statisticians in these other countries questioned the procedure. The statisticians pointed out that European and Japanese layoff practices are quite different from those in North America, and therefore, strict application of the U.S. definition was unwarranted.

International differences in the classification of laid-off workers stem mainly from the degree of job attachment. North American and Australian workers on layoff have relatively little attachment to their former jobs, while European and Japanese workers on layoff have a very strong job attachment, even during lengthy layoffs, because they are employed under work contracts. They regard themselves as employed, and unlike the North American workers, they are virtually certain to be recalled to their jobs. Because of these differences, BLS now does not adjust the unemployment figures for European countries and Japan to include persons on layoff who are waiting to be recalled. Persons on layoff continue to be included in the unemployed count in the United States, Canada, and Australia.

It should be noted that persons on layoff represent a form of labor underutilization in all countries, whether they are classified as employed or unemployed. To enhance international comparisons of how labor markets are functioning, it would be desirable to measure and compare total labor slack—that is, unemployment, workers on layoff, workers on part time for economic reasons, and discouragement. However, sufficient comparable data for all countries have not yet been developed. The following discussion points out the differences among the statistical treatments of layoffs and the layoff practices of the major industrial countries, and the impact of the change in BLS procedures on the comparative unemployment rates.

U.S. definitions. Persons on layoff who are awaiting recall to their jobs are counted as unemployed in U.S. unemployment statistics. The only requirement is that they must be currently available for work. Unlike other unemployed persons, they are not required to have been actively seeking work in the prior 4 weeks. Even so, a special BLS survey in May 1976 indicated that most people on layoff do indeed look for work. About 80 percent of those on layoff in May 1976 looked for work during their current spell of unemployment (not necessarily the past 4 weeks.)[7]

ILO definitions. The Eighth International Conference of Labour Statisticians, under the auspices of the International Labour Office (ILO), established standard definitions of labor force and unemployment in 1954. These ILO definitions specify that persons on layoff without pay are to be included in the unemployed. At the time these definitions were established, very few laid-off workers received remuneration from their firms. Now, however, most laid-off workers in Europe and Japan receive payments directly from their firm or from the firm and government combined. The ILO plans to convene a Conference of Labour Statisticians in October 1982 to discuss updating these concepts.

The Working Party on Employment and Unemployment Statistics of the Organization for Economic Cooperation and Development (OECD) recently commissioned a study of the statistical treatment of layoffs and partial unemployment.[8] Its findings were discussed at the June 1981 meeting of the Working Party, a gathering of delegates from the statistical offices of most member countries. The Working Party argued that the ILO definition of layoffs has a number of shortcomings and should be revised. A new definition was proposed as an international standard: to be counted as unemployed, a person on layoff would have to have weak job attachment and to be looking for work. Strength of job attachment would be measured by circumstances such as (1) existence of a specific recall date or a specific circumstance (noneconomic) that would result in immediate recall; (2) elapsed length of layoff; and (3)

maintenance of the wage or salary payment to the employee. The proposed definition would make it possible to distinguish between situations where a very strong link remains between the person laid off and the employer and those where this link becomes tenuous or broken. In the latter case, the laid-off worker becomes closely comparable to the dismissed worker.

Data on recall dates and job search of laid-off persons are not regularly collected in most labor force surveys. Plans are underway to introduce questions on these points in the U.S. survey in 1983. Canada and Australia currently collect data on job search by laid-off workers but not on recall dates; none of the remaining countries collects any of this information. If the 1982 ILO Conference of Labour Statisticians adopts an international standard along the lines recommended by the OECD, more detailed data on layoffs would be available.

Definitions in other countries. In Canada, Australia, and Sweden, persons on layoff who are awaiting recall to their jobs are classified as unemployed. However, there are specifications in each country which make the treatment of such persons different from the practice in the United States. In all three countries, persons on layoff do not have to be seeking work to be classified as unemployed, except that after a specified period in Canada (26 weeks) and Australia (4 weeks), they do have to be taking active steps to find work. The U.S. survey does not impose a time limit beyond which laid-off persons must seek work. The Australian and Swedish surveys follow the ILO definition in that it specifies that layoffs should be "without pay" for classification as unemployed. No such specification is made in the U.S. or Canadian surveys, but in both countries, layoffs are generally unpaid. There are a small number of persons on paid layoff in North America, Australia, and Sweden, and such persons generally report themselves as employed.

Because of the lengthy period allowed in Canada before jobseeking is required (26 weeks), it does not appear that this cutoff has much effect on the comparative statistics. Most persons laid off for that length of time would be looking for work and, therefore, would be included in the unemployment data.

Unpublished data for Australia, supplied by the Australian Bureau of Statistics, indicate that there are, on average, only about 2,000 persons laid off without pay for 4 weeks or longer who are not actively looking for work. Such persons would be classified as unemployed in the United States, but are regarded as "not in the labor force" in Australia. They are equivalent to less than 0.5 percent of total Australian unemployment, and, if included, would make no difference in the comparative Australian jobless rate.

The Swedish Central Bureau of Statistics indicated that there were about 1,500 persons on unpaid layoff in 1979 and 1980. These persons are included in the Swedish unemployment figures, but they represent only about 1.7 percent of the total. Data are not available on the extent of their job search activity.

In Japan and Western Europe, persons on layoff who are awaiting recall to their jobs are generally classified as employed. They are regarded as "with a job, but not at work" (except for unpaid layoffs in Sweden). The reason for this classification is that such persons regard themselves as having a job rather than as "jobless." They rarely seek other employment, and they continue on the payroll of their firms.

Differences in layoff practices. Initially, during economic declines, hours are cut back in all countries. As output declines worsen, North American and Australian employers usually rely on temporary or indefinite layoffs. In Western Europe and Japan, however, employers try to maintain their work forces by making further use of "short-time schedules," where hours at work are reduced in order to spread available jobs among a larger number of persons. Legal restraints on layoffs in Europe and Japan make worksharing a more attractive option than it is in the United States. The fact that special payments are available for workers placed on shortened workweeks also encourages worksharing.[9] In the United States, Canada, and Australia, unemployment insurance systems may actually cause workers and their unions to prefer layoffs rather than reduced hours. American workers whose hours are cut receive no compensation from the State (except in California[10]), unless their earnings fall below the level of benefits to which they would be entitled in a layoff. Even then, benefits are limited roughly to the differences between full weekly benefits and the income earned during the week in question. The Canadian and Australian systems are similar.[11] Furthermore, it may be in the U.S. employer's interest to resort to layoffs rather than to a reduction in hours because fringe benefits cost more under a worksharing system. There are few, if any, such costs associated with workers on layoff. On the other hand, the cost to employers of losing skilled workers and having to hire and train new workers when business improves must also be weighed.

Layoffs in Europe and Japan normally take the form of reduced hours or fewer days worked during the week, rather than entire weeks without work. Occasionally, there may be a temporary plant shutdown or a practice of working alternate weeks, so that some laid-off workers in these countries may be out of work entirely during some weeks.

During the layoff or short-time period in Europe and Japan, a strong employment relationship is maintained

between workers and firms. This relationship is much stronger than in the United States because of the existence of work contracts abroad. In most cases, European and Japanese workers remain on the payroll and receive payments from the firm (subsidized by the government) for the time not worked. Furthermore, they retain seniority and other employment-related benefits (for example, health and old-age benefits insurance). In short, the workers are treated as if they had maintained their employment relationship. They usually do not engage in jobseeking activities because they regard themselves as employed and they are virtually certain to return to their jobs at the end of the layoff period.

In North America and Australia, workers usually do not work under employment contracts. Laid-off workers do not remain on the payroll and generally do not receive payments from their firms. A few U.S. industries (auto and steel, for instance) are exceptions to the extent that supplemental unemployment benefits (SUB) are paid by the firm to laid-off workers. These benefits are combined with regular unemployment benefits to provide a higher level of wage replacement. The U.S. labor force survey does not collect information on whether laid-off workers are receiving SUB payments, because no distinction is made in the U.S. definition concerning paid versus unpaid layoffs.

A 1974 analysis of 52,000 U.S. private industry health care plans, covering 28 million workers, indicated that 45 percent of the workers participated in plans that explicitly did not extend protection to workers who had been laid off.[12] An additional 15 percent were in plans that provided no information on health benefits after layoff; presumably, most also did not have layoff benefit protection. The remaining 11 million workers, or 40 percent, were in plans reporting definite provisions to continue health benefits for at least 1 month after layoff. The degree of protection for those with layoff health benefits varied considerably. A little more than half were covered for 3 months or longer; about one-fifth had less than 3 months of coverage; and slightly more than one-fifth had plans in which layoff benefits varied by length of employment. Data were not available for the remainder.

An analysis of major U.S. collective bargaining agreements shows that seniority rights (and recall rights) are generally limited to a specified time period.[13] The worker who has not been recalled by the expiration of this period almost always loses his seniority. Nonunionized workers generally lose all seniority when laid off.

Prevalence of layoffs. Persons on layoff accounted for almost 20 percent of total U.S. unemployment in 1980, up from 14 percent in 1979 and around 12 percent in earlier years. Persons on layoff were 1.4 percent of the U.S. labor force in 1980, and less than 1 percent in earlier years. About 44 percent of those on layoff in 1980 were unemployed less than 5 weeks; 9 percent were laid off 27 weeks or longer.

Layoffs compose a smaller proportion of unemployment in Canada and Australia. Canadians on layoff have accounted for 7 to 8 percent of total unemployment and 0.6 percent of the labor force in recent years. Data on layoffs are not published in the Australian labor force survey reports. However, the Australian Bureau of Statistics indicates that, on average, some 10,000 to 12,000 persons claim to have a job from which they have been laid off. Of these, about 1,000 are being paid and are classified as employed. About 2,000 are on unpaid layoff for 4 weeks or more and are not looking for work—they are classified as not in the labor force. About 1,000 are laid off without pay for 4 weeks or more and are actively looking for work—they are classified as unemployed. The remaining 6,000 to 8,000 persons are laid off without pay for less than 4 weeks and are classified as unemployed, unless they are laid off because of bad weather or plant breakdown, in which case they are classified as employed. Therefore, the number of layoffs in the unemployed count totals only 7,000 to 9,000, or about 2 percent of total unemployment and 0.1 percent of the labor force.

Unpublished labor force survey tabulations for Germany indicate that the number of persons on short-time schedules for economic reasons who worked zero hours during the reference week is very small—at the most, 25,000 workers in the deep recession year of 1975 (about 0.1 percent of the labor force) and much smaller numbers in other years. Inclusion of the 25,000 would raise the adjusted rate for 1975 from 3.1 to 3.2 percent. In other years, there would be no impact on the comparative rate. Although there have been a substantial number of workers on short-time schedules in Germany, most work shorter hours each day rather than being laid off for weeks at a time. Such workers on reduced hours are regarded as employed under both U.S. and German definitions.

The revised Italian labor force survey, instituted in 1977, generates unpublished data on the number of "underemployed" persons who worked no hours in the reference week. According to the Italian Central Bureau of Statistics, there are a substantial number of such persons—102,000 in 1977 and 110,000 in 1978, or about 0.5 percent of the labor force. If added to current unemployment figures, these persons would raise the 1977 comparative rate from 3.6 to 4.1 percent and the 1978 rate from 3.7 to 4.2 percent.

For Japan, special surveys conducted each March have produced data on the number of persons on layoff who worked zero hours in the reference week. Virtually all of these persons are on paid layoffs. There were 100,000 such persons in 1977 and 140,000 in 1978; or

about 0.2 percent of the labor force. Adjusting the unemployed to include them would raise the 1977 comparative rate from 2.0 to 2.2 percent, and the 1978 rate from 2.3 to 2.6 percent.

For France, the number on layoff an entire week has averaged about 20,000 since 1971. In Great Britain, the number of persons on layoff for an entire week averaged about 13,000. For both countries, this was less than 0.1 percent of the labor force in most years. In the past, the BLS has adjusted French and British unemployment data to include persons on layoff an entire week who were waiting to return to their jobs. Table 4 shows unemployment rates for both countries, including and excluding the layoff adjustments. Whether persons on layoff are included makes very little difference in the unemployment rates in France and Great Britain.

Table 4. Unemployment rates for France and Great Britain, adjusted for layoffs and approximating U.S. concepts, 1971–80

Year	France		Great Britain	
	With layoff adjustment	Without layoff adjustment	With layoff adjustment	Without layoff adjustment
1971	2.8	2.7	3.9	3.9
1972	2.9	2.8	4.3	4.2
1973	2.8	2.7	3.2	3.2
1974	3.0	2.9	3.1	3.1
1975	4.3	4.2	4.7	4.6
1976	4.7	4.6	6.0	6.0
1977	5.0	5.0	6.4	6.3
1978	5.4	5.4	6.3	6.3
1979	6.1	6.1	5.8	5.7
1980	6.6	6.5	7.5	7.4

Conclusion. Layoffs in Europe and Japan typically are in the form of short-time work schedules. Classification of short-time workers who work 1 or more hours a week is clear: they are considered employed under United States, ILO, and all other countries' concepts. Classification of workers doing no work during the reference week (because of economic reasons) is less clear: this group can be characterized according to their "zero hours" worked. On one hand, it could be argued that, as with American workers on layoff, foreign workers on zero hours for economic reasons should also be classified as unemployed. This would be a very strict application of U.S. definitions.

On the other hand, it could be argued that layoffs in Europe and Japan are fundamentally different from North American layoffs. The overriding difference is the degree of job attachment. Persons on layoff are appropriately counted as unemployed in the United States because they are "jobless." In Europe and Japan, however, such persons have work contracts and, therefore, have a job. Workers on layoff in these countries feel a strong attachment to their jobs and usually continue to receive payments directly from their firm. They do not regard themselves as unemployed, do not seek work, and answer surveys to the effect that they have a job. Under the North American systems, workers on layoff have much weaker job attachments. They are often not recalled to their jobs, and they frequently engage in job search while on layoff.

European workers on layoff for a full reference week still have the same degree of job attachment as workers on reduced weekly hours. In the first case, workers may simply be working alternate weeks as their firm's most convenient form of worksharing. Thus, to consider the "zero hours" workers as unemployed and the "short-time" workers as employed would not be consistent. It would be applying different labor force classifications to essentially the same situation.

European and Japanese layoffs, even at the level of zero weekly hours, are not directly comparable with U.S. layoffs. U.S. definitions should not be forced onto the data for other countries where practices are so different from our own. Therefore, for international comparisons, BLS will consider European (except for the small number of persons on unpaid layoff in Sweden) and Japanese workers on layoff as employed, even if they work no hours in the reference week. Adjustments for layoffs previously made to French and British data have been eliminated in the data shown in this article. The impact of this change on the adjusted unemployment rates is very small. □

FOOTNOTES

[1] There could be a number of persons registered as unemployed who do not consider registration to be an active job search step, believing that the government is looking for work for them. Registration is valid for 30 days from the end of the month registered (or from 59 to 31 days); for the youth employment exchanges, it is valid for 3 years. Registration is an effective job search method for persons seeking manual work and for youths seeking special public administration jobs. Other jobseekers may not feel preparation for job entry examinations in an active job search method. In addition, it is not the usual practice in Italy to make frequent inquiries regarding the status of one's employment application.

[2] However, prior to 1967, the United States classified very few discouraged workers as unemployed. There was no specific question on discouraged workers in the U.S. survey prior to 1967. Respondents volunteered that they were discouraged, and only a limited number of discouraged workers were enumerated as unemployed. In 1967, however, a new questionnaire was introduced that broadened the search period for unemployment from an implied 1 week to 4 weeks and also eliminated the practice of reliance on volunteered information. The questionnaire includes specific questions that attempt to measure labor force discouragement.

[3] "Black labor" is unrecorded employment; the worker may moonlight or it may be the primary job. Taxes, social security, and other contributions are not withheld. For an analysis of "black labor" in Italy, see CENSIS, "L'Occupazione Occulta," CENSIS Ricerca No. 2 (Rome, CENSIS, 1976).

[4] Department of Employment, "Special Employment and Training Measures," Press Notice, Mar. 24, 1981, p. 1.

[5] For further information, see *International Comparisons of Unemployment,* Bulletin 1979 (Bureau of Labor Statistics, 1978), pp. 23–26.

[6] Organization for Economic Cooperation and Development, "Economic Survey, Netherlands" (Paris, OECD, 1981), p. 35.

[7] *Job Search of the Unemployed, May 1976,* Special Labor Force Report 210 (Bureau of Labor Statistics).

[8] Bernard Grais, "Layoffs and Partial Unemployment," paper prepared for the fifth meeting of the OECD Working Party on Employment and Unemployment Statistics, June 9–11, 1981 (Paris, OECD, May 1981).

[9] For further information, see *International Comparisons of Unemployment,* p. 59.

[10] The California program, begun in 1978, allows unemployment insurance benefits to be paid to workers whose wages and hours are reduced as a temporary alternative to layoffs. Employers' participation in the program is voluntary. See Fred Best and James Mattesich, "Short-time compensation systems in California and Europe," *Monthly Labor Review,* July 1980, pp. 13–22. In addition, Arizona recently passed a worksharing compensation law.

[11] Canada has also experimented with the short-time compensation concept. See "Work Sharing in Canada," Department of Employment and Immigration, Ottawa, Canada, April 1978.

[12] "Health Benefits for Laidoff Workers," *Social Security Bulletin,* February 1976.

[13] *Major Collective Bargaining Agreements: Layoff, Recall, and Worksharing Procedures,* Bulletin 1425–13 (Bureau of Labor Statistics, 1972), p. 49.

APPENDIX: Adjustment to U.S. concepts

This article contains revisions of the Bureau's previously published unemployment estimates for France, Germany, and Great Britain. The revisions for France arise from the omission of the previous adjustment to exclude persons on layoff from the unemployed. Also, data from the October 1978, 1979, and 1980 and March 1979 and 1980 surveys have been incorporated in the revised estimates.

For Germany, the revisions in this article relate to a new adjustment made to the unemployment data to exclude persons not currently available to begin work and the inclusion of 1979 labor force survey results. The adjustment is the outcome of the recommendations made by Carol L. Jusenius and Burkhard von Rabenau in their review of BLS adjustment methods for Germany prepared for the National Commission on Employment and Unemployment Statistics. (See "Unemployment Statistics in the United States and the Federal Republic of Germany: Problems of International Comparisons," paper prepared for the National Commission on Employment and Unemployment Statistics, December 1978.) The BLS is now using unpublished 1977 Microcensus (German household survey) tabulations on current availability for work in making the new adjustment. The survey indicated that there were a significant number of students enumerated as unemployed who were not currently available to begin work because they were still in school (the German survey is taken in April and the school year ends in July).

Data on the number of unemployed students are reported each year in the survey results and these figures have been used to make estimates for years other than 1977. (The adjustment to exclude students not currently available for work should be regarded as a partial adjustment. There may be some other persons who should be excluded because they were not available for work and BLS is now pursuing this point with the German Federal Statistical Office.) This revision lowers previous estimates for 1975 forward by about 0.3 percentage point. For earlier years, there is very little change.

The British data were also modified to exclude the layoff adjustment and to incorporate data from the 1977 through 1979 General Household Surveys. In addition, a new method of determining the number of unregistered unemployed persons has been used. Previously, estimates of total comparable unemployment were derived by inflating the British General Household Survey data to universe levels. However, the General Household Survey has a very small sample size which makes it difficult to measure accurately year-to-year changes in the unemployment rate. Therefore, a better method would be to start with the count of registered unemployed persons, as it is a total universe count, and to modify that count in several ways to arrive at unemployment approximating U.S. concepts. The estimated number of registered persons who did some work during the reference week is subtracted, as are "inactive" registered men. The latter group consists mainly of older workers who report themselves as economically inactive in the General Household Survey, but who register as unemployed to obtain credits toward their pensions. Added to the registered unemployed are: (1) adult students (age 18 and over) who registered as unemployed but who are not included in the official British registration figures; and (2) the unregistered unemployed. The latter estimate was derived from the General Household Survey results.

The following tabulation shows the previously published and revised British unemployment rates for 1970 to date (asterisks indicate that General Household Survey data were not incorporated in the estimates):

Year	*Previous*	*Revised*
1970	3.1	3.0
1971	3.7	3.9
1972	4.1	4.2
1973	2.9	3.2
1974	2.9	3.1
1975	4.1	4.6
1976	5.5	6.0
1977	*6.2	6.3
1978	*6.1	6.3
1979	*5.8	5.7
1980	*7.5	*7.4

BLS is now investigating a further adjustment for Great Britain to exclude persons not currently available for work from the unemployed count. Such data were col-

lected in the recent General Household Surveys which the United Kingdom conducted under the auspices of the Statistical Office of the European Communities. However, there are some problems in interpreting these data, and they are not used in this article.

In the United States, labor force participation rates and employment-population ratios are calculated using the civilian noninstitutional working-age population. The ratios previously shown for Canada and Italy also excluded the institutional population, but the ratios for the other countries did not. With this article, the ratios for Australia, France, Great Britain, and Sweden have been revised to conform with the U.S. definition; the figures for the Netherlands also exclude the institutional population. Participation rates and employment ratios for Japan and Germany, however, are still based on data including the institutionalized population, because data on the size and age-sex distribution of this population group are not available.

The impact of the exclusion of the institutional population was to raise both the labor force participation rate and employment-population ratio by about 1 percentage point, except for the French participation rates. The French rates were raised by only .2 of a percentage point, because a majority of the institutionalized population is excluded from the scope of the labor force survey. There is no significant difference in the impact on participation rates by sex. In all of the countries, the number of men and women residing in the various institutions is roughly equal.

The Netherlands

This article introduces Dutch labor force and unemployment statistics adjusted to approximate comparability with U.S. definitions from 1973 forward. Results from the biennial Dutch labor force survey—the AKT—were used to estimate the adjusted Dutch labor force statistics. Because of the infrequency of earlier surveys and limited data, attempts to adjust Dutch data prior to 1973 would be less reliable. (According to the Netherlands Central Bureau of Statistics, even the results of the 1973 survey are not reliably comparable with later survey results because of changes in sampling methods and some changes in the survey questionnaire; however, the 1973 survey results appear to be sufficiently comparable with the later surveys and are used in the BLS analysis.) In addition, limited data currently preclude the calculation of quarterly and monthly jobless rates approximating U.S. concepts.

BLS analysis found that the AKT overstates the number unemployed under U.S. concepts while employment office registrations understate unemployment on a U.S. basis. For example, in March–May 1977, adjusted unemployment was estimated at 233,300, compared with the Dutch survey figure of 299,800 and the registered unemployed figure of 191,700.

The "official" Dutch data on joblessness relate to persons age 15 to 65 who do not have a job and are registered at an employment office for full-time work (25 hours or more a week since 1977 and 30 hours or more prior to 1977). Persons on temporary layoff are allowed to register, but only if they have been out of work for at least 1 week. Registration must be renewed monthly in order to remain on the register and is compulsory for recipients of unemployment insurance benefits. The count is taken on the day preceding the last full working day of the month. Unemployment rates are calculated by dividing the registered unemployed by an annual estimate of the wage and salary labor force.

The Dutch labor force survey collects data in such a manner that the population can be classified according to two definitions of economic activity—in the "strict sense" and in the "broad sense". The labor force in the "strict sense" is comprised of persons who initially classify themselves as employed or unemployed. The labor force in the "broad sense" is the sum of the labor force in the "strict sense" and the "marginal" labor force. The "marginal" labor force consists of persons who do not initially classify themselves as economically active—for example, housewives, students, pensioners—but who upon further probing reveal that they worked or looked for work. The labor force in the "broad sense" more closely corresponds to U.S. concepts and is used to estimate the adjusted data.

The number of AKT unemployed was adjusted to exclude: (1) persons not currently available for work except for temporary illness, (2) persons who had not yet commenced seeking work, and (3) persons younger than the legal school-leaving age. Adjustments could not be made for a few other differences from U.S. concepts, but the number involved are probably very small. AKT employment data were adjusted to exclude: (1) the Armed Forces, (2) unpaid family workers working less than 15 hours a week, and (3) persons younger than the legal school-leaving age.

Adjustment ratios for unemployment and employment were calculated by comparing adjusted AKT data to published data. Separate ratios by sex were compiled for the unemployed because of the wide sex differential in the propensity to register. Monthly registered unemployment data were weighted according to the distribution of the survey interviews to more closely correspond to the AKT survey period of March–May. Because of the lack of reliable data, no adjustments were done to make the published employment estimates more closely match the survey period. The adjustment factors were then applied to annual average published statistics under the assumption that the ratios for the survey period are representative of the entire year. Adjustment factors for years between survey years were interpolated, and factors from the last survey are maintained until the results of later surveys become available. For most years, the resultant unemployment rates approximating U.S. concepts are slightly higher than the official rates. A more detailed description of the adjustment method is available from the authors.

International comparisons of trends in productivity and labor costs

Manufacturing productivity slowed or declined in 1980 and unit labor costs accelerated, as output generally turned downward in the United States and 10 industrial nations; compensation was up in most countries but was offset by gains in consumer prices

PATRICIA CAPDEVIELLE AND DONATO ALVAREZ

Manufacturing productivity declined during 1980 in the United States, Canada, and Germany and slowed in the eight other industrial countries studied, as output turned down in all countries except Japan and Italy and adjustments in employee hours were mixed. Productivity was down 0.3 percent in the United States and 1.4 percent in Canada, and was up by more than 6 percent in Japan and Italy, and an average 2.3 percent in all eight European countries.

Unit labor costs accelerated in all 11 countries in 1980, but the increases varied—from less than 1 percent in Japan (where unit labor costs declined the previous year) to 11 percent in the United States and Sweden, nearly 15 percent in France and Italy, and 23 percent in the United Kingdom. Measured in U.S. dollars (to account for relative changes in exchange rates), unit labor costs declined 2.5 percent in Japan; exchange rate changes moderated cost trends in Denmark and Italy, but accentuated those in Canada and the other European countries, with the United Kingdom registering a 35-percent increase.

Hourly compensation rose 7 to 11 percent in most countries in 1980, larger increases occurring only in France (15 percent) and in Italy and the United Kingdom (21 and 23 percent). For most countries, the increases were within 1 percent of those of the previous year. Because consumer prices accelerated, however, real hourly compensation declined in five of the countries and increased 5 percent or less in every other country.

This article describes developments in manufacturing productivity (as measured by output per hour), hourly compensation, real compensation, and unit labor costs in 1980, and in the years since 1973, in the United States, Canada, Japan, France, Germany, Italy, the United Kingdom, and four smaller European countries —Belgium, Denmark, the Netherlands, and Sweden.[1] Data are presented for the eight European countries and for the 10 foreign countries combined.[2] Percent changes for 1960–80, 1960–73, and 1973–80 shown in the tables are computed using the least squares method —that is, from the least squares trend of the logarithms of index numbers—in order to remove much of the effect of cyclical changes on the average rates of change and thereby estimate the underlying trends.[3] The data reflect revised underlying statistics for several countries —notably Japan, Denmark, and the United Kingdom.[4] (Annual indexes from 1950 forward are available from authors.)

Although the productivity measure relates output to the hours of persons employed in manufacturing, it

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does not measure the specific contributions of labor as a single factor of production. Rather, it reflects the joint effects of many influences, including new technology, capital investment, the level of output, capacity utilization, energy use, and managerial effectiveness, as well as the skills and efforts of the work force.

Manufacturing productivity

In 1980, manufacturing productivity declined about 1.5 percent in Canada and 0.3 percent in the United States and Germany. Productivity increased, but at a slower rate than in the preceding year, in the other European countries and Japan—about 0.5 percent in France, Sweden, and the United Kingdom and 1.5 percent in Denmark; 3 to 4 percent in Belgium and the Netherlands; and more than 6 percent in Japan and Italy. (See table 1.)

In the 7 years since 1973, manufacturing productivity has increased at average annual rates of more than 6 percent in Japan and Belgium; between 3 and 6 percent in France, Germany, Italy, Denmark, and the Netherlands; and only 2 percent in the United States, Canada, Sweden, and the United Kingdom. For all countries, this represents a slowdown from the 1960–73 period.

The 1980 productivity declines in the United States and Canada reflected decreases in output which were only partly offset by declines in hours. In the United Kingdom, a substantial drop in output (9 percent) was more than offset by decreases in hours. Output either fell or slowed substantially from 1979 in all countries except Japan and Italy, which registered gains of around 7 percent. Labor input declined in every country except Japan and Germany.

The 1980 output drop in the United States (4.6 percent) was greater than the decline which occurred in 1974, but less than the subsequent decline in 1975. In the United Kingdom, the 9-percent output decline in 1980 was greater than in the previous recession.

The underlying rate of growth for manufacturing output in the 1973–80 period was about 2 percent in Canada, 1.8 percent in Europe, and 6 percent in Japan, compared with 2.5 percent in the United States. Among the European countries, only France, Italy, and Denmark had higher underlying rates than the United States.

In 1980, total hours rose about 1 percent in Japan and Germany, but fell in all other countries. The largest declines were in the United States and Belgium—4 to 5 percent—and the United Kingdom—nearly 10 percent. Employment changes corresponded with changes in total hours, except for Italy where employment increased moderately. (See table 2.)

The 1980 decline in U.S. employment and hours was the first since the 1974–75 recession. In contrast, employment and hours have continued to decline in all or nearly all years in every European country except Italy. U.S. employment and hours surpassed 1973 levels in 1978 and continued rising in 1979. However, because of the 1980 declines, U.S. manufacturing employment was only 1.5 percent above the 1973 level and total hours were down 1 percent. Among the other countries, only Canada and Italy show 1973–80 employment increases

Table 1. Changes in manufacturing productivity and output in 11 countries, 1960–80

[Annual changes in percent]

Year	United States	Canada	Japan	France	Germany	Italy	United Kingdom	Belgium	Denmark	Netherlands	Sweden	Eight European countries	Ten foreign countries
Output per hour:													
1960–80	2.7	3.8	9.4	5.6	5.4	5.9	3.6	7.2	6.4	7.3	5.2	5.4	5.9
1960–73	3.0	4.5	10.7	6.0	5.5	6.9	4.3	7.0	6.4	7.6	6.7	5.9	6.4
1973–80	1.7	2.2	6.8	4.9	4.8	3.6	1.9	6.2	5.1	5.6	2.1	4.2	4.7
1974	−2.4	1.6	2.4	3.5	6.0	4.9	.8	5.4	3.3	8.3	3.6	4.3	3.9
1975	2.9	−2.6	3.9	3.1	4.8	−4.4	−2.0	5.2	10.4	−1.7	−.4	1.4	1.9
1976	4.4	4.9	9.4	8.2	6.3	8.6	4.0	10.3	7.7	12.7	1.0	7.1	7.3
1977	2.4	5.1	7.2	5.1	5.3	1.1	1.6	5.0	3.7	4.1	−1.5	3.4	4.3
1978	.9	3.1	7.9	5.3	3.8	2.9	3.2	6.0	4.4	6.0	4.3	4.1	5.0
1979	1.1	1.2	8.0	5.4	6.3	7.3	3.3	5.8	2.3	5.5	8.1	5.9	6.1
1980	−.3	−1.4	6.2	.6	−.7	6.7	.3	3.6	1.7	3.7	.6	2.3	3.1
Output:													
1960–80	3.7	4.9	10.2	5.5	4.0	5.6	1.8	5.3	4.4	4.9	3.4	4.2	5.4
1960–73	4.7	6.3	13.0	6.6	5.3	6.8	3.0	6.5	5.2	6.4	5.1	5.4	6.8
1973–80	2.5	1.9	6.1	2.7	2.1	3.4	−1.1	1.4	2.7	1.7	−.4	1.8	2.9
1974	−4.2	3.8	−2.0	3.2	.3	6.4	−1.2	4.3	1.5	4.4	4.8	2.1	1.2
1975	−7.1	−6.3	−4.0	−2.1	−5.2	−9.7	−7.0	−6.6	−2.1	−6.7	−1.5	−5.4	−5.1
1976	9.6	5.5	13.3	7.0	7.2	12.6	2.0	8.4	8.8	8.0	−.4	6.9	8.4
1977	6.7	1.4	7.3	3.7	2.8	2.1	1.9	−.6	2.1	.9	−5.6	2.2	3.4
1978	5.4	5.7	7.3	2.7	1.8	1.8	.5	1.9	2.7	1.8	−1.3	1.7	3.4
1979	3.1	3.8	9.2	3.1	5.0	6.7	.2	3.6	3.5	2.7	6.7	4.0	5.4
1980	−4.6	−2.6	7.1	−1.1	.3	6.5	−9.4	−1.3	.0	.9	−.6	−.5	1.5

NOTE: Rates of change computed from the least squares trend of the logarithms of the index numbers.

Table 2. Changes in manufacturing employment and hours in 11 countries, 1960–80

[Annual changes in percent]

Year	United States	Canada	Japan	France	Germany	Italy	United Kingdom	Belgium	Denmark	Netherlands	Sweden	Eight European countries	Ten foreign countries
Aggregate hours:													
1960–80	0.9	1.0	0.8	−0.1	−1.3	−0.3	−1.7	−1.8	−1.9	−2.3	−1.7	−1.1	−.5
1960–73	1.6	1.7	2.1	.6	−.2	−.1	−1.2	−.4	−1.1	−1.1	−1.5	−.4	.4
1973–80	.7	−.3	−.7	−2.1	−2.6	−.1	−2.9	−4.5	−2.2	−3.7	−2.4	−2.3	−1.7
1974	−1.9	2.1	−4.3	−.3	−5.4	1.4	−2.0	−1.0	−1.7	−3.6	1.2	−2.2	−2.7
1975	−9.7	−3.9	−7.6	−5.0	−9.6	−5.5	−5.1	−11.2	−11.3	−5.1	−1.1	−6.7	−6.8
1976	4.9	.6	3.6	−1.1	.8	3.8	−1.9	−1.7	1.0	−4.2	−1.5	−.2	1.0
1977	4.2	−3.5	.1	−1.3	−2.4	1.0	.2	−5.4	−1.5	−3.0	−4.1	−1.2	−.9
1978	4.4	2.5	−.5	−2.4	−1.9	−1.1	−2.6	−3.9	−1.6	−3.9	−5.4	−2.3	−1.5
1979	2.0	2.6	1.1	−2.2	−1.3	−.6	−3.0	−2.6	1.2	−2.6	−1.3	−1.8	−.7
1980	−4.1	−1.2	.8	−1.7	1.0	−.2	−9.6	−4.7	−1.7	−2.7	−1.2	−2.7	−1.5
Employment:													
1960–80	1.0	1.3	1.6	.6	−.4	1.2	−.9	−.5	−.6	−1.0	−.2	−.1	.4
1960–73	1.5	1.9	3.0	1.2	.5	1.4	−.5	.6	.2	.0	−.2	.5	1.1
1973–80	.8	.3	−.8	−1.2	−1.8	.1	−2.2	−3.6	−1.7	−2.7	−.9	−1.5	−1.3
1974	−.4	2.0	.2	1.3	−2.6	2.5	1.9	1.1	−3.6	−.4	2.4	.3	.4
1975	−8.6	−2.5	−5.1	−2.7	−6.7	−.4	−3.8	−6.1	−8.4	−3.3	.9	−3.9	−4.2
1976	3.7	.1	.4	−1.0	−2.4	.2	−2.2	−4.1	.6	−3.9	−.2	−1.7	−1.0
1977	3.6	−2.2	−.2	−.5	−.8	.1	−.4	−3.9	−.6	−2.7	−3.5	−.7	−.7
1978	4.2	2.5	−1.1	−1.7	−.6	−1.0	−2.4	−4.1	−.4	−2.8	−2.8	−1.6	−1.3
1979	2.6	3.9	.0	−1.8	.3	.5	−2.5	−2.7	1.3	−1.6	.3	−.9	−.5
1980	−3.4	−1.1	.9	−1.4	.7	.2	−5.9	−2.7	−2.6	−2.2	−.2	−1.6	−.9
Average hours:													
1960–80	.0	−.3	−.8	−.7	−.9	−1.5	−.8	−1.2	−1.4	−1.3	−1.4	−1.0	−.8
1960–73	.1	−.2	−.9	−.5	−.8	−1.5	−.7	−1.0	−1.3	−1.1	−1.3	−.9	−.8
1973–80	−.1	−.5	−.1	−.9	−.9	−.3	−.8	−.9	−.5	−1.0	−1.5	−.8	−.5
1974	−1.5	.1	−4.5	−1.5	−2.9	−1.1	−3.8	−2.1	2.0	−3.2	−1.1	−2.5	−3.0
1975	−1.2	−1.4	−2.6	−2.3	−3.1	−5.1	−1.3	−5.4	−3.2	−1.8	−2.0	−2.9	−2.8
1976	1.2	.5	3.2	−.1	3.2	3.5	.3	2.5	.4	−.3	−1.3	1.5	2.0
1977	.6	−1.3	.3	−.9	−1.6	.9	.6	−1.5	−.9	−.3	−.7	−.4	−.2
1978	.2	.0	.6	−.7	−1.4	−.1	−.2	.3	−1.2	−1.1	−2.6	−.7	−.3
1979	−.6	−1.2	1.1	−.4	−.6	−1.1	−.5	.6	−.1	−1.1	−1.6	−.9	−.3
1980	−1.0	−.1	−.1	−.3	.3	−.4	−3.9	−2.0	1.0	−.5	−1.0	−1.1	−.6

NOTE: Rates of change computed from the least squares trend of the logarithms of the index numbers.

and no country shows an overall gain in aggregate hours. The following tabulation shows total percentage changes in employment and hours between 1973 and 1980:

	Employment	*Hours*
United States	1.5	−0.9
Canada	2.5	−1.0
Japan	−5.0	−7.0
France	−7.7	−13.3
Germany	−11.6	−17.7
Italy	2.2	−1.4
United Kingdom	−14.5	−22.0
Belgium	−20.6	−26.7
Denmark	−13.4	−15.1
Netherlands	−15.9	−22.7
Sweden	−3.1	−12.7

Hourly compensation

In 1980, hourly compensation increased 21 to 24 percent in Italy and the United Kingdom, 15 percent in France, and 7 to 11 percent in the other countries. These increases were somewhat smaller than those of the previous year in Canada, Germany, Denmark, and the Netherlands. For the United States, Japan, and France, the 1980 increases were slightly larger than the year earlier changes; and for Sweden, Belgium, Italy, and the United Kingdom, the acceleration was more significant. (See table 3.)

In all countries, the compensation increases of the last 2 years were below the peak gains of 1974 or 1975. The moderation was greatest in Japan, where the recent 7 percent gains were less than one-fourth of their 31 percent peak advance. Compensation gains also slowed significantly in the smaller European countries—Belgium, the Netherlands, Sweden, and Denmark—where recent compensation increases were about one-half or less of their peak gains. Compensation increases did not diminish as much in Canada and the larger European countries; and in the United States, the 1979 and 1980 average increases were only about 10 percent below the 1975 peak. However, the peak 1975 compensation increase in the United States was relatively small—12 percent. In contrast, the peak compensation gains were about 30 percent in Italy, the United Kingdom, and Japan; around 20 percent in France, Belgium, Denmark, the Netherlands, and Sweden; and 15 percent in Canada and Germany.

Except for the Netherlands, hourly compensation increases have decelerated, then rebounded, since 1973. For most countries, the smallest compensation gains oc-

curred in 1978. In the United Kingdom and Sweden, the smallest gains occurred in 1977 and 1979, respectively. Compensation increases began moderating in 1976 in Japan and Germany, and since then annual wage gains have fluctuated. Only the Netherlands has shown a steady deceleration in hourly compensation increases since 1973.

Despite the rebounds, only in the United States, France, Italy, and the United Kingdom did recent increases in hourly compensation equal or exceed the underlying average rates of gain for 1973–80. In the other seven countries, the 1980 increases were well below the underlying trend.

Real hourly compensation. Real hourly compensation, which takes into account changes in consumer prices, declined in 5 of the 11 countries in 1980—down 2 to 3 percent in the United States and Sweden, and around 1 percent in Canada, Japan, and Denmark—and was almost unchanged in Italy and the Netherlands. Real compensation increased about 1 to 5 percent in France, Germany, Belgium, and the United Kingdom. However, except for Belgium, even these gains were lower than those of the previous year, as consumer prices accelerated at a more rapid rate than wages.

For the United States, 1980 was the second consecutive year of real declines in hourly compensation. None of the other countries had declines in real hourly compensation in 1979, although several did in 1977 or 1978. In general, consumer prices have not moderated as much as manufacturing compensation since the 1974–75 inflation peak. Furthermore, the 1980 consumer price increases in the United States, France, Italy, and Sweden matched or surpassed their previous high rates. Consequently, whereas most countries had substantial gains in real hourly compensation in 1974–75, few showed significant gains in 1980.

Over the 1973–80 period, real hourly compensation increased less than 1 percent annually in the United States; 1.7 percent in Japan; about 2 to 4 percent in Canada and most European countries; and 5 percent in Germany. This contrasts with 1960–73 real compensation gains of about 2 to 3 percent per year in the United States and Canada; about 4 to 6 percent in France, Germany, Denmark, Sweden, and the United Kingdom; and 7 to 8 percent in Japan, Italy, Belgium, and the Netherlands.

The fairly narrow range in the 1973–80 average annu-

Table 3. Changes in manufacturing hourly compensation and in consumer prices, 11 countries, 1960–80

[Annual changes in percent]

Year	United States	Canada	Japan	France	Germany	Italy	United Kingdom	Belgium	Denmark	Netherlands	Sweden	Eight European countries	Ten foreign countries
Hourly compensation:													
1960–80	6.7	8.6	15.1	12.0	10.3	16.0	12.7	12.4	13.3	13.2	11.8	11.9	12.1
1960–73	5.0	6.4	14.6	9.7	9.4	12.3	8.7	10.7	11.8	12.8	10.1	9.9	10.2
1973–80	9.3	11.9	10.5	15.2	9.7	20.1	19.1	12.0	13.1	10.6	13.8	13.8	12.8
1974	10.6	15.1	31.2	20.2	15.3	24.6	25.0	22.0	21.0	19.2	17.8	18.5	21.4
1975	11.9	14.8	17.0	19.7	12.7	28.9	30.3	20.6	19.3	14.4	21.3	18.6	18.1
1976	8.0	14.3	6.7	14.3	7.3	19.8	17.0	12.1	11.7	12.4	18.0	12.7	11.0
1977	8.3	12.8	9.7	14.1	9.9	18.8	11.7	11.0	11.8	8.6	8.6	11.7	11.1
1978	8.2	7.5	5.9	12.9	8.5	14.4	16.2	7.0	10.3	8.6	13.5	11.6	9.9
1979	9.8	9.9	6.6	13.9	9.1	17.6	19.3	7.4	10.9	7.5	8.4	13.0	11.1
1980	10.7	9.4	7.1	15.0	7.9	21.3	23.6	10.1	10.7	6.9	11.1	15.0	12.5
Real hourly compensation:													
1960–80	1.5	3.1	6.9	5.1	6.2	7.2	3.8	6.6	5.2	6.6	5.0	5.6	5.5
1960–73	1.8	3.0	8.2	5.1	6.3	7.9	3.7	6.9	5.3	7.4	5.3	5.7	5.8
1973–80	.7	2.6	1.7	4.2	5.2	2.7	3.1	3.9	2.3	3.4	3.3	4.0	3.2
1974	−.3	3.8	6.5	5.7	7.9	4.3	7.8	8.3	5.0	8.7	7.2	6.7	6.7
1975	2.5	3.6	4.7	7.1	6.2	10.0	4.9	6.9	8.8	3.8	10.5	6.5	6.0
1976	2.1	6.3	−2.5	4.2	2.8	2.8	.4	2.7	2.4	3.3	7.0	2.9	1.5
1977	1.7	4.4	1.5	4.3	6.1	−.4	−3.6	3.6	0.6	1.8	−2.6	2.0	1.9
1978	.5	−1.3	1.6	3.5	5.9	1.7	7.3	2.4	0.2	4.4	3.2	4.6	3.5
1979	−1.3	.7	2.8	2.9	5.1	1.6	5.2	2.8	1.2	3.1	1.1	3.9	3.2
1980	−2.5	−.7	−.6	1.3	2.5	.1	4.7	3.2	−1.4	.3	−2.3	2.8	1.4
Consumer Price Index:													
1960–80	5.1	5.3	7.7	6.6	3.8	8.1	8.6	5.5	7.8	6.2	6.4	6.0	6.2
1960–73	3.2	3.2	5.9	4.3	3.0	4.1	4.8	3.6	6.2	5.0	4.6	4.0	4.1
1973–80	8.6	9.1	8.7	10.6	4.3	16.9	15.6	7.8	10.6	7.0	10.2	9.5	9.3
1974	11.0	10.9	23.2	13.7	6.9	19.4	16.0	12.7	15.2	9.6	9.9	11.0	13.7
1975	9.1	10.8	11.7	11.8	6.1	17.2	24.2	12.8	9.6	10.2	9.8	11.4	11.4
1976	5.8	7.5	9.4	9.6	4.4	16.5	16.5	9.2	9.0	8.8	10.3	9.5	9.4
1977	6.5	8.0	8.1	9.4	3.5	19.3	15.9	7.1	11.1	6.7	11.4	9.5	9.1
1978	7.7	9.0	4.2	9.1	2.5	12.4	8.3	4.5	10.1	4.1	10.0	6.7	6.3
1979	11.3	9.1	3.7	10.8	3.9	15.7	13.4	4.5	9.6	4.2	7.2	8.8	7.6
1980	13.5	10.1	7.7	13.6	5.3	21.1	18.0	6.7	12.3	6.5	13.7	11.9	10.9

NOTE: Rates of change computed from the least squares trend of the logarithms of the index numbers.

al real hourly compensation increases (1 to 5 percent) contrasts with the wider differentials in nominal hourly compensation growth rates (9 to 20 percent). The two countries with the largest hourly compensation increases —the United Kingdom and Italy at 20 percent—also had the largest price increases (more than 15 percent) and consequently had only average real compensation gains. On the other hand, Germany, with the smallest hourly compensation increase (except for the United States), had the largest real compensation gain because prices offset less than half the compensation change. The United States had the smallest 1973–80 real compensation gain because consumer prices offset more than 90 percent of the compensation increase.

Real compensation measurement. Hourly compensation is designed to measure employer expenditures for the benefit of workers. Compensation includes gross payments made directly to employees—pay for time worked; vacation, holiday, and other leave pay; and all bonuses and other special payments—and also employer contributions to legally-required insurance programs and to contractual and private welfare plans for the benefit of employees.

Hourly compensation includes more than the current labor income of employees. It includes employer expenditures for benefit programs from which employees may derive additional current income (for example, family allowances or reimbursements for medical expenses). It also includes employer contributions for benefit plans from which employees may derive future benefits (such as national and supplementary company or union pension plans).

Real compensation, therefore, measures the constant purchasing power of total labor compensation, including employer (and employee) payments to both current and deferred social benefit plans. Real compensation covers much more than real spendable weekly earnings —an alternative real income measure—which excludes employer and employee contributions for social insurance and employee income taxes.[5]

Real hourly compensation was computed by dividing hourly compensation by the consumer price index for each country. The consumer price index is a statistical measure of the changes in prices of goods and services bought by either the whole population or a particular group.

It should be noted that the real compensation measures are not strictly comparable among all 11 countries because of differences in their consumer price indexes. First, the indexes do not cover the same population groups in each country. (These differences should not have any significant effect on comparative trends, however. For Germany and the Netherlands, indexes covering different population groups show almost the same price trends.) Second, the indexes for France, Sweden, and the United Kingdom are computed using annually revised weights, while the indexes for the other countries are base weighted. Third, and most important, the indexes treat owner-occupied housing differently. In France, Italy, Belgium, and Denmark, owner-occupied housing costs (except possibly maintenance and municipal rates) are excluded from index coverage on the premise that home purchase is an investment. In Japan, Germany, the Netherlands, and the United Kingdom before 1975, owner-occupied housing is covered by an imputed rent measure. Indexes for the other countries, and the United Kingdom beginning 1975, cover certain house purchase expenditures, including mortgage interest. The United Kingdom covers mortgage interest, measured using current interest rate trends, but not house prices. Sweden computes a user cost function which includes measures of depreciation and the cost of both invested and borrowed capital. Canada also computes a user cost function which includes depreciation cost and mortgage interest, measured using average interest rate trends. The United States covers home purchase along with other housing costs, including current house prices and mortgage interest at current rates.

The differences in the treatment of owner-occupied housing can have a significant effect on measured consumer price—and real compensation—trends.[6] In particular, countries measuring current mortgage interest rates will show relatively higher consumer price increases during periods of rising interest rates (and relatively lower increases during rate declines).

For the United States, the average annual percent increase in consumer prices for 1975–80 was 8 percent based on a BLS experimental index which covers homeownership with an imputed rent measure, compared with the 9-percent measured by the conventional price index. Furthermore, the differences between the two indexes are even greater in the last 2 years. Therefore, using the "imputed rent" consumer price index, real hourly compensation shows no decrease at all in 1979 and a much smaller decline (.6) in 1980.

Unit labor costs

Unit labor costs, which reflect changes in both productivity and hourly compensation, increased about 6 percent in 1980 in Belgium; 9 to 11 percent in the United States, Canada, Germany, Sweden, and Denmark; 14 percent in France and Italy; and 23 percent in the United Kingdom; but less than 1 percent in Japan and only 3 percent in the Netherlands. (See table 4.)

The 1980 increases were higher than those of 1979 in all countries—but only moderately so in Denmark and the Netherlands. The acceleration in unit labor costs was either entirely or primarily the result of the deterioration in productivity growth in most countries, partic-

Table 4. Changes in manufacturing unit labor costs in 11 countries, 1960–80

[Annual changes in percent]

Year	United States	Canada	Japan	France	Germany	Italy	United Kingdom	Belgium	Denmark	Netherlands	Sweden	Eight European countries	Ten foreign countries
Unit labor costs:													
1960–80	3.8	4.7	5.3	5.9	4.7	9.5	8.8	4.9	6.5	5.5	6.5	6.2	5.8
1960–73	1.9	1.8	3.5	3.1	3.7	5.1	4.1	3.5	5.1	4.8	3.5	3.8	3.5
1973–80	7.5	9.5	3.4	9.9	4.7	16.0	17.2	5.5	7.6	4.8	11.2	9.2	7.7
1974	13.3	13.2	28.1	16.2	8.7	18.7	24.1	15.8	17.1	10.0	13.5	13.5	16.8
1975	8.8	17.8	12.6	16.1	7.5	34.9	32.5	14.6	8.0	16.4	21.7	16.9	15.9
1976	3.4	9.0	−2.5	5.6	.9	10.4	12.7	1.6	3.7	−.3	17.3	5.3	3.5
1977	5.7	7.3	2.4	8.6	4.4	17.5	10.7	5.6	7.8	4.3	11.0	8.2	6.6
1978	7.3	4.3	−1.8	7.3	4.6	11.2	12.8	1.0	5.6	2.5	6.7	7.1	4.7
1979	8.6	8.6	−1.3	8.1	2.7	9.6	15.4	1.5	8.3	1.9	−.3	6.7	4.7
1980	11.0	10.9	.8	14.3	8.7	13.7	23.3	6.3	8.9	3.1	10.5	12.4	9.1
Unit labor costs in U.S. dollars:													
1960–80	3.8	4.4	8.0	6.5	9.3	7.7	6.6	7.8	7.9	8.9	7.8	7.6	7.3
1960–73	1.9	1.9	4.9	2.8	6.1	5.4	2.6	4.6	5.0	6.1	4.2	4.2	3.9
1973–80	7.5	6.4	8.3	10.9	11.2	9.6	15.3	10.6	9.3	10.3	11.3	11.4	10.3
1974	13.3	15.8	19.0	7.2	11.5	6.2	18.5	15.5	16.0	13.9	11.5	11.3	13.3
1975	8.8	13.3	10.7	30.3	13.1	34.5	25.8	21.5	14.6	23.8	30.2	22.9	19.7
1976	3.4	12.5	−2.4	−5.3	−1.6	−13.3	−8.5	−3.4	−1.6	−4.8	11.5	−5.1	−3.9
1977	5.7	−.4	13.3	5.5	13.1	10.5	7.0	13.7	8.5	12.3	8.2	9.7	9.8
1978	7.3	−2.8	26.2	17.1	21.0	15.6	24.0	15.1	15.1	16.4	5.6	18.6	19.1
1979	8.6	5.7	−5.7	14.3	12.4	12.0	27.7	8.8	13.4	9.7	5.1	14.5	8.7
1980	11.0	11.1	−2.5	15.3	9.8	10.5	35.1	6.7	1.8	4.2	12.0	14.1	9.6

NOTE. Rates of change computed from the least squares trend of the logarithms of the index numbers.

ularly in France, Germany, and Sweden. In Belgium, Italy, and the United Kingdom, hourly compensation advances as well as productivity slowdowns contributed substantially to the cost acceleration.

In U.S. dollars. When measured in U.S. dollars, with changes in exchange rates taken into account, unit labor costs declined 2.5 percent in Japan in 1980 and increased about 2 to 4 percent in Denmark and the Netherlands; 7 percent in Belgium; 10 to 12 percent in the United States, Canada, Germany, Italy, and Sweden; 15 percent in France; and 35 percent in the United Kingdom.

For the United Kingdom, 1980 was the third year of substantial foreign currency appreciation of the pound. On the other hand, the Danish krona declined more than 6 percent relative to the dollar in 1980 after substantial increases in the previous 2 years. The Japanese and Italian currencies declined about 3 percent relative to the dollar; the other currencies were almost unchanged—up less than 1.5 percent. (In 1981, however, all the foreign currencies have declined against the dollar.)

Exchange rates have fluctuated considerably since 1973, and each foreign currency has undergone one or more large appreciations or declines versus the dollar. The overall effects of the exchange rate movements from 1973 to 1980 have been to add about 5 to 6 percent to the annual unit labor cost increases for Japan, Germany, Belgium, and the Netherlands and 1 to 2 percent for France and Denmark, while offsetting the average annual cost increases of the United Kingdom and Canada by 2 to 3 percent, and of Italy by more than 6 percent. For Sweden, the overall effect of exchange rate changes during the 1973–80 period was negligible.

Exchange rate changes have, to a large extent, offset the substantial differentials in unit labor cost trends among the countries. Consequently, in all countries except the United Kingdom, the underlying trends in unit labor costs measured in U.S. dollars show much less variation from country to country than do unit labor costs in national currency. From 1973 to 1980, unit labor costs measured in U.S. dollars increased about 6 to 8 percent per year in the United States, Canada, and Japan and 9 to 11 percent in the continental European countries, compared with average annual increases (measured in national currencies) that ranged from only 3.4 percent in Japan, around 5 percent in Germany, Belgium, and the Netherlands, and up to 16 percent in Italy.

The United Kingdom, since 1977, has been an exception. From 1973 to 1977, the relative value of the pound fell 29 percent. Consequently, a very large gain of 105 percent in unit labor costs was reduced to 46 percent when measured in U.S. dollars—compared with an increase of 35 percent in the United States. However, from 1977 to 1980, the United Kingdom had larger unit labor cost gains than any of the other countries and the value of the pound rose 33 percent. Consequently, a 61-percent increase in unit labor costs became 114 percent in U.S. dollars—compared with an increase of 29 percent in the United States. During 1973–80, unit labor costs in the United Kingdom rose 17.2 percent per year in pounds and 15.3 percent in U.S. dollars. □

FOOTNOTES

[1] The data relate to all employed persons, including the self employed, in the United States and Canada and to all wage and salary employees in the other countries. Hours refer to hours paid in the United States, hours worked in the other countries.

Compensation includes all payments made by employers directly to their employees (before deductions), plus employer contributions to legally required insurance programs and to contractual and private welfare plans for the benefit of employees. Labor costs include, in addition to compensation, employer expenditures for recruitment and training; the cost of cafeterias, medical facilities, and other plant facilities and services; and taxes (other than social security taxes, which are part of compensation) levied on payrolls or employment rolls. Annual data are not available for total labor costs. Labor costs, as used in this article, approximate more closely the concept of compensation. However, unit labor costs have been adjusted to include all significant changes in taxes that are regarded as labor costs. Hourly compensation—along with the real compensation measures—are not so adjusted in this article. For the United States and Canada, compensation of self-employed workers is measured by assuming that their hourly compensation is equal to the average for wage and salary employees.

[2] To compute the series for the eight European countries and ten foreign countries, the data have been combined by aggregating the output, compensation, and hours figures for each year, adjusting where necessary for compatibility of coverage and concept. Average exchange rates for 1974–80 were used to aggregate the output and compensation data. The use of 1974–80 exchange rates, however, does not imply that these rates reflect the comparative real value of currencies for manufacturing output. Moreover, the use of exchange rates for a different time period would have little effect on the combined series.

[3] This differs from the compound rate of change method used by Arthur Neef and Patricia Capdevielle in "International comparisons of productivity and labor costs," *Monthly Labor Review*, December 1980, pp. 32–39.

[4] For Japan, gross product originating in manufacturing in constant prices, used as the output measure since 1970, was rebased on 1975 constant prices rather than 1970 constant prices. For Denmark, the output, employment, and employee compensation measures (for 1966 through 1977) are now based on their new national accounts statistics. For the United Kingdom, the employment data for 1976–79 are now based on final data from the annual Census of Manufactures. The final data show a greater employment drop, and therefore the productivity decline since 1973 is less severe than that shown in Neef-Capdevielle, "International comparisons."

The 1980 measures for five countries—France, Germany, Italy, the United Kingdom and Sweden—are based in part on preliminary national accounts statistics. For the other six countries, the measures for 1980 are based on current indicators of manufacturing output, employment and hours, and hourly compensation. The estimates based on current indicators, as well as preliminary national account statistics, are subject to revision as more complete information becomes available.

[5] For a comparison of the two real labor income measures for the United States, see Jack Alterman, "Compensation per man-hour and take-home pay," *Monthly Labor Review*, June 1971, pp. 25–34.

[6] For an analysis of the effect on measured inflation of the treatment of owner-occupied housing, weighting, and other factors for the United States, see Jack E. Triplett, "Reconciling the CPI and the PCE Deflator," *Monthly Labor Review*, September 1981, pp. 3–17.

The beginnings of flexitime

Flexitime—the most common of the alternative work patterns—was adopted by European employers as a means of attracting more workers. Not surprisingly, the concept is most widely used in Germany and Switzerland, where labor shortages have been most acute.

Flexitime was born in 1967 at the German aerospace firm of Messerschmidt-Bolkow-Blohm and instituted among 4,000 employees at the corporation's headquarters near Munich. Since then, Austria, Belgium, Britain, Italy, the Netherlands, and the Scandinavian nations have shown significant interest in flexible working hours.

In the United States the concept has grown more slowly, partly because there has been no reason to solicit employees in most areas of the country, partly because legislative and union protections on hours and overtime have acted as restraints.

"Innovations in Working Patterns,"
Transatlantic Perspectives,
January 1981, p. 27

Bargaining calendar will be heavy in 1982

Contracts expire or reopen for 3.6 million workers, including those in auto, rubber, and trucking industries; negotiations will be influenced by economic conditions, with job security likely to be the most vital issue

MARY ANNE ANDREWS AND DAVID SCHLEIN

Collective bargaining in 1982 will be heavy, following a year of light activity. About 3.6 million workers are covered by major agreements expiring or reopening in 1982, compared with approximately 2.6 million in 1981.[1] Except for the automobile and meat products industries, whose agreements expire in September, most talks in key industries will occur before midsummer. Contracts in petroleum refining expire in January; trucking agreements terminate in March; contracts in rubber expire in April; and those in electrical products, in June and July. Contracts in these six industries cover almost 1.2 million workers. A notable change in the 1982 round of bargaining will probably be union attempts, in some of these industries, to restore or retain previous wage and benefit gains.

Attention will also focus on the construction industry, where some 500,000 workers are covered by about 175 major agreements scheduled to expire or be reopened in 1982. In 1981, 225 major agreements, covering 700,000 workers, were renegotiated. Construction employment in September 1981 was down slightly from the level of a year earlier. After rising dramatically from 1979 levels, the unemployment rate in this industry has remained about 16 percent since the end of 1980. The industry has had slight declines in overall activity in the last 2 years. The value of construction put in place decreased significantly in residential housing, whose work force is substantialy unorganized, but increased in the more heavily organized commercial construction field. Large wage increases may be proposed by unions in areas where commercial construction activity continues to be brisk. Average wage increases for the first three quarters of 1981 were 13.9 percent for the first year and 11.4 percent over the life of the agreement, compared to 11.5 percent and 9.3 percent for the total economy.

We do not know, of course, the economic conditions that will exist at the time of the negotiations. But, as the Nation entered the fourth quarter of 1981, the economy was sending out mixed signals. After a robust first quarter, the economy slipped in the second and third quarters. The Gross National Product increased 8.4 percent in real terms in the first quarter, but declined 1.6 percent in the second quarter and rose only 0.6 percent in the third quarter. Interest rates, although dropping from recent record levels, have remained high. Employment displayed solid growth in the first half of the year, but the expansion waned in the third quarter. The unemployment rate, after being fairly stable in the first half of 1981, dropped from 7.6 percent in June to 7 percent in July, but began to increase in August and reached 7.5 percent in September. The Consumer Price Index (CPI), after slowing from a 9.6-percent annual rate in the first quarter of 1981, to 7.4 percent in the second quarter, increased to 13.5 percent in the third quarter.

About 56 percent of the workers covered by agreements with 1982 expirations or scheduled reopeners have cost-of-living adjustment (COLA) clauses. Although there has not been a substantial increase in the prevalence of COLA provisions in major agreements in recent

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years, concern about COLA clauses remains high. Because the majority of COLA provisions do not limit the amount of the wage increase that can result, major contracts that have such clauses and expire in 1982 have, on the average, provided for a substantially larger total wage increase over the life of the agreement than contracts without COLA clauses. The following tabulation shows the average annual wage change (in percent) of the expiring contracts:

	Negotiated change	*Negotiated change plus COLA*
Contracts expiring in 1982 . . .	5.9	8.1
With COLA	4.7	8.8
Without COLA	7.4	—

Petroleum refining

Contracts covering 50,000 employees of the Nation's oil companies[2] expire on January 8, 1982. The Oil, Chemical and Atomic Workers Union (OCAW) represents the bulk of employees affected by negotiations. The remainder are represented by the Operating Engineers, Seafarers, Teamsters, and several local, independent unions. Contract negotiations are conducted locally by individual bargaining units, each of which negotiates a separate agreement that historically follows the lead of the first company to settle. Contracts in the industry generally cover 2 years.

In the last round of negotiations in 1979, a pattern for settlement in the industry was set when Gulf Oil Corp., which set the pattern in the two previous contract negotiations, and the OCAW agreed to a 2-year contract on January 11, 1979. Afterwards, the OCAW quickly negotiated similar accords with other major oil companies. By the end of January, the union had settled for all but 10,000 of the 60,000 employees it represented at 100 petroleum refining and petrochemical companies. The agreements generally provided for 73 cents-per-hour wage increases in 1979, and 5-percent increases in 1980; increased company contributions to hospital insurance; and a January 1980 contract reopener for wages, health benefits, and vacation provisions.

Table 1. Calendar of major collective bargaining activity

[Workers in thousands]

Year and month	Contract expirations[1]		Scheduled wage reopenings		Principal industry and activity
	Number	Workers covered	Number	Workers covered	
All years	1,900	8,987.9	30	115.1	
Total 1982	620	3,579.2	24	78.3	
January	41	95.3	3	4.9	Petroleum refineries
February	17	33.9	—	—	
March	44	557.0	5	15.4	Trucking
April	98	331.6	7	21.7	Construction, rubber
May	124	549.5	2	7.7	Construction, apparel
June	99	454.0	1	3.7	Electrical equipment, food and kindred products, construction
July	53	180.9	2	13.9	Electrical equipment
August	36	135.0	1	2.3	Food production (meatpacking)
September	40	1,004.8	—	—	Automotive, farm and construction equipment, and apparel
October	26	59.6	1	1.4	
November	27	117.3	1	1.1	
December	15	60.2	1	6.2	
Total 1983	725	3,264.3	5	11.8	
January	31	73.8	—	—	Tobacco
February	38	144.8	1	1.8	
March	70	211.8	—	—	Glass, construction
April	104	279.5	—	—	Construction
May	96	364.1	1	4.3	Aluminum, lumber, and construction
June	114	478.0	3	5.7	Construction, copper
July	39	100.1	—	—	
August	98	1,152.9	—	—	Steel, telephone
September	52	174.6	—	—	Longshoring (East and Gulf Coasts)
October	42	175.6	—	—	Aerospace
November	16	31.6	—	—	
December	25	77.4	—	—	
Total 1984	266	972.0	1	25.0	
January-June	233	654.7	1	25.0	Construction, metal containers
July-December	33	317.3	—	—	Bituminous coal
1985 or later	9	47.9	—	—	
Year unknown or in negotiation[2]	280	1,124.5	—	—	

[1] Twelve agreements covering 40,000 workers are excluded because they have no fixed expiration or reopening date.

[2] These include 103 major agreements, covering 273,000 workers, which are due to expire between October 1 and December 31, 1981; and 177 agreements, covering 853,000 workers, which expired prior to October 1, but for which necessary information had not been fully gathered.

NOTE: Only bargaining units in the private nonagricultural economy affecting 1,000 workers or more are considered for this table. Because of rounding, sums of individual items may not equal totals.

When the contract was reopened, an impasse occurred, and the OCAW started a nationwide strike against petroleum refining companies on January 8, 1980. Eleven weeks later, a settlement was reached with Gulf that set the pattern for OCAW settlements with other oil companies.[3] However, the nationwide work stoppage extended until early July, and became the longest strike in the industry's history. At its peak, the strike involved refiners processing about 70 percent of the Nation's petroleum needs, but the companies' white-collar employees continued to maintain operations by working extended schedules.

Although the dispute began over the contract reopener issues, the settlements extended the existing contracts for an additional year (to 1982). The agreements provided for an immediate wage increase of 52 cents per hour, plus a 5-percent increase already scheduled for 1980; a 10.5-percent increase in 1981; increased company contributions to health insurance coverage; establishment of dental plans; and improved vacations for long-term employees.

The current negotiations are scheduled to begin in November 1981. Eight major demands have been set by OCAW's National Oil Bargaining Policy Committee and

Table 2. Major contract expiration and wage reopening dates, by industry

[Workers in thousands]

Industry	Total		Year of contract termination[1]										Scheduled wage reopening			
			1982		1983		1984		1985 or later		Unknown or in negotiation[2]		1982		1983 or later	
	Contracts	Workers covered	Contracts	Workers covered	Contracts	Workers covered	Contracts	Workers covered	Contracts	Workers covered	Contracts	Workers covered	Contracts	Workers covered	Contracts	Workers covered
All industries	1,900	8,987.9	620	3,579.2	725	3,264.3	266	972.0	9	47.9	280	1,124.5	24	78.3	5	11.8
Manufacturing	896	3,897.6	279	2,094.1	358	1,222.6	118	245.7	5	16.3	136	318.9	6	18.1	1	2.8
Food and kindred products	100	306.1	33	161.4	34	73.5	10	15.9	1	8.0	22	47.2	—	—	—	—
Tobacco manufacturing	8	23.4	1	1.1	7	22.3	—	—	—	—	—	—	—	—	—	—
Textile mill products	18	47.1	7	15.2	5	19.5	2	7.5	—	—	4	4.9	2	7.5	—	—
Apparel and other finished products	52	475.1	42	446.4	3	9.0	2	7.4	—	—	5	12.3	—	—	—	—
Lumber and wood products, except furniture	15	66.2	2	4.3	11	59.3	2	2.6	—	—	—	—	1	1.5	—	—
Furniture and fixtures	15	22.7	8	14.0	4	5.8	3	2.9	—	—	—	—	—	—	—	—
Paper and allied products	63	90.6	18	22.3	26	43.8	12	16.8	—	—	7	7.6	—	—	—	—
Printing, publishing and allied industries	30	63.7	6	13.8	8	14.4	4	12.1	1	4.4	11	18.9	—	—	—	—
Chemicals and allied products	31	60.5	7	11.8	12	22.1	4	9.5	—	—	8	17.1	—	—	1	2.8
Petroleum refining and related industries	19	37.8	16	30.8	1	1.5	—	—	—	—	2	5.4	—	—	—	—
Rubber and miscellaneous plastics	15	82.9	12	78.5	3	4.4	—	—	—	—	—	—	1	1.1	—	—
Leather and leather products	14	34.5	2	12.0	5	6.0	5	14.7	—	—	2	1.8	1	1.8	—	—
Stone, clay, glass, and concrete products	36	86.9	4	6.9	18	56.2	10	16.6	—	—	4	7.1	—	—	—	—
Primary metals industries	113	483.0	12	17.7	79	405.5	11	14.2	1	.9	10	44.6	—	—	—	—
Fabricated metal products	55	102.5	11	20.8	18	30.9	10	18.0	1	1.3	15	31.5	—	—	—	—
Machinery, except electrical	85	271.5	22	142.4	37	85.9	14	22.4	1	1.8	11	19.0	—	—	—	—
Electrical machinery, equipment, and supplies	100	439.9	41	255.0	40	147.8	11	15.3	—	—	8	21.8	1	6.2	—	—
Transportation equipment	103	1,150.8	25	811.3	41	202.4	14	65.3	—	—	23	71.8	—	—	—	—
Instruments and related products	13	32.1	4	14.8	4	8.7	2	2.3	—	—	3	6.4	—	—	—	—
Miscellaneous manufacturing industries	11	20.3	6	13.4	2	3.4	2	2.3	—	—	1	1.2	—	—	—	—
Nonmanufacturing	1,004	5,090.3	341	1,485.1	367	2,041.6	148	726.4	4	31.6	144	805.6	18	60.2	4	9.0
Mining, crude petroleum and natural gas production	16	200.6	1	1.3	12	36.6	2	162.0	—	—	1	.7	—	—	—	—
Construction	476	1,540.2	169	452.5	186	751.9	96	272.0	2	4.3	23	59.5	10	35.7	3	4.7
Transportation, except railroads and trucking	66	289.9	13	54.6	22	87.5	7	42.4	—	—	24	105.4	—	—	—	—
Railroads	18	398.5	—	—	—	—	—	—	—	—	18	398.5	—	—	—	—
Trucking	19	473.9	17	470.3	2	3.6	—	—	—	—	—	—	—	—	—	—
Communications	46	756.0	7	21.6	30	709.1	5	17.4	—	—	4	7.8	—	—	1	4.3
Utilities, gas and electric	75	210.0	33	102.1	19	60.4	6	14.7	—	—	17	32.8	4	14.4	—	—
Wholesale trade	22	44.2	10	24.4	7	10.5	1	2.8	—	—	4	6.5	—	—	—	—
Retail trade, except restaurants	145	652.0	50	180.2	58	265.0	18	154.5	—	—	19	52.3	2	5.9	—	—
Restaurants	22	68.3	8	19.8	8	32.4	1	3.0	1	2.3	4	10.8	—	—	—	—
Finance, insurance, and real estate	19	104.9	5	40.4	3	20.4	1	2.5	—	—	10	41.6	—	—	—	—
Services, except hotels and health services	42	128.8	15	49.8	11	34.5	7	13.5	—	—	9	30.9	1	1.0	—	—
Hotels	19	126.9	4	8.8	4	21.1	4	41.5	1	25.0	6	30.5	1	3.2	—	—
Health services	19	96.0	9	59.3	5	8.7	—	—	—	—	5	28.1	—	—	—	—

[1] Twelve agreements covering 40,000 workers are excluded because they have no fixed expiration or reopening date.

[2] These include 103 major agreements, covering 273,000 workers, due to expire between October 1 and December 31, 1981; and 177 agreements, covering 853,000 workers, which expired prior to October 1, but for which necessary information had not been fully gathered.

NOTE: Only bargaining units in the private nonagricultural economy affecting 1,000 workers or more are considered for this table. Because of rounding, sums of individual items may not equal totals.

have been accepted by the rank-and-file. Reportedly, guarantees against layoffs and plant closings head the list of demands. Other proposals include employer contributions to a supplemental pension plan; elimination of employee payments to health plans; a 2-year agreement; "substantial" wage increases; an 11th holiday; improved vacations; and "no retrogression in previous terms and conditions."

Trucking

In November, the International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America (IBT, Ind.) will begin negotiating its 3-year National Master Freight Agreement, which covers approximately 300,000 truck drivers and warehouse workers and expires on March 31, 1982. Employers will be represented by Trucking Management, Inc. (TMI), the industry's main bargaining agent. These will be the first negotiations since the passage of the Motor Carrier Act of 1980[4] and the election of the Teamsters' new president, Roy Williams.[5]

Coupled with approximately 30 local and area supplemental agreements, the Master Freight Agreement regulates the terms and conditions of employment of most unionized drivers and warehouse workers in the industry. Wage increases, cost-of-living adjustments, increases in employer contributions to benefit plans, as well as most other economic benefits and certain working rules are determined in national negotiations. Actual wage rates, most working rules, and allocations to the health and welfare funds are set in the supplemental agreements, as are addenda which provide local exceptions to economic benefits and working rules.

Some drivers in the Midwest, particularly in the Chicago area, do not participate in national bargaining. Seven Teamster locals and the Chicago Truck Drivers, Helpers and Warehouse Workers Union (Ind.) represent approximately 35,000 workers in bargaining with several employer associations. Since 1973, the Chicago area agreements have terminated concurrently with the Master Freight Agreement.

The last round of negotiations (in 1979) was influenced by Federal wage guidelines, which sought to hold average annual wage and benefit increases to 7 percent. The Carter Administration threatened speedy deregulation of the industry if a settlement violated these guidelines, and the Interstate Commerce Commission, which regulates rates in the industry, threatened not to approve trucking rates that would incorporate wage increases in excess of the guidelines. After a 10-day work stoppage, which started as a selective strike against approximately 73 companies and quickly evolved into a national lockout conducted by TMI, a settlement was reached.[6] This was the longest work stoppage in 15 years of national bargaining in the trucking industry.

The 3-year agreement provided hourly wage or equivalent mileage increases of 80 cents in 1979, and 35 cents each in 1980 and 1981; semiannual COLA of 1 cent per hour for each 0.3-point movement in the CPI; increased employer contributions to the pension, and health and welfare funds; and improvements in paid holidays, paid funeral and jury duty leave, meal and lodging allowances, and sick leave.

In the fall of 1980, TMI attempted to reopen the agreement to delay or eliminate COLA increases. Deregulation was blamed, at least in part, for hardship in the industry. The Teamsters refused to bargain nationwide, but granted concessions, with employee approval, to individual companies in hardship cases. Such concessions included flexible starting times, waiving of seniority pay guarantees, and forgoing sick pay and vacations that exceed 3 weeks.

Information on 1982 demands is not yet available. However, negotiations undoubtedly will be influenced by the effects of deregulation and the state of the economy. Trucking tonnage has been static since deregulation began. There have also been a number of consolidations and bankruptcies in recent years, as marginal companies have been hit hard by recession and competition from nonunionized trucking companies. Because of this (according to press reports) the Teamsters may be willing to accept a smaller economic package and may attempt to negotiate a separate contract with short-haul trucking companies, which have been most adversely affected by competition from nonunionized trucking companies, to avoid potential job losses. In return, the union (according to press reports) will probably be asking for concessions relating to job security, subcontracting, and cost-of-living raises, which would be used to maintain health, welfare, and pension benefits. Management has expressed interest in negotiating more flexible work rules (such as those relating to starting and quitting times and weekend work) and reduced pension and health benefits.

Rubber

Major labor contracts between the United Rubber, Cork, Linoleum and Plastic Workers of America (Rubber Workers) and the "Big Four" tiremakers—Goodyear Tire and Rubber Co.; Firestone Tire and Rubber Co.; B. F. Goodrich Co.; and Uniroyal, Inc.—covering nearly 55,000 workers, are up for renewal on April 20, 1982. Contracts with several smaller tire companies expire throughout the year.[7] In the past, bargaining has been conducted separately with each company. The Rubber Workers has selected a "target" from among the "Big Four" for full-scale bargaining. Once an accord has been reached, it has been used as a pattern for subsequent settlements with companies throughout the industry. Uniroyal was selected as the "target" in 1979;

Table 3. Expiration, reopening, and wage adjustment provisions of selected collective bargaining agreements

[Contracts are listed in order of the Standard Industrial Classification Code]

1972 SIC Code	Industry and employer [1]	Union [2]	Employees covered	Contract term and reopening provisions [3]	1982 provisions for automatic cost-of-living review [4]	1982 provisions for deferred wage increases [5]
	Manufacturing					
20	Food and kindred products:					
	California Processors, Inc.	Teamsters (Ind.)	60,000	July 1, 1979 to July 1, 1982	.....	.....
	Frozen Food Employers Association (California) [6]	Teamsters (Ind.)	8,000	July 1, 1979 to June 30, 1982	.....	.....
	George A. Hormel and Co.	Food and Commercial Workers	7,000	Sept. 1, 1979 to Aug. 31, 1982	January and July	.....
	John Morrell & Co.	Food and Commercial Workers	6,500	Sept. 1, 1979 to Sept. 1, 1982	January and July	.....
	Sugar Cos. Negotiating Committee (Hawaii) [6]	Longshoremen and Warehousemen (Ind.)	9,000	Feb. 1, 1980 to Jan. 31, 1983	.....	Feb. 1: 10 percent
	Wilson Foods Corp.	Food and Commercial Workers	6,000	Sept. 1, 1979 to Aug. 31, 1982	May	.....
21	Tobacco manufacturers:					
	Phillip Morris, U.S.A. (Richmond, Va.)	Bakery, Confectionery and Tobacco Workers	7,200	Feb. 1, 1980 to Jan. 31, 1983	January, thereafter quarterly	Feb. 1: 43 cents
22	Textile mill products:					
	Dan River, Inc. (Danville, Va.)	United Textile Workers	7,000	June 22, 1980 to June 21, 1983	.....	.....
	Fieldcrest Mills, Inc. (Virginia and North Carolina)	Clothing and Textile Workers	5,000	Mar. 1, 1981 to Feb. 29, 1984	.....	.....
23	Apparel and other finished products:					
	Clothing Manufacturers Association of U.S.A.	Clothing and Textile Workers	56,000	Oct. 1, 1980 to Mar. 31, 1982	.....	.....
	Cotton Garment Manufacturers [6]	Clothing and Textile Workers	60,000	Sept. 1, 1979 to Aug. 31, 1982	.....	.....
	Fashion Apparel Manufacturers Association	Ladies Garment Workers	8,000	June 1, 1979 to May 31, 1982	.....	.....
	Greater Blouse, Skirt and Undergarment Association, Inc.	Ladies Garment Workers	18,000	June 1, 1979 to May 31, 1982	.....	.....
	Industrial Association of Juvenile Apparel Manufacturers, Inc. (Greater New York City)	Ladies Garment Workers	6,000	June 1, 1979 to May 30, 1982	.....	.....
	New York Coat and Suit Association	Ladies Garment Workers	20,000	May 1, 1979 to May 31, 1982	January and March	.....
24	Lumber and wood products, except furniture:					
	Western States Wood Products Employers Association (Boise-Cascade Corp., Champion International Co., Crown Zellerbach Corp., Georgia-Pacific Corp., International Paper Co., ITT–Rayonier Inc., Louisiana-Pacific Corp., Publishers Paper Co., Simpson Timber Co., and Weyerhauser Co.)	Woodworkers; Lumber Production and Industrial Workers (Ind.)	37,000	June 1, 1980 to May 31, 1983	.....	June 1: 70 cents
26	Paper and allied products:					
	International Paper Co., Southern Kraft Division	Paperworkers and Electrical Workers (IBEW)	8,000	June 1, 1979 to May 31, 1983	.....	June 1: 4 percent to nearest 1/2 cent
30	Rubber and miscellaneous plastic products:					
	B.F. Goodrich Co.	Rubber Workers	9,300	Apr. 21, 1979 to Apr. 20, 1982	January and April	.....
	Firestone Tire and Rubber Co.	Rubber Workers	15,300	Apr. 20, 1979 to Apr. 19, 1982	January and April	.....
	General Motors Corp., Inland Manufacturing Division (Dayton, Ohio)	Rubber Workers	6,900	Sept. 15, 1979 to Sept. 14, 1982	March and June	.....
	Goodyear Tire and Rubber Co.	Rubber Workers	22,300	Apr. 21, 1979 to Apr. 20, 1982	January and April	.....
	Uniroyal, Inc.	Rubber Workers	8,300	June 18, 1979 to Apr. 19, 1982	.....	.....
32	Stone, clay, and glass products:					
	Brockway Glass Co., Inc.	Glass Bottle Blowers	7,150	Apr. 1, 1980 to Mar. 31, 1983	April	Apr. 1: 55 cents
	Owens-Illinois, Inc.	Glass Bottle Blowers	12,400	Apr. 1, 1980 to Mar. 31, 1983	April	Apr. 1: 55 cents
33	Primary metal industries: [6]					
	8 major basic steel companies: Allegheny Ludlum Steel Corp.; Armco Inc.; Bethlehem Steel Corp.; Inland Steel Co.; Jones and Laughlin Steel Corp.; National Steel Corp.; Republic Steel Corp.; United States Steel Corp.	Steelworkers	215,200	Aug. 1, 1980 to Aug. 1, 1983	February, thereafter quarterly	Aug. 1: 15–47 cents
	Aluminum Co. of America	Aluminum Workers	9,150	June 1, 1980 to May 31, 1983	March, thereafter quarterly	June 7: 15–28 cents
	Aluminum Co. of America	Steelworkers	10,000	June 1, 1980 to May 31, 1983	March, thereafter quarterly	June 7: 15–28 cents
	Armco Steel Corp. (Middletown, Ohio)	Armco Employees Independent Federation (Ind.)	6,000	Aug. 1, 1980 to July 31, 1983	February, thereafter quarterly	Aug. 1: 15–47 cents
	Kaiser Aluminum and Chemical Corp.	Steelworkers	11,000	June 1, 1980 to May 31, 1983	March, thereafter quarterly	June 7: 15 cents
	Kaiser Steel Corp., Steel Manufacturing Division (Fontana, Calif.)	Steelworkers	5,550	Aug. 1, 1980 to July 31, 1983	February, thereafter quarterly	Aug. 1: 15–47 cents
	National Steel Corp., Weirton Steel Division (Ohio and West Virginia)	Independent Steelworkers Union (Ind.)	10,000	Aug. 1, 1980 to Aug. 1, 1983	February, thereafter quarterly	Aug. 1: 25 cents
	Reynolds Metals Co.	Steelworkers	8,100	June 2, 1980 to May 31, 1983	March, thereafter quarterly	June 7: 15 cents
	United States Steel Corp., salaried employees	Steelworkers	5,200	Aug. 1, 1980 to Aug. 1, 1983	February, thereafter quarterly	Aug. 1: $12–36 bi-weekly

See footnotes at end of table.

Table 3. Continued—Expiration, reopening, and wage adjustment provisions of selected collective bargaining agreements

[Contracts are listed in order of the Standard Industrial Classification Code]

1972 SIC Code	Industry and employer [1]	Union [2]	Employees covered	Contract term and reopening provisions [3]	1982 provisions for automatic cost-of-living review [4]	1982 provisions for deferred wage increases [5]
34	Fabricated metal products:					
	Continental Group, Inc.	Steelworkers	11,000	Feb. 16, 1981 to Feb. 19, 1984	February	Feb. 15: 15–27 cents
35	Machinery, except electrical:					
	Briggs and Stratton Corp. (Milwaukee, Wis.)	Allied Industrial Workers	7,900	Aug. 1, 1980 to July 31, 1983	February	Aug. 1: 8 percent
	Caterpillar Tractor Co.	Auto Workers	40,000	Oct. 1, 1979 to Sept. 30, 1982	March, thereafter quarterly	.....
	Deere and Co. (Illinois and Iowa)	Auto Workers	31,000	Oct. 20, 1979 to Sept. 30, 1982	March, thereafter quarterly	.....
	International Harvester Co.	Auto Workers	35,000	Oct. 1, 1979 to Sept. 30, 1982	March, thereafter quarterly	.....
	Timken Co. (Columbus and Wooster, Ohio)	Steelworkers	7,800	July 20, 1980 to Aug. 29, 1983	January, thereafter quarterly	Aug. 22: 15–38 cents
36	Electrical machinery, equipment and supplies:					
	General Electric Co.	Electrical Workers (UE, Ind.)	16,400	July 1, 1979 to June 27, 1982	.....	.....
	General Electric Co.	Electrical Workers (IUE)	70,000	July 1, 1979 to June 27, 1982	.....	.....
	General Motors Corp. (New Jersey, New York and Ohio)	Electrical Workers (IUE)	23,450	Sept. 18, 1979 to Sept. 14, 1982	March and June	.....
	GTE Sylvania, Inc. [6]	Multi AFL-CIO unions and Teamsters (Ind.)	9,000	Oct. 6, 1979 to Oct. 5, 1982	March	.....
	Hughes Aircraft Co. (California)	Carpenters	13,000	Dec. 1, 1979 to Dec. 1, 1982	June and September	.....
	RCA Corp.	Electrical Workers (IBEW)	13,000	Dec. 1, 1979 to Dec. 1, 1982	June	.....
	Rockwell International Corp. (Cedar Rapids, Iowa) [6]	Electrical Workers (IBEW)	5,200	Oct. 1, 1980 to Feb. 28, 1983	January and March, thereafter quarterly	Mar. 1: 3 percent
	Western Electric Co. Inc.	Communications Workers	22,650	Aug. 10, 1980 to Aug. 6, 1983	August	Aug. 8: 3 percent
	Westinghouse Electric Corp.	Electrical Workers (UE, Ind.)	5,500	Sept. 4, 1979 to July 11, 1982	January	.....
	Westinghouse Electric Corp.	Electrical Workers (IUE)	18,000	July 16, 1979 to July 11, 1982	January	.....
	Westinghouse Electric Corp.	Federation of Westinghouse Independent Salaried Unions (Ind.)	11,250	July 16, 1979 to July 26, 1982	January	.....
371	Transportation equipment—motor vehicle and motor vehicle equipment:					
	American Motors Corp. (Wisconsin)	Auto Workers	8,300	Sept. 17, 1980 to Sept. 16, 1983	March, thereafter quarterly	Sept. 20: 25–41 cents
	American Motors Corp., Jeep Corp. (Ohio)	Auto Workers	5,750	Jan. 1, 1980 to Jan 31, 1983	.....	Feb. 1: 3 percent
	Budd Co. (P&M)	Auto Workers	9,000	Feb. 2, 1980 to Mar. 4, 1983	March, thereafter quarterly	Apr. 27: 21–40 cents
	Chrysler Corp., Engineering Dept.	Auto Workers	5,400	Oct. 25, 1979 to Sept. 14, 1982	March and June	.....
	Chrysler Corp. (P&M)	Auto Workers	64,000	Sept. 17, 1979 to Sept. 14, 1982	March, thereafter quarterly	.....
	Dana Corp.	Auto Workers	7,500	Dec. 3, 1979 to Dec. 5, 1982	March, thereafter quarterly	.....
	Ford Motor Corp.	Auto Workers	158,000	Oct. 4, 1979 to Sept. 14, 1982	March and June	.....
	General Motors Corp.	Auto Workers	400,000	Sept. 17, 1979 to Sept. 14, 1982	March and June	.....
	Mack Truck, Inc.	Auto Workers	6,250	Oct. 22, 1979 to Oct. 20, 1982	March, thereafter quarterly	.....
372	Transportation equipment—aircraft:					
	Bendix Corp.	Auto Workers	6,100	Apr. 30, 1980 to Apr. 29, 1983	January, thereafter quarterly	May 3: 3 percent
	Lockheed Aircraft Corp., Lockheed-California Division	Machinists	14,000	Oct. 20, 1980 to Oct. 1, 1983	January, thereafter quarterly	Oct. 2: $1.38 per hour
	McDonnell Douglas Corp. (California and Oklahoma)	Auto Workers	10,000	Oct. 17, 1980 to Oct. 9, 1983	January, thereafter quarterly	.....
	McDonnell-Douglas Corp. (St. Louis, Mo.) [6]	Machinists	9,000	May 11, 1981 to May 13, 1984	February	May 5: 3 percent
	United Technologies Corp., Pratt Whitney Aircraft Division (Connecticut)	Machinists	9,700	Nov. 28, 1978 to Nov. 28, 1982	.....	.....
373	Transportation equipment—shipbuilding:					
	General Dynamics Corp., Electric Boat Division (Groton, Conn.)	Metal Trades Council and Teamsters (Ind.)	12,750	July 1, 1979 to June 30, 1982	.....	.....
	Litton Systems, Inc., Ingalls Shipbuilding Division (Pascagoula, Miss.)	Metal Trades Council and Teamsters (Ind.)	6,400	Feb. 1, 1981 to Jan. 29, 1984	January	.....
	Newport News Shipbuilding and Drydock Co. (Virginia)	Steelworkers	17,000	Mar. 31, 1980 to Oct. 31, 1983	.....	Mar. 1: 10 cents, Oct. 4: 50 cents
	Pacific Coast Shipbuilding and Ship Repair Firms	Pacific Coast Metal Trades Dept. and Teamsters (Ind.)	35,000	July 1, 1980 to June 29, 1983	February, thereafter quarterly	July 1: 40 cents
38	Professional, scientific and controlling instruments; photographic and optical goods; watches and clocks:					
	Honeywell, Inc. (Minneapolis and St. Paul, Minn.)	Teamsters (Ind.)	8,000	Feb. 1, 1980 to Jan. 31, 1982	.....	.....
39	Miscellaneous manufacturing:					
	National Association of Doll Manufacturers, Inc. and Stuffed Toy Manufacturers Association, Inc. (New York, N.Y.)	Novelty and Production Workers	7,500	July 1, 1979 to June 30, 1982	.....	.....

See footnotes at end of table.

Table 3. Continued—Expiration, reopening, and wage adjustment provisions of selected collective bargaining agreements

[Contracts are listed in order of the Standard Industrial Classification Code]

1972 SIC Code	Industry and employer [1]	Union [2]	Employees covered	Contract term and reopening provisions [3]	1982 provisions for automatic cost-of-living review [4]	1982 provisions for deferred wage increases [5]
	Nonmanufacturing					
12	Bituminous coal and lignite mining:					
	Association of Bituminous Contractors, Inc.	Mine Workers (Ind.)	12,000	June 7, 1981 to Sept. 30, 1984	June, thereafter quarterly	June: 50 cents
	Bituminous Coal Operators Association[6]	Mine Workers (Ind.)	160,000	July 1, 1981 to Oct. 1, 1984	June	June: 50 cents
42	Trucking and warehousing:					
	Local Cartage, for Hire, and Private carriers agreement (Chicago, Ill.)	Chicago Truck Drivers (Ind.)	7,700	Apr. 1, 1979 to Mar. 31, 1982	.....	.....
	National Master Freight agreements and supplements:[6]					
	Local Cartage	Teamsters (Ind.)	200,000	Apr. 1, 1979 to Mar. 31, 1982	.....	.....
	Over-the-road	Teamsters (Ind.)	100,000	Apr. 1, 1979 to Mar. 31, 1982	.....	.....
	United Parcel Service	Teamsters (Ind.)	73,000	May 1, 1979 to Apr. 30, 1982	.....	.....
44	Water transportation:[6]					
	Dry Cargo Cos., Atlantic and Gulf coasts	Masters, Mates and Pilots	5,000	June 16, 1981 to June 15, 1984	.....	.....
	Dry Cargo Cos., Tankers, Atlantic and Gulf coasts	Maritime Union	15,000	June 16, 1981 to June 15, 1984	December	June 16: 7.5 percent
	New York Shipping Association, Port of New York	Longshoremen (ILA)	10,200	Oct. 1, 1980 to Sept. 30, 1983	.....	Oct. 1: $1.20 per hour
	Pacific Maritime Association	Longshoremen and Warehousemen (Ind.)	11,000	July 1, 1981 to July 1, 1984	.....	July 3: $1.462 average
	Standard Freightship Agreement, Unlicensed personnel	Seafarers	10,750	June 16, 1981 to June 15, 1984	December	June 16: 7.5 percent
	Standard Tanker Agreement, Unlicensed personnel	Seafarers	10,750	June 16, 1981 to June 15, 1984	December	June 16: 7.5 percent
	Steamship Trade Association of Baltimore, Inc., Port of Baltimore	Longshoremen (ILA)	5,000	Oct. 1, 1980 to Sept. 30, 1983	.....	Oct. 1: $1.20 per hour
45	Airlines:[6]					
	United Airlines, Inc., flight attendants	Air Line Pilots	9,100	Apr. 1, 1980 to Mar. 31, 1982	.....	.....
48	Communications:					
	American Telephone and Telegraph Co., Long lines dept.	Communications Workers	23,300	Aug. 10, 1980 to Aug. 6, 1983	August	Aug. 8: 3 percent
	Bell Telephone Co. of Pennsylvania	Federation of Telephone Workers of Pennsylvania (Ind.)	11,950	Aug. 10, 1980 to Aug. 6, 1983	August	Aug. 8: 3 percent
	General Telephone Co. of California	Communications Workers	20,500	Mar. 5, 1980 to Mar. 4, 1983	.....	Mar.: 3 percent
	Illinois Bell Telephone Co. (Illinois and Indiana)	Communications Workers	5,500	Aug. 10, 1980 to Aug. 6, 1983	August	Aug. 8: 3 percent
	Illinois Bell Telephone Co. (Illinois and Indiana)	Electrical Workers (IBEW)	13,800	Aug. 10, 1980 to Aug. 6, 1983	August	Aug. 8: 3 percent
	Michigan Bell Telephone Co.	Communications Workers	20,000	Aug. 10, 1980 to Aug. 6, 1983	August	Aug. 8: 3 percent
	Mountain State Telephone and Telegraph Co.	Communications Workers	29,200	Aug. 10, 1980 to Aug. 6, 1983	August	Aug. 8: 50 cents to $14.00
	New England Telephone and Telegraph Co.	Electrical Workers (IBEW)	16,000	Aug. 10, 1980 to Aug. 6, 1983	May	Aug. 8: $1.43 to $2.45
	New England Telephone Co.	Electrical Workers (IBEW)	6,300	Aug. 10, 1980 to Aug. 6, 1983	May	Aug. 8: 50 cents
	New Jersey Bell Telephone Co.	Electrical Workers (IBEW)	11,450	Aug. 10, 1980 to Aug. 6, 1983	August	Aug. 8: 50 cents to $14.00 weekly
	Southwestern Bell Telephone Co.	Communications Workers	88,000	Aug. 10, 1980 to Aug. 6, 1983	August	Aug. 8: 50 cents
	Western Electric Co., Inc.	Communications Workers	14,750	Aug. 10, 1980 to Aug. 6, 1983	August	Aug. 8: 18–19 cents
	Western Electric Co., Inc.	Communications Workers	14,000	Aug. 10, 1980 to Aug. 6, 1983	August	Aug. 8: 2–38 cents per hour
	Western Union Telegraph Co.	Telegraph Workers	9,500	July 28, 1979 to July 27, 1982	.....	.....
	Wisconsin Telephone Co.	Communications Workers	6,250	Aug. 10, 1980 to Aug. 6, 1983	August	Aug. 8: 50 cents to $13.00 weekly
49	Electric, gas, and sanitary services:					
	Niagara Mohawk Power Corp. (New York)	Electrical Workers (IBEW)	7,500	June 1, 1980 to May 31, 1982	.....	.....
	Pacific Gas and Electric Co. (California)	Electrical Workers (IBEW)	13,850	Jan. 1, 1980 to Dec. 30, 1982	.....	Jan 1: 3 percent
53	Retail trade—general merchandise:					
	R. H. Macy and Co., Inc. (New York, N.Y.)	Retail, Wholesale and Department Store	7,000	Feb. 1, 1980 to Jan. 30, 1982	.....	.....
	Woodward and Lothrop, Inc. (Maryland, D.C. and Virginia)	Food and Commercial Workers	6,000	July 1, 1979 to June 30, 1982	.....	Feb. 7: 8 percent
54	Retail trade—food stores:					
	Chain and independent food stores (Illinois and Indiana)[6]	Food and Commercial Workers	10,000	Aug. 8: 1979 to Sept. 7, 1982	.....	.....
	Chicago area grocery stores (illinois)	Food and Commercial Workers	7,000	July 1, 1979 to June 26, 1982	.....	.....
	Cleveland Food Industries Committee (Ohio)	Food and Commercial Workers	8,400	Sept. 1, 1980 to Sept. 3, 1983	March	Sept. 6: 40 cents
	Denver retail grocers (Colorado)	Food and Commercial Workers	9,300	May 26, 1979 to May 5, 1982	.....	.....
	Food Employers Council, Inc.					
	Retail meat industry and independent retail operators (Los Angeles, Calif.)	Food and Commerical Workers	6,500	Nov. 5, 1979 to Nov. 4, 1982	May	.....
	Food Employers Labor Relations Association of Northern California[6]	Food and Commercial Workers	17,000	Mar. 5, 1980 to Mar. 5, 1983	.....	Mar. 5: 58 cents

See footnotes at end of table.

Table 3. Continued—Expiration, reopening, and wage adjustment provisions of selected collective bargaining agreements

[Contracts are listed in order of the Standard Industrial Classification Code]

1972 SIC Code	Industry and employer [1]	Union [2]	Employees covered	Contract term and reopening provisions [3]	1982 provisions for automatic cost-of living review [4]	1982 provisions for deferred wage increases [5]
54	Retail trade—food stores: (Continued)					
	Food Industry Agreement (St. Louis, Mo.)	Food and Commercial Workers	8,500	May 6, 1979 to May 7, 1982	.....	.....
	Food Market Agreement of Minneapolis (Minnesota)	Food and Commercial Workers	7,200	Mar. 3, 1980 to Feb. 25, 1983	.....	Feb. 25: 11 percent
	Jewel Cos., Inc., Jewel Food Division (Illinois and Indiana)	United Retail Workers Union (Ind.)	14,000	Sept. 23, 1979 to Sept. 18, 1982	.....	.....
	Philadelphia Food Stores (Pennsylvania, New Jersey and Delaware)	Food and Commercial Workers	5,000	Mar. 9, 1980 to Mar. 5, 1983	September	Mar. 1: 45 cents
	Retail Food Store Agreement (San Jose, Calif.)	Food and Commercial Workers	6,800	Jan. 1, 1980 to Feb. 28, 1983	February, thereafter quarterly	.....
	Stop and Shop Cos., Inc. (New England)	Food and Commercial Workers	8,000	Feb. 11, 1979 to Feb. 13, 1982	.....	.....
58	Retail trade—eating and drinking places:					
	Restaurant-Hotel Employers Council of Southern California	Hotel and Restaurant Employees	10,000	Mar. 16, 1979 to Mar. 15, 1983	.....	.....
65	Finance, insurance, and real estate:					
	Bronx Realty Advisory Board, Inc. (New York)	Service Employees	11,000	Sept. 15, 1979 to Sept. 14, 1982	.....	.....
	Building Managers Association of Chicago[6]	Service Employees	12,500	Apr. 1, 1980 to Mar. 31, 1982	.....	.....
	Realty Advisory Board of Labor Relations, Inc., Apartment Buildings (New York, N.Y.)	Service Employees	20,000	April 21, 1979 to April 20, 1982	.....	.....
70	Hotels, rooming houses, camps, and other lodging places:					
	Hotel Association of New York City, Inc. (New York)[6]	New York Hotel Trade Council	22,500	June 1, 1978 to May 31, 1985	.....	June 1: $17.20–25.00 per week
	Hotel Employers Association of San Francisco (California)	Hotel and Restaurant Employees	6,000	July 1, 1980 to Aug. 14, 1983	.....	Aug. 14: 8 percent
	Hotel Industry (Hawaii)					
	Nevada Resort Association, Resort Hotels (Las Vegas, Nev.)	Hotel and Restaurant Employees	10,000	June 1, 1977 to May 31, 1982	.....	.....
		Hotel and Restaurant Employees	15,000	Apr. 2, 1980 to Apr. 1, 1984	.....	Apr. 2: 35–70 cents
78	Motion pictures: Screen Actors Guild, Commercials Contract	Actors	39,000	Feb. 7, 1979 to Feb. 6, 1982	.....	Jan. 1: 15 percent
80	Medical and other health services: Kaiser-Permanente Medical Program of Southern California (Los Angeles and Orange Counties, Calif.)	Service Employees	9,000	Apr. 1, 1980 to Mar. 31, 1982	.....	.....

[1] Geographical coverage of contracts is interstate unless specified.

[2] Unions are affiliated with AFL-CIO, except where noted as independent (Ind.).

[3] Contract term refers to the date contract is to go into effect, not the date of signing. Where a contract has been amended or modified and the original termination date extended, the effective date of the changes becomes the new effective date of the agreement. For purposes of this listing, the expiration is the formal termination date established by the agreement. In general, it is the earliest date on which termination of the contract could be effective, except for special provisions for termination as in the case of disagreement arising out of wage reopening. Many agreements provide for automatic renewal at the expiration date unless notice of termination is given.

[4] Dates shown indicate the month in which adjustment is to be made, not the month of the Consumer Price Index on which adjustment is based.

[5] Hourly rate increase unless otherwise specified.

[6] Contract is not on file with the Bureau of Labor Statistics; information is based on newspaper accounts.

SOURCE: Contracts on file with the Bureau of Labor Statistics, Oct. 1, 1981. Where no contracts are on file, table entries are based on newspaper accounts.

Goodyear, in 1976.

In the last round of bargaining, the Rubber Workers first attempted to reach an agreement with Uniroyal, but an impasse occurred and a strike began on May 9, 1979. The union then turned its attention to Goodrich. After 3 days of marathon negotiations, Goodrich and the union signed a contract that also set the pattern for employees at Uniroyal and Firestone.[8] The 3-year agreements provided 72 cents per hour wage increases spread over the life of the contract, plus an additional 40 cents for skilled trades workers; quarterly COLA adjustments set at 1 cent per hour for each 0.3-point movement in the CPI in the first year, and 1 cent for each 0.26-point movement in the second and third years; improved holiday, life insurance, medical, and pension benefits; 6 months' advance notice of plant closings, with the union having the right to bargain on such decisions; and company pledges to remain neutral in the union's efforts to organize new tire plants. The union continued negotiations with Goodyear, the last major holdout, and reached agreement in July, 1 day before a strike deadline. The settlement generally followed the pattern set by Goodrich, Uniroyal, and Firestone. Goodyear, however, refused to sign a neutrality pledge, but did establish an optical insurance plan.

The domestic tire and rubber industry, like several other strategic manufacturing industries, has had problems in recent years. Sales have lagged over the last 3 years as a result of increased use of longer-wearing radial tires, the auto industry slump, rising gasoline prices, and high interest rates. Also foreign competitors, such as France's Michelin Tire Co. and Japan's Bridgestone Tire Co., have steadily made headway in the U.S. tire market.[9]

Since 1978, domestic tiremakers have slashed production capacity by 23 percent, largely by permanently closing 18 outmoded facilities. Since the last round of negotiations, between 10,000 and 12,000 Rubber Workers have lost their jobs because of plant closings and 40,000 have been temporarily laid off because of declining sales. Responding to these cuts, the union has granted a number of wage-and-benefit and work-rule concessions to forestall plant closings.

The union's bargaining goals are still being formulated. However, job security, continuation of the cost-of-living adjustment formula, and pension rules are expected to be key objectives.[10]

Electrical machinery, equipment, and supplies

Agreements covering about 250,000 workers are scheduled to expire in the electrical machinery, equipment, and supplies industry. Key negotiations occur at General Electric Co. (GE) in June, covering 107,000 employees, and at Westinghouse Electric Corp. in July, covering 50,500 employees. Other negotiations involving large bargaining units in the industry in 1982 include GM, 23,450 employees; Radio Corporation of America, 13,000; Hughes Aircraft Co., 13,000; General Telephone and Electronics (Sylvania), 9,000; and Allen-Bradley Co., 4,800.

As in the past, bargaining will be conducted at GE and Westinghouse by the Coordinated Bargaining Committee of General Electric and Westinghouse Unions, which now represents 13 labor organizations.[11] Under the committee agreement, each union negotiates a separate contract containing similar terms for each bargaining unit. Contract negotiations usually start at GE. In the past, the settlements at GE have influenced the terms of subsequent accords in the industry.

Terms at some companies, however, will probably be more like contracts in other industries than those in electrical machinery. The agreement between GM and the International Union of Electrical, Radio and Machine Workers (IUE) has much in common with auto workers' contracts. Similarly, the International Brotherhood of Electrical Workers (IBEW) and the Communications Workers of America sometimes use telephone industry settlements as their model.[12]

In the last contract negotiations, GE settled with the IUE and the United Electrical, Radio, and Machine Workers of America (UE) on July 2, 1979. The 3-year contracts provided for 44.5 cents per hour wage increases over the term of the contract; a 38 cent an hour cost-of-living increase, plus future semiannual COLA adjustments of 1 cent per hour for each 0.2-point rise in the CPI; a company-financed dental plan covering employees and their dependents; and improved sickness and accident, medical, life insurance, and pension benefits. By the end of the month, GE had also settled on similar terms with the 11 other unions of the Coordinated Bargaining Committee.

The Westinghouse settlements were similar to those accepted at GE. The Federation of Westinghouse Independent Salaried Unions settled first, on July 24, 1979. The Federation agreed to change the fully employer-financed pension plan to one that was partially paid for by employees. Unlike the Federation, the three other major unions struck on July 16, 1979, because of the company's demand that employees begin to make contributions to the pension plans. The IBEW settled on August 19, and the IUE and UE, on September 4, on the same economic terms as those at GE. As a compromise to reach agreement, Westinghouse dropped its proposal for contributory pensions, and the unions accepted a slight decrease in the pension benefits they had been demanding. The settlements also included improved job protection provisions for workers adversely affected by plant shutdowns, relocations, or production "cutbacks."

The electrical products industry has problems that could affect negotiations. Foreign competition has beset it for some time. In some instances, foreign competitors, such as Sanyo, Matsushita, and Sharp, have built plants in the United States. Another problem is government-mandated energy-efficiency standards for appliances, which tend to increase manufacturing costs. In addition, the general scaling-back of utility usage due to energy conservation measures, and rising prices of electricity and resultant curtailing of generating plant capacity have reduced sales of heavy duty generators and transmission equipment. The slump in the new housing market, which accounts for about one-third of the unit sales of major appliances in a normal year, has hurt demand for major appliances. These problems have begun to take their toll in layoffs because of sales declines. For example, in October 1981, GE temporarily laid off all its 15,800 production workers at its Appliance Park facilities in Louisville, Ky.

Negotiations between the Coordinated Bargaining Committee and GE and Westinghouse were to begin in November 1981. Although final union demands have not been announced, union sources indicate that a major demand in 1982 will include protection against automation and high technology (particularly the introduction of robots and computers), wage increases, and improved COLA benefits. Other likely proposals deal with neutrality pledges, subcontracting, COLA and medical insurance plans for retirees, union security, and employee contributions to pension plans.

Meat products industry

Approximately 50,000 employees in the meat products industry are covered by agreements scheduled to expire on August 31. All of the major old-line, unionized meatpacking firms—Armour and Co., George A.

Hormel and Co., Swift and Co., John Morrell and Co., and Wilson and Co.—as well as several smaller companies,[13] will be involved in the negotiations. The United Food and Commercial Workers International Union (UFCW)[14] represents about 90 percent of organized workers in the industry. The remaining employees are represented by two independent unions—The National Brotherhood of Packinghouse and Industrial Workers and the Teamsters.

Contracts are negotiated with individual companies either on a single plant or company-wide basis. Larger packers, such as Armour, Morrell, Swift, and Wilson, negotiate master agreements. One firm usually signs a pattern-setting agreement, after which similar contracts are negotiated by the others.[15] Variations in contract terms often occur because of differences in plant locations or company practices.

In the last round of negotiations, Morrell settled with the UFCW in July 1979, more than a month in advance of the August 31 expiration date. The 3-year contract called for wage increases of 15 cents an hour in the first year, 20 cents in the second, and 25 cents in the third; semiannual COLA adjustments of 1 cent for each 0.3-point rise in the CPI; and improved vacation, dental, optical, and pension benefits. The agreement set a pattern for 28,000 workers at Swift, Hormel, Armour, and Cudahy. After a 4-week strike, Oscar Mayer followed the pattern in contracts with the UFCW for 4,000 employees in Iowa and Wisconsin.

Long-established packing companies have been faced with many problems since the 1960's. The meatpacking industry is characterized by relatively wide fluctuations in meat production and prices, with consequent changes in sales volume. Profit per unit of output tends to be low, so that packing companies must rely on high sales volume and careful cost management to be successful. In addition, there is keen competition and technological change. In recent years, relatively new and aggressive firms, such as Iowa Beef Processors, Inc., have taken over an increasing share of the market for beef with new, highly automated plants and new marketing techniques. The old-line meat packers have suffered declining volume and profits and have been forced to close many of their older, less efficient plants. Some older companies have responded by placing greater emphasis on more highly processed meat products and on brand names.

The union's bargaining goals are still being formulated. However, because of technological changes, mergers, and plant closings in recent years, job security issues are likely to loom as important items of discussion.

Automobiles

Master agreements between the International Union, United Automobile, Aerospace and Agricultural Implement Workers of America (UAW) and the "Big Three" auto manufacturing companies—General Motors Corp. (GM), Ford Motor Co., and Chrysler Corp.—are up for renewal on September 14, 1982. Approximately 550,000 actively employed auto workers will be involved, 380,000 at GM, 112,000 at Ford, and 56,000 at Chrysler.[16] UAW contracts at American Motors Corp., covering 9,500 workers, do not expire until September 1983.

The UAW bargains individually with each of the major firms. In the past, the union has picked a target company shortly before the contracts expired and directed its primary efforts at reaching an agreement with that firm. The major terms of the agreement would then be offered to the other companies. The target firm varies depending upon the union's perception of its position and that of the auto companies. In 1979, GM was the target; in 1976, Ford; and in 1973, Chrysler.

In 1979, the last round of negotiations, the Auto Workers settled with GM only hours before a strike deadline.[17] The 3-year agreement provided increased benefits for current and future retirees; an immediate wage increase of 24 cents per hour; and wage increases of 3 percent each in 1979, 1980, and 1981. Quarterly COLA adjustments were to be 1 cent per hour for each 0.3-point increase in the CPI for the first and second year, and 1 cent per hour for each 0.26-point movement in the third year, with a 14-cent diversion of COLA payment to help defray the cost of improvements in benefits. A stock ownership plan was initiated, similar to that for salaried employees. Other provisions included increased employer contributions to the supplemental unemployment benefit fund; transfer rights, with full seniority, to new plants manufacturing items similar to those in plants represented by the union; and improved holiday, dental, optical, medical, and life insurance benefits.

The agreement set a pattern for auto workers at Ford, but not at financially beleaguered Chrysler, with which the Auto Workers agreed, in October 1979, to a wage-and-benefit package that was $203 million less than the GM settlement pattern would have provided. In exchange, Chrysler nominated union President Douglas Fraser for a seat on its board of directors. In January of both 1980 and 1981, the union agreed to further pay and benefit cuts totaling $865 million to help Chrysler meet the requirements of new Federal loan guarantee legislation.

The industry is currently restructuring to produce the smaller, more fuel-efficient cars now in demand. As it does, plants are being closed, workers are being laid off, and some production is being moved abroad. Even with these changes, the industry faces huge challenges—foreign competition, high interest rates, a sluggish economy, costly government safety and environmental

regulations, and financial problems. According to industry figures, 1980 was the weakest sales year for American automakers in the domestic market in almost 20 years, and the industry lost $4 billion. With annual sales only slightly improved over last year, Chrysler reported a $287 million loss for first half of 1981; Ford, a $379 million loss; and GM, a profit of $705 million.

Given the industry's problems, there probably will be a major change in the focus of negotiations. The Auto Workers has already requested an early start to negotiations and has shown an interest in job and income guarantees, protection against contracting out of jobs, profit-sharing, and stock ownership arrangements. GM and Ford are reportedly considering offering profit-sharing plans as a substitute for cost-of-living adjustment provisions and are talking about substantial changes in the industry's wage structure and cuts in labor costs. Ford is studying employment-guarantee alternatives, while Chrysler is mulling over a modified cost-of-living plan. All three companies are considering tougher rules on absenteeism and "overmanning," as well as relaxing "restrictive" work rules. □

FOOTNOTES

[1] Major agreements are those that cover 1,000 workers or more.

[2] Major oil companies are Gulf, Cities Service, Texaco, Mobil, Union Oil of California, Phillips Petroleum, Standard Oil of California (Chevron), British Petroleum, Standard Oil of Ohio (Sohio), Standard Oil of Indiana (Amoco), Atlantic Richfield, Shell Oil, Sun Oil, Tenneco, Exxon, Conoco, Occidental, Getty, Marathon, Ashland, Amerada Hess, and Charter.

[3] Twelve small oil refineries, employing about 1,700 workers, had settled with OCAW by mid-February, but the union continued to strike against the major oil companies and other small refineries. The Gulf accord quickly provided a basis for settlement for all major oil refining companies except Chevron, which resisted meeting the pattern.

[4] The act seeks to reduce regulation of the trucking industry by making it easier to be certified to operate a route, by allowing owner-operators to haul certain freight that was previously denied to them, and by eventually ending collective rate making.

[5] Williams succeeded Frank Fitzsimmons, who died in May 1981.

[6] About 15,000 steel-haulers continued striking, with the last of the strikers returning to work on May 7, 1979. The steel-haulers won a return to the pre-1976 pay system, under which owner-operators received a flat percentage of the entire amount their employer received for hauling a load. They also won pay for six days of sick leave. They did not, however, win their demand for a separate, binding vote on their supplemental agreement.

[7] URW contracts, covering about 11,000 workers, at the General Tire and Rubber Co., Kelly-Springfield Tire Co., Gates Rubber Co., Dunlop Tire and Rubber Co., Cooper Tire and Rubber Co., and Armstrong Rubber Co., expire in 1982.

[8] In February of 1979, Firestone and the URW had signed a no-strike, no-lockout agreement that obligated Firestone to accept the URW designated industry settlement if the parties failed to reach an accord on their own.

[9] Foreign penetration of U.S. markets has not necessarily been through imports. Michelin, for example, established tire plants in Greenville and Anderson, South Carolina in 1975.

[10] A change of union leadership could be a factor in the negotiations. URW president Peter C. Bommarito, who has held the reins since 1966, did not seek reelection at the union's October 1981 convention.

[11] The Coordinating Bargaining Committee was established in 1966 to strengthen the negotiations in the industry. The Committee includes 11 AFL–CIO affiliated unions—International Union, Allied Industrial Workers of America; United Brotherhood of Carpenters and Joiners of America; International Union of Electrical, Radio and Machine Workers; International Brotherhood of Electrical Workers; International Brotherhood of Firemen and Oilers; American Flint Glass Workers' Union of North America; International Association of Machinists and Aerospace Workers; United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States and Canada; Sheet Metal Workers' International Association; International Union, United Automobile, Aerospace and Agricultural Implement Workers of America; and United Steelworkers of America—and 2 independent unions—the International Union, United Electrical, Radio, and Machine Workers of America; and the International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America.

[12] The CWA and IBEW agreements with Western Electric do not expire until 1983.

[13] Rath Packing Co., Oscar Mayer and Co., Cudahy Co., Dubuque Packing Co., and Hygrade Food Products.

[14] The UFCW was created in June 1979 by a merger of the Amalgamated Meat Cutters and Butcher Workmen of North America and the Retail Clerks International Union.

[15] Morrell set the pattern in 1979, and Wilson signed the pattern-setting agreement in 1976. Before that Armour or Swift usually set the pattern.

[16] As of August 1981, an additional 107,000 employees were on indefinite layoff at these three companies.

[17] This was the first time industry bargaining was settled without a strike against the target company since 1964, and the first industry bargaining without a strike against any major producer since 1953.

The unemployment insurance system: its financial structure

Since the early 1970's, there has been a departure from the past exclusive reliance on employer taxes to pay for benefits; a built-up Federal role and the advent of new benefit programs have replaced it

ARTHUR PADILLA

The current Federal-State system of unemployment insurance (UI) traces its origins to the Social Security Act and related laws of 1935. The clear expectation of the Congress and of President Roosevelt was that this legislation would lead to the creation of State UI programs broadly compatible with Federal law. This anticipation was based in part on the economic incentives inherent in the act, whereby employers who paid taxes to a Federally approved State UI program would be exempt from most of the Federal unemployment payroll tax.[1]

Today there are UI programs in the 50 States, the District of Columbia, Puerto Rico, and the Virgin Islands, each providing compensation in accordance with its own benefit standards.[2] These 53 systems cover 90 percent of all employers and 95 percent of all wage and salary employers. To fund the programs, States tax employers at rates which reflect, to varying degrees, the employer's record in laying off workers. Employers with relatively favorable histories in worker layoffs will therefore pay lower payroll taxes than other firms.

Over the years, the financing of regular UI benefits has been based on the concept of individual employer responsibility for the insurance costs of unemployment. In an important sense, the costs of unemployment benefits have been treated for nearly half a century as another expense of doing business.

Employers absorb fewer costs

Since the early 1970's, the UI system has depended less and less on State employer taxes to pay for benefits, thus weakening the relation between previous work and earnings on the one hand and insurance benefits on the other. The initiation of the extended benefits program in 1970 and of the Federal supplemental benefits program in 1974 signaled the beginning of a significant Federal role. These nonregular programs, which basically extend the time during which benefits may be collected, have resulted in larger costs and have required the imposition of higher taxes and tax rates on employers. A substantial part of the Federal employer tax is set aside to pay for half of the costs of the extended benefits program; States pay for the other half from their own payroll taxes. General U.S. Treasury revenues, as well as the Federal payroll tax, financed the now-expired supplemental benefits program during its 4-year duration.[3]

Beyond its increasingly important position in financing extensions of unemployment benefits, the Federal Government performs another related role. When a State's UI reserves are depleted (either because the level of benefits it awards is too high in relation to its tax receipts or because it has endured relatively steep unemployment rates over time), that State may borrow

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interest-free Federal funds to meet its benefit obligations.

The 1974–75 recession, longest since World War II and following closely the severe recession of 1970, painfully underscored the financial weaknesses of many State UI programs. About half of the State systems exhausted their reserves and were forced to take interest-free advances as a direct result of the mid–1970's downturn and, as of March 1981, 17 States continued to owe nearly $6 billion in outstanding loans.[4] In addition to this *State* debt, the expansion of nonregular benefits (extended benefits, supplemental benefits, and other programs) during the 1970's resulted in a large *Federal* debt, still outstanding. The Federal share of the debt in the extended benefits program is currently about $1.8 billion, and an additional $5.8 billion is due the Treasury for costs of the supplemental benefits program.

The following section describes, in general terms, the complex financial structure of the UI program. It will serve as a preface to later discussions about problems of the State trust funds, the pursuant debts of many States, and other immediate and longer-term issues.

Current financial conditions

The existing financial structure of the UI system is extremely complicated. Employer taxes as well as general U.S. Treasury revenues flow through a perplexing maze of trust funds and special accounts to pay for loans to States, regular benefits, extended benefits, and other special UI programs such as Public Service Employment, trade readjustment allowances, and unemployment compensation for Federal employees. Originally, the employer taxes went to the State trust funds to pay for the regular benefits, and to the Employment Security Administration Account to cover State and Federal costs of operating the program.

Specifically, Title IX of the Social Security Act established the Unemployment Trust Fund in the U.S. Treasury to hold receipts from Federal and State UI taxes. There are separate accounts within the fund for each of the States, as well as three distinct Federal accounts. The Federal accounts are the Employment Security Administration Account, the Extended Unemployment Compensation Account, and the Federal Unemployment Account.

The current Federal unemployment tax rate is 3.4 percent of the first $6,000 of each employee's annual wages and employers receive credit for 2.7 percentage points of the tax, if they operate in a State with an approved UI system.[5] The remainder (0.7 percentage points) is distributed between the employment security account (0.45 percentage points) and the extended compensation account (0.25 percentage points). As previously indicated, the former pays all administrative expenses, both Federal and State, while the latter funds half of extended benefits and all of the Federal supplemental benefits (which expired in 1978). The State trust funds pay for 100 percent of the regular benefits and for the other half of the extended benefits.

It is important to observe that general revenues also are funneled into the extended compensation account and the Federal account. The latter account serves the critical function of providing repayable interest-free advances to States with depleted reserves, and with 17 States currently devoid of any reserves, this aspect of UI financing is significant. Any excess of payroll tax receipts remaining after payment of State and Federal administrative costs is directed by law to this account, which has a statutory ceiling of 0.125 percent of total wages in covered employment (currently about $1.2 billion). If either account is depleted, congressional appropriations from general revenues are necessary. These appropriations from Treasury funds are actually loans without interest which by law must be repaid either from direct State repayments of outstanding loans or from increases in the Federal payroll tax through reduced employer credits.

The 17 States with outstanding loan balances as of March 1981 are shown in table 1. The total unpaid amount is $5.926 billion, with five States (Illinois, Michigan, New Jersey, Ohio, and Pennsylvania) accounting for three-fourths of the debt. Illinois and Pennsylvania each owe sums which exceed the statutory limit of approximately $1.2 billion in the Federal account, the fund used to provide loans to all States with depleted reserves. Most of these debtor states have owed for 6 years or more. Why is it that so many States owe significant sums to the Federal account and are, in effect, being subsidized by nondebtor States? This article will now analyze the *State* debt to the Federal account and then review the *Federal* debt to the extended compensation account.

Table 1. States with outstanding Federal loan balances as of March 1981, and date loans were first made

State	Amount outstanding	Date of loan
Total	$5,936,386,940	
Arkansas	62,500,000	January 1976
Connecticut[1]	368,776,887	March 1972
Delaware[1]	49,332,893	November 1975
District of Columbia[1]	59,302,145	November 1975
Illinois[1]	1,280,770,410	December 1975
Kentucky	30,000,000	February 1981
Maine[1]	36,169,356	September 1975
Michigan	886,000,000	April 1975
Minnesota	99,800,000	April 1975
New Jersey[1]	659,127,836	January 1975
Ohio	520,933,000	March 1977
Pennsylvania[1]	1,530,814,839	October 1975
Puerto Rico[1]	84,425,098	April 1975
Rhode Island[1]	120,880,971	February 1975
Vermont[1]	40,597,195	February 1974
Virgin Islands[1]	7,142,310	February 1975
West Virginia	99,814,000	September 1980

[1] State making repayments through reduced employer credits toward Federal taxes.

The Federal account and State debt

As early as 1939, an excess of payroll tax receipts over unemployment benefits paid was apparent and year-end reserves in State trust funds were rising rapidly. Between 1943 and 1946, benefit payments as a percentage of total wages were extremely low. As a result, reserves in State trust funds reached 10.4 percent of total wages in 1945 and 9.4 percent in 1946, levels never again experienced in the reserve-to-wages ratio. Moreover, from 1946 to 1953, costs continued to fall in relation to contributions, and States steadily cut payroll tax rates to reduce the large surpluses in their accounts. (These trends in UI financial measures expressed as a percentage of total and taxable wages are presented in table 2.)

The "supersolvency" period ended during the 1957–58 recession, as the benefit costs ratio (that is, the ratio of expenditures on benefits to total wages in covered employment) rose to approximately double that for the preceding years. Since then, year-end reserves as a percentage of total wages (the reserve ratio) have remained below about 3.5 percent. Low benefit expenditures were experienced in the mid- and late 1960's and the slight decline in year-end reserves which began in the late 1950's as a result of a rise in unemployment was arrested. The reserve ratio, as seen in table 2, stayed between 3 and 3.5 percent of total payrolls during the 1960's. However, the downturn in 1970-71 dampened optimism about the continued solvency of many State UI systems. Even though the benefit cost ratio during this recession was relatively modest (in comparison to 1958) at approximately 1.2 percent of covered payrolls, reserves had fallen to 2.1 percent of total wages by the end of 1972. More importantly, a few States with unexpectedly high benefit costs had to borrow large sums from the loan fund to meet liabilities during 1972–74.

Reasons for State financial distress. Insolvency in State UI systems, a situation in which accumulated net reserves and current payroll tax receipts do not meet current benefit costs, became a noticeable problem in a few States during the early 1970's. However, it was not until 1975 that State insolvency reached the current acute stage. From 1972 to 1974, only three States received interest-free advances from the system, while in 1975 and 1976, 23 States had outstanding loans. Throughout the 1970's, 26 different UI systems received advances. While it is beyond the scope of this article to delve into State-by-State detail on the particular causes of insolvency, it will be useful to discuss certain factors which apparently have contributed significantly to the problem.

The incidence of unemployment has accelerated in recent years, and some States have been disproportionately affected. Considering States which had outstanding loan balances in early 1981 ("debtor" States), it is clear that their unemployment rates have been significantly higher than those in "nondebtor" States. In addition, the "trigger" for extended benefits has been more likely to come on and stay on in the debtor States than in others (that is, insured unemployment rates of debtor States are more apt to be above the 4-percent extended benefits "trigger" than are those of nondebtor States). For instance, during fiscal 1979 and 1980, States with outstanding balances were paying for extended benefits an average of 8 months per year, compared to approximately 4 months for the other two-thirds of the country. The adverse economic conditions present during the 1970's have affected all State UI systems, but the debtor States apparently have experienced more severe economic conditions.

Another important consideration is the degree to which insolvent States are responsible for their financial plight. In particular, it has been suggested that the Federally mandated extension of benefits (both the extended and supplemental benefits programs) contributed to the very high costs which some States experienced during the 1974–75 recession. First, it should be noted that the supplemental benefits program was always exclusively a Federal program, and thus never added a financial burden to State systems. Second, while the existence of extended benefits may lengthen the duration of unemployment and raise program costs slightly, regular UI benefits have historically exceeded by very large margins the costs associated with the extended benefits program. The costs of the State share of this program do not go very far in explaining the depletion of reserves among debtor States; only during 1975 and 1976 were extended benefits costs more than 5 percent of to-

Table 2. Trends in unemployment insurance financial measures, selected years, 1940–78

Year	Percent of total wages			Average employer tax rate (percent of taxable wages)	Reserve ratio (percent of total wages)	Reserve multiple ratio [1]	
	Taxes collected	Benefit costs	Average employer tax rate			Actual	High cost
1940	2.63	1.60	2.50	2.70	5.60	3.50	....
1945	1.74	.67	1.50	1.71	10.38	15.49	....
1950	1.16	1.33	1.18	1.50	6.76	5.08	....
1955	.81	.91	.81	1.18	5.56	6.11	....
1960	1.17	1.40	1.15	1.88	3.29	2.35	1.60
1965	1.18	.84	1.18	2.12	3.17	3.77	1.55
1970	.65	1.01	.64	1.34	3.11	3.08	1.51
1974	.94	1.07	.94	2.00	1.88	1.75	.92
1975	.90	2.03	.89	1.98	.53	.26	.24
1976	1.16	1.39	1.20	2.58	.13	.09	.06
1977	1.27	1.16	1.29	2.85	.13	.11	.06
1978	1.35	.93	1.37	2.77	.55	.60	.25

[1] Reserve multiple ratio (actual) = reserve ratio/benefit costs ratio, and reserve multiple ratio (high cost) = reserve ratio/1958 benefit ratio or reserve ratio/1975 benefit ratio. (The "high cost" multiple ratio is one measure of fiscal solvency, with 1.5 considered a minimum level of reserve adequacy. The "high cost" years are 1958 and 1975.)

SOURCE: U.S. Department of Labor, Employment and Training Administration, Unemployment Insurance Service.

tal costs. Indeed, comparison of payroll tax receipts with benefit expenditures shows that debtor States generally lacked tax revenues necessary to meet even *regular* UI benefit costs during the mid- and late 1970's.

The evidence further shows that relative taxing efforts, in absolute terms and in comparison to total wages, of debtor States are not as high as might be expected given their costs. In 1978, about half had an average employer tax rate as a percent of taxable wages of 2.8 percent (the national average) or more, and 1978, it is noted, follows several years of continued insolvency for these States. Some debtor States did experience soaring costs during the mid-1970's which obviously contributed to their indebtedness. However, the problem in some States (for example, Michigan and Connecticut) appears to be related to a policy of maintaining relatively low reserves in comparison to payrolls and of continuing to impose tax rates well below those of other States with comparable costs. In contrast, others (such as North and South Carolina) had very high increases in costs during 1975 but did not go into debt because they entered the recession with very high reserves, and some (for example, California) survived the escalated costs by raising payroll taxes as the economy worsened. It should be underscored that these uneven financing patterns among States lend little support for a Federal policy of loan forgiveness, because of the inequities such a solution would create among solvent and debtor States.

Possible solutions to the problem. Hindsight suggests that more fiscally prudent reserve levels in debtor States might have been helpful in avoiding insolvency. In the past, several solvency standards or rules have been suggested to ensure that States would have sufficient funds to meet yearly program costs without creating vast surpluses or large deficits in reserve funds. The "reserve multiple" rule is the one most often recommended and the Department of Labor generally urges States to adapt it to their own cost experiences.[6] However, simple arithmetic shows that use of the standard of the 1.5 reserve multiple ratio (that is, a value of at least 1.5 for the reserve ratio divided by the high cost ratio) in reserves at the start of 1970 would not have forestalled insolvency in most of the States which experienced it during the 1970's. Indeed, a reserve multiple of 2 would not have been enough in many cases. For one thing, this reserve multiple rule is apparently predicated on there being sufficient time between recessions for adequate reserves to accumulate. Back-to-back recessions such as those of 1970–71 and 1974–75 evidently do not permit this rebuilding without some increase in tax rates. Also, the reserve multiple rule does not account for liberalizations in benefits which have occurred.[7]

The National Commission on Unemployment Compensation, an independent advisory body to Congress and the President, recently provided a set of policy recommendations pertinent to the financing of the UI system. The commission circuitously addressed the issue of outstanding State loans by suggesting that *all* States be "reimbursed from Federal general revenues for the State share of extended benefits costs during the period of the national 'on' trigger," on a retroactive basis. (A related recommendation was that *existing* loans not be required to bear interest in the future.)

Reimbursement of the States for their share of extended benefits costs during the national trigger periods would cost the Federal Government about $3.3 billion. Because most of those monies would be going to nondebtor States, the reduction in the current State debt would amount to $1.3 billion, slightly less than one-third of the $5.9 billion outstanding. Thus, a liability of more than $4.6 billion would remain if the recommendation were accepted. The merits of this recommendation seem to relate to the propositions that all States should be treated equally, and that cutting back the debt from $5.9 to $4.6 billion would somehow provide a fresh start in solving long-term problems. It may also be an implicit recognition of the disparate impact that the 1975 recession had among States. On the other hand, the recommendation does not address the issue of the remaining State debt and sets a significant precedent in forgiving repayment of sizable sums. It further raises the issue of equity in the treatment of States which have not borrowed or which have borrowed but have repaid their debts, and those which have yet to repay substantial loans. Therefore, in terms of fairness to nondebtor States, it would be preferable not to dismiss any of the debt. Loan policy should also be modified to begin charging interest for any outstanding loan balances, to prevent the implicit subsidy going from nondebtor to debtor States. The current debt is costing (conservatively) about $600 million in forgone interest, an expense being met by employers and taxpayers in nondebtor States.

The Federal side

In addition to the $5.9 billion owed by 17 States to the Federal Unemployment Account, there is also a Federal debt due the Extended Unemployment Compensation Account, which at the end of 1980 amounted to $7.6 billion. Therefore, the combined total debt for the UI system is more than $13.5 billion.

The current Federal debt to the extended compensation account consists of $1.8 billion for the extended benefit program and $5.8 billion for the Federal supplemental benefit program, which expired in 1978. As noted earlier, funds from the Federal Unemployment Tax Account (FUTA) are used to finance all administrative costs in the UI system, as well as the Federal share of

extended and supplemental benefits costs. Before 1977, the FUTA tax was 0.5 percent of covered wages, and 90 percent of that (or 0.45 percentage points) flowed into the Employment Security Administration Account to cover administrative costs. The remaining 0.05 percentage points paid for the Federal share of the extended benefits through the extended compensation account fund, which explains why the Federal debt rose so rapidly between 1970 and 1977.

In 1977, Congress recognized that the 0.05 percent could not meet the mounting costs of the additional unemployment benefits programs it had established, and the FUTA tax rate was raised to 0.7 percent. The portion of the Federal tax designated for administrative expenses remained at 0.45 percent while the percentage designed to pay the extended and supplemental benefits rose from 0.05 to 0.25. This last figure is currently being used to retire (slowly) the existing Federal debt, although if an unemployment increase should retrigger the extended benefits program, the funds would then be used purely for paying current expenses. And, if those costs should exceed the amount which the 0.25-percent tax generates, additional borrowing from general revenues would occur and the Federal share of the debt would grow once again.

The present statutory limit of the extended compensation account is 0.125 of total wages in covered employment, or about $1.2 billion. After the outstanding indebtedness of this account has been repaid to general revenues, the 0.7-percent net tax will again drop to 0.5 percent. One-tenth of net collections, or 0.05 percent would flow into the extended compensation account to rebuild it; the remaining 0.45 percent would continue to go into the extended compensation account to cover administrative costs; and the total Federal unemployment tax would thus be reduced from 3.4 to 3.2 percent.

Even if the unemployment rate remained at a level below that which would trigger the extended benefits program, the extended compensation account would not be replenished very rapidly after its debt to general revenues is finally paid off.[8] Back-to-back recessions, such as those in the 1970's, or periods of sustained high unemployment, would quickly deplete its reserves and again require borrowing from general revenues.

The supplemental benefits program, as noted above, was enacted in December 1974, to provide "emergency" supplemental benefits for persons who had exhausted both their regular and extended benefits. The Federal tax receipts flowing into the extended compensation account did not begin to meet the high costs associated with the nonregular programs, and advances to the account from general Treasury revenues were required. The current extended compensation account debt for the supplemental benefits of $5.8 billion must, according to statute, be repaid to the Treasury from receipts of the Federal payroll tax on employers. This debt was incurred from the beginning of the supplemental benefits program through March 1977. Subsequently, supplemental benefits costs were charged directly to general revenues, not to the extended compensation account, thus relieving the States and employers of the costly burden. This practice continued until the program was terminated in 1978.

Congressional authorization to cover costs of the supplemental benefits program from general revenues is tacit acknowledgment that at least some portion of the costs of benefit extension should be borne by taxpayers at large rather than by individual employers. The concept of individual employer responsibility, which is the basis for the States' experience-rated tax systems, makes sense only if employer accountability for unemployment is relatively short-lived. Therefore, any extensions of benefits beyond those that individual States are able and willing to provide should be funded by the Federal Government.

Employers would be relieved of this burden by following another National Commission on Unemployment Compensation recommendation to cancel at least part of this Federal debt. Future depletions of the extended compensation account might also be avoided if the current statutory funding limit of the account were raised to at least 0.25 percent of total wages in covered employment, and provisions made for *automatic* increases in the FUTA tax should reserves in the extended account fall below that fraction. However, any further extension of benefits beyond those of the extended benefits program, such as a new supplemental benefits program, should be paid totally from general revenues. Among other things, general revenue financing would encourage Congress to find the revenues before extending unemployment benefits, something which has not been done previously. This financing arrangement would also be consistent with the principle of limited individual employer responsibility. □

FOOTNOTES

[1] Employers operating in States with approved UI systems originally received a 2.7-percent credit toward the 3.0-percent Federal tax rate. The remaining 0.3 percentage points (or 10 percent of the total Federal rate) was paid by employers to cover all administrative costs of the program. Since 1961, the Federal tax rate has risen to 3.4 percent of taxable wages while the credit has held at 2.7 percent. Thus, the *net* Federal tax rate has increased from 0.3 to 0.7 percent of covered wages.

[2] The current maximum weekly benefits range from a low of $72 in Puerto Rico to a high of $202 in Ohio, with an overall average maxi-

mum benefit of about $104 per week. These benefits are not taxable for single individuals with gross incomes of less than $20,000 per year or for married persons filing joint returns with gross incomes below $25,000.

[3] There are other benefit programs which are funded out of general revenues, such as the "Redwood" program for displaced forestry workers in California.

[4] Of these 17 States, 11 were making repayments to the U.S. Treasury through reduced employer credits, as provided in the Federal Unemployment Tax Act. This method of repayment is tantamount to raising the effective tax rates for all employers in the State.

[5] Before 1961, the Federal tax was 3 percent; from 1961–70, 3.1 percent; between 1970 and 1977, 3.2 percent; and, since 1977, it has been 3.4 percent of taxable wages. The total credit allowed to employers in States with approved UI programs has remained at 2.7 percentage points, or nine-tenths of the original 3.0-percent payroll tax.

[6] See Paul Mackin, *Benefit Financing in Unemployment Insurance: A Problem of Balancing Responsibilities* (Kalamazoo, Mich., Upjohn Institute for Employment Research, 1978), pp. 31 ff. The reserve multiple rule suggests that a State's reserve ratio should be 1.5 to 3 times the highest consecutive 12-month benefit costs ratio since 1958. Both types of ratios are expressed as a percentage of total wages in covered employment which adjusts these indices for rising total wages. It is thought that States with reserve multiple ratios of 1.5 would have sufficient funds in reserve (and in current tax receipts) to pay for the increased costs of a recession as severe as the worst experienced since 1958.

[7] Paul Mackin, *Benefit Financing*, pp. 31 ff.

[8] If only 0.05 percent of taxable wages is allowed to flow into the extended compensation account, it would take approximately 6 to 8 years at present wage levels to reach the current statutory limit of the account, assuming no program costs for extended benefits.

Reducing structural unemployment

Unemployment can be said to be structural in nature if aggregate demand is high enough to provide jobs at prevailing wages for everyone seeking work but job openings remain unfilled because of a persistent mismatching of skills or geographical locations. If the mismatching is resolved voluntarily through mutual search by workers and employers in a reasonably short period of time, say 8 or 10 weeks, the resulting unemployment falls in the frictional category. The unemployment becomes structural, however, if the mismatching cannot be resolved by such voluntary action and the job seekers are required to develop new skills or change their place of residence but are effectively precluded from doing so. In the former instance the workers choose to remain unemployed because of the likelihood of finding suitable work, while in the latter their unemployment is involuntary in the sense that they cannot overcome the barriers that bar them from such work.

—FRANK C. PIERSON
The Minimum Level of Unemployment and Public Policy (Kalamazoo, Mich., W. E. Upjohn Institute for Employment Research, 1980), p. 53.

Employment created by construction expenditures

A billion dollars spent on construction generates 24,000 full-time jobs for 1 year, most of them in supporting industries, according to studies of 13 activities covering over half the value of new construction

ROBERT BALL

Almost 24,000 workers were employed for one full year for each billion dollars spent in 1980 for new construction such as buildings, houses, and highways. More than half of the jobs were created in industries that produce, sell, and deliver materials and equipment required for construction, such as the manufacturing, trade, transportation, and mining industries. (See table 1.) The 13 activities surveyed covered more than half of the value of new construction. Each activity created roughly an equivalent number of jobs in the economy. The fewest jobs were generated in commercial office buildings and civil works land projects (nearly 22,000 jobs per billion dollars) and the largest number were in public housing (26,000 jobs).

The studies: limitations and uses

Since 1959, the Bureau of Labor Statistics has surveyed labor and material requirements for various types of construction activity. The studies are designed to measure the total employment impact of construction activities, primarily those which would be affected by government actions. Total employment includes labor at the construction site (onsite) and labor required to manufacture, sell, and transport the materials, equipment, and supplies used in construction (offsite). The employment impact is developed only for expenditures on construction contracts. No attempt is made to measure the impact of activities such as planning, design work, purchasing rights of way, land acquisition and development, and public utilities installations. The employment generated from the spending and respending of wages and profits—the "rippling" or multiplier effect—also falls outside the scope of these studies.

The studies provide information on the amount of labor time required to complete the various types of activity per $1,000 of construction contract cost; cost of material, equipment, and supplies; distribution of costs; and occupational requirements of the specific activity.

Data are collected by visits of BLS field representatives to all general contractors and subcontractors whose projects were in a sample of projects completed during a specific time period—usually 1 year. The sample is selected from the universe of projects known to have been completed during the period. The universe is obtained from information provided by the Federal agency financially supporting the construction or insuring the funding of the construction or, for private sector activities, by the Bureau of the Census. Factors such as regional location, cost, and type of structure are considered in the sample design.

For each project, data are obtained on the total cost of the project, the contract cost of each operation, and the physical characteristics of the project. This information is important in determining how well the sample represents the universe and is also used in subsequent analysis.

Onsite employment information, obtained from con-

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tractors' payroll records, is used in developing onsite employee-hour requirements, wages, and total payroll costs. Access to the payroll records makes possible the collection and presentation of information on occupational distributions, timing of construction operations, and wage relationships between crafts.

Information collected on the distribution of costs is broken down by labor costs, material costs, and overhead and profit. In addition, a detailed listing of materials by type is obtained from written invoices and interviews with the contractors.

Offsite employment estimates are derived from the materials and equipment cost information. The estimates are developed in two stages. First, input-output tables, developed by the Department of Commerce, are used to derive volume of output in various industries generated by each of the materials purchased. Second, by applying industry productivity factors, the volume of output is translated into the amount of employment generated in each industry.

To apply the input-output tables appropriately, data on material purchases, which are obtained in current dollars, have to be adjusted to prices corresponding with those in the input-output tables. This requires a carefully developed set of material price indexes. In order to apply industry productivity factors, current data on productivity for each industry must be developed.

The major intent of these studies was originally to determine the impact of public works programs on employment, but the data have stimulated interest in other forms of analysis. Occupational data, for example, are used by the Department of Labor to help determine future training needs and predict shortages and surpluses in skilled trades, and are used by the Bureau as benchmarks for the occupational matrix which, in turn, is used to project occupational demand for the construction industry. Market analysts and manufacturers find data on type and value of materials extremely valuable for projecting demand for their products. Materials data also serve as benchmarks for the Department of Commerce's input-output tables. In addition, subsequent resurveys provide data on trends in onsite labor requirements which give indications of construction productivity change. Thus, the studies have been gradually expanded to cover private as well as public construction. Plans are to eventually cover all major types of construction activities as well as to resurvey various activities periodically.

This article summarizes data from all the activities studied to date.[1] Because the data relate to various construction activities and time periods, they provide a general picture of the employment generating effects of construction expenditures. The employment estimates are stated in terms of full-time year-long jobs. Because of part-time workers, transients, and the seasonal nature of employment in the construction industry, more workers would normally be employed than indicated by the full-time job estimates. In addition, while many major construction activities are covered, several significantly different activities are not.[2]

Also, the estimates are somewhat conservative due to the productivity assumptions used. Data on the decline in onsite labor requirements, used as proxy productivity increases, extend from 1959–60 into the mid-1970's. After that period, productivity growth in the economy generally dropped off sharply. However, because more

Table 1. Estimated jobs generated per billion dollars of contract expenditures (in 1980 dollars) for various types of construction, by industry

Activity	All industries	Construction industries			Other industries			
		Total	Onsite	Offsite	Total	Manufacturing	Trade, transportation, and services	All other
Private housing:								
Multifamily	25,400	11,100	9,900	1,200	14,300	7,600	5,200	1,500
Single-family	22,000	9,500	8,300	1,200	12,500	6,100	5,100	1,300
General hospitals	24,800	12,700	11,400	1,300	12,100	6,800	4,200	1,100
Elementary and secondary schools	23,200	10,300	9,100	1,200	12,900	7,300	4,200	1,400
Federally-aided highways	24,600	11,900	10,900	1,000	12,700	5,900	4,800	2,000
Sewer works:								
Lines	23,600	9,800	9,300	500	13,900	8,100	3,900	1,700
Plants	24,000	10,100	9,400	700	13,900	8,700	3,700	1,400
College housing	22,500	10,900	9,400	1,400	11,600	6,300	4,000	1,300
Civil works:								
Land	21,900	10,000	9,500	500	11,900	4,500	5,200	2,200
Dredging	23,100	13,600	12,300	1,400	9,500	4,700	3,500	1,200
Public housing	26,000	14,600	12,200	2,400	11,400	5,800	4,300	1,200
Federal office buildings	24,900	11,000	9,700	1,400	13,900	7,000	5,500	1,300
Commercial office buildings	21,900	9,800	8,800	1,000	12,100	6,700	4,200	1,300

NOTE: Detail may not add to totals due to rounding.

These estimates of employment requirements were developed from labor requirements studies data. Data were adjusted for price and productivity changes between the years of the most recent surveys and 1980. Productivity adjustments used were the average annual rates of decline in onsite labor requirements in constant dollars. For a description of deflators used, see *Survey of Current Business*, August 1974, pp. 18–27.

Estimates of the number of full-time jobs generated per billion dollars of expenditure were derived using 1,800 employee hours per year-round job for onsite construction; 2,000 hours for offsite construction; 2,089 for manufacturing; 1,795 for trade, transportation, and services; and 2,041 for mining and all other.

recent construction measures are not available, the earlier figures are extrapolated to obtain the 1980 employment figures. As a result, the employment estimates have probably been slightly underestimated.

The studies upon which this article is based include federally-aided highways, Federal office buildings, Corps of Engineers civil works land and dredging projects, sewer lines and plants, elementary and secondary schools, commercial (private) office buildings, college housing, public housing, private single- and multi-family housing, and general hospitals. Resurveys are underway for three of these activities in addition to a new study of retail stores and shopping centers.[3]

Employment impact

One interesting feature of the data is the narrow range of total labor requirements for different types of construction activities studied within roughly the same time period. This is true regardless of whether the activity involves residential buildings, nonresidential buildings, or heavy construction. For example, of the 10 activities studied during 1958–63, total hours generated per $1,000 of expenditures ranged from 208 for sewer plants to a little more than 250 for highways and civil works dredging. (See table 2.) Of the four activities surveyed in 1971 and 1972, employment ranged from 114 hours for elementary and secondary schools to 138 hours for private multifamily housing. Sewer lines and plants fell between these two extremes.[4] More recent studies show the same relationship; however, most have been abbreviated studies and thus do not report total hours.

Onsite labor. Onsite hours showed more variation than did total hours, ranging from 72 hours per $1,000 of expenditure for single-family housing to 134 for civil works dredging in 1958–63 and from 42 for schools to 50 for multifamily housing in 1971–72. According to more recent studies, the range in onsite hours has narrowed somewhat. For example, in the 1975–76 period, the range was from 30 hours for Federal office buildings to 33 for public housing.

The ratios of onsite hours to total hours also showed considerable variation. They ranged from 33 percent for single-family housing to 53 percent for civil works dredging, two of the first studies to be conducted. Civil works dredging projects, unlike other construction activities, require that much of the onsite work be done by ships' crews working on dredges and barges. However, in residential construction, the ratios of onsite to to-

Table 2. Employee hours created per $1,000 of contract expenditures (in current dollars), by industry, all studies, 1958–76

Activity and year	Total, all industries	Construction		Other industries		
		Onsite	Offsite [1]	Manufacturing	Trade, transportation, and services	Mining and all other
Federally-aided highways:						
1958 [2]	250.7	97.3	9.0	66.1	52.5	25.8
1976	80.5	32.2	3.3	22.8	15.4	6.9
Federal office buildings:						
1959 [2]	235.8	97.1	10.9	79.2	35.7	12.9
1973	([3])	42.8	4.7	([3])	([3])	([3])
1976	([3])	29.8	4.7	([3])	([3])	([3])
Public housing:						
1960 [2]	246.0	113.7	15.9	65.3	36.9	14.2
1968 [2]	175.1	79.6	11.9	47.8	26.7	8.8
1975	([3])	33.2	7.1	([3])	([3])	([3])
Commercial office buildings:						
1974	97.5	37.2	4.8	33.0	16.6	5.9
Elementary and secondary schools:						
1959 [2]	231.8	86.0	11.7	78.0	41.4	14.8
1965 [2]	193.2	72.3	8.8	65.8	34.4	12.0
1972	114.1	41.6	6.0	40.8	18.8	6.8
College housing:						
1961 [2]	236.3	93.6	14.1	77.5	37.2	13.8
1972	([3])	48.3	8.1	([3])	([3])	([3])
Civil works:						
Land projects:						
1960	213.4	84.7	4.5	53.2	46.9	24.1
1972	([3])	43.2	2.5	([3])	([3])	([3])
Dredging projects:						
1960	251.4	133.9	15.6	56.8	31.6	13.5
1972	([3])	57.0	7.0	([3])	([3])	([3])
Sewer works:						
Lines:						
1963	208.8	85.9	4.8	75.9	27.2	15.0
1971	128.3	48.0	3.0	48.8	18.8	9.7
Plants:						
1963	208.1	82.7	5.7	80.0	27.1	12.6
1971	127.4	47.0	4.0	51.6	17.6	7.2
Private multifamily housing:						
1971 [2]	137.5	50.0	6.5	46.9	26.1	8.1
Private single-family housing:						
1962 [2]	215.7	72.1	11.0	68.6	48.7	16.1
1969 [2]	145.6	51.9	8.2	47.2	29.6	8.7
General hospitals:						
1960 [2]	226.0	88.8	12.3	78.0	34.2	12.7
1966 [2]	189.0	76.1	9.8	64.0	29.6	9.5
Nursing homes:						
1966 [4]	192.7	73.7	8.4	66.6	33.6	10.4

[1] Revised, based on adjustment to 1979 benchmarks of *Employment and Earnings* series. Some SIC groupings were not revised for earlier years; thus data on offsite construction hours are not strictly comparable. Differences, however, would be slight.

[2] Indirect data revised from original study results due to reprocessing materials through improved input-output tables.

[3] Not available.

[4] Estimated except for onsite construction hours. Based on case study.

NOTE: Detail may not add to totals because of rounding.

Table 3. Estimated employee hours created per $1,000 of contract expenditures (in 1980 dollars) for various types of construction, by industry

Activity	All industries	Construction industries			Other industries			
		Total	Onsite	Offsite	Total	Manufacturing	Trade, transportation, and services	All others
Private housing:								
Multifamily	48.5	20.2	17.9	2.3	28.3	15.8	9.4	3.1
Single-family	41.9	17.3	14.9	2.4	24.6	12.8	9.2	4.2
General hospitals	47.1	23.1	20.5	2.6	24.0	14.2	7.5	2.3
Elementary and secondary schools	44.4	18.7	16.3	2.4	25.7	15.3	7.6	2.8
Federally-aided highways	46.6	21.6	19.6	2.0	25.0	12.4	8.6	4.0
Sewer works:								
Lines	45.4	17.7	16.7	1.0	27.7	16.9	7.0	3.8
Plants	46.1	18.3	16.9	1.4	27.8	18.2	6.7	2.9
College housing	42.9	19.9	17.0	2.9	23.0	13.2	7.2	2.6
Civil works:								
Land	41.0	18.1	17.1	1.0	23.2	9.3	9.4	4.5
Dredging	43.5	24.8	22.1	2.7	18.7	9.9	6.3	2.5
Public housing	49.2	26.8	22.0	4.8	22.4	12.1	7.8	2.5
Federal office buildings	47.4	20.1	17.4	2.7	27.3	14.7	9.9	2.7
Commercial office buildings	41.9	17.9	15.9	2.0	24.0	13.9	7.5	2.6

NOTE: Detail may not add to totals due to rounding. Data were adjusted for price and productivity change between the years of the most recent surveys and the current year for which price indexes were available. The appropriate deflator for each construction activity was used to adjust employment requirements for price changes from the most recent study year to 1980. See *Survey of Current Business*, August 1974, pp. 18–27 for a description of the deflators used.

tal hours were also rather wide—from 33 percent for single-family housing to 46 percent for public housing.

After adjusting the data for price and productivity changes and extrapolating the data to 1980 to facilitate comparison, the narrow range of the level of total hours becomes even more evident, ranging from 41 per $1,000 for civil works land projects to 49 for public housing construction. Onsite hours exhibited considerably more variation, extending from 17 hours for single-family housing to 27 for public housing. (See table 3.) Onsite labor requirements are affected by factors such as architectural design and structural features, relative proportion and types of materials and equipment used, differences in occupational skills and labor-capital ratios, and varying price and wage levels.

Onsite occupational requirements, like onsite hour requirements, vary significantly by type of construction activity, reflecting the characteristics of the projects and, particularly, the materials used. For example, carpenters, normally the largest group of skilled workers for building construction, reached their highest level in residential construction. For single-family housing, they represented more than one-third of all onsite occupational hours. On the other hand, for heavy construction such as highways, sewer lines and plants, and civil works construction, carpenters accounted for a relatively small proportion of hours, 1 to 2 percent. Conversely, operating engineers were the largest group of skilled workers for highways, sewer lines and civil works land projects (composing about one-fourth of onsite requirements) and one of the smallest for building construction (1.4 to 4 percent). Plumbers accounted for 14 to 16 percent of onsite employment for hospital construction, but very few plumbing jobs were generated in heavy construction activities.

Unskilled and semiskilled workers represented about a third of the construction jobs overall, from a little more than 23 percent for schools to around 50 percent for highways and civil works land projects.

According to the studies, no dramatic shifts have occurred in occupational requirements for construction. Obviously, some slight shifts have occurred, such as the displacement of plasterers by wallboard installers, and of carpenters who lay hardwood floors by soft floor layers, but these changes have been gradual. In addition, except for single-family housing where the proportion of laborers and helpers increased from 23 percent in 1962 to 28 percent in 1969, there has been no evidence that more intensive use of prefabricated components in building structures has stimulated substitution of lower skilled workers for higher skilled craftworkers. Indeed, even in single-family housing construction, this trend could reflect the geographic shift of a larger volume of houses being built in the South where lower skilled workers normally account for a higher percentage of employment. (Detailed data on the distribution of onsite hours by occupation are available from the author.)

Offsite labor requirements. There are two types of offsite hours. First are those generated in the contractors' offices and warehouses—hours which are required to support the onsite construction work. These hours normally average about 5 percent of total hours, based on data from the Bureau's employment and earnings survey. The other type of hours are generated in industries other than construction and are estimated from the use of materials, equipment, and supplies.[5] These hours

normally account for about 60 percent of total hours.

Usually, the greater the degree of prefabrication of materials used, or the greater the proportion of materials costs, the greater the number of offsite hours required. For example, more hours in manufacturing are required when ready-mix concrete is used than when contractors mix their own concrete at the site of construction. Similarly, the inclusion of built-in equipment such as escalators, elevators, and air-conditioning increases costs and manufacturing hours substantially. The effect on employment in individual industries varies for each type of construction because of differences in the construction process, including use of construction materials and equipment. Single-family housing construction, for example, uses a large quantity of lumber and wood products and, hence, has a significant impact on employment in establishments providing those materials.

The percentage of offsite hours to total hours varied widely among the surveys, ranging from 47 for civil works dredging to about 67 for single-family housing. Within residential construction, the range was from 54 for public housing to 67 for single-family housing.

The ratio of offsite to onsite hours averaged about 1.5, and ranged from 0.9 for civil works dredging to 2.0 for single-family housing. This means that each hour spent at the site of construction generated an average of one and one-half hours of work in offsite construction and in other industries which produce the materials, equipment, and supplies used at the site.

Distribution of costs

In general, the distribution of various cost components shows a declining proportion of total costs going to materials, supplies, and equipment; a relatively stable proportion going to onsite wages and salaries; and an increasing proportion going to overhead and profit. (See table 4.) One possible explanation for this trend is the increasing cost of construction financing and, to a lesser extent, higher indirect labor costs relative to onsite wages and salaries. Materials, equipment, and supplies, while increasing in cost, apparently are declining relative to other cost components. In addition, new materials, improvements in existing materials, and substitutions of materials which meet performance building codes while reducing costs (for example, plastic pipe instead of copper pipe for heating, ventilating, and air-conditioning and cold water applications) all contribute toward lowering of the proportion of materials to total costs.

Onsite wages and salaries average about one-fourth to one-third of all costs. Materials, which formerly ac-

Table 4. Distribution of construction contract costs, 1958–76

[In percent]

Activity	Total contract costs	Onsite wages and salaries	Materials, supplies, and built-in equipment	Construction equipment	Overhead and profit [1]
Federally-aided highways:					
1958	100.0	23.9	50.6	([2])	25.5
1976	100.0	23.8	46.7	([2])	29.5
Federal office buildings:					
1959	100.0	29.0	51.3	1.9	17.7
1973 [3]	100.0	34.0	50.0	([4])	16.0
1976	100.0	25.8	42.5	2.9	28.8
Public housing:					
1960	100.0	35.5	45.0	2.5	17.0
1968	100.0	32.4	41.9	1.5	24.2
1975 [3]	100.0	32.7	48.7	4.4	14.2
Commercial office buildings:					
1974	100.0	26.7	42.2	2.7	28.5
Elementary and secondary schools:					
1959	100.0	26.7	54.1	1.4	17.8
1965	100.0	25.8	54.2	1.0	19.0
1972	100.0	28.2	44.4	2.1	25.3
College housing:					
1961	100.0	29.3	52.6	1.6	16.5
1972 [3]	100.0	36.0	51.1	([4])	13.0
Civil works:					
Land projects:					
1960	100.0	26.0	35.0	19.3	19.7
1972	100.0	25.0	32.0	20.0	24.0
Dredging:					
1960	100.0	32.3	17.3	24.9	25.0
1972	100.0	30.0	24.0	28.0	19.0
Sewer works:					
Lines:					
1963	100.0	24.3	44.5	11.2	20.0
1971	100.0	24.3	35.2	16.7	23.8
Plants:					
1963	100.0	26.6	49.2	8.2	16.0
1971	100.0	25.2	47.0	5.6	22.2
Private multifamily housing:					
1971	100.0	27.9	44.2	3.0	24.8
Private single-family housing:					
1962 [5]	100.0	22.1	47.2	1.0	29.7
1969 [5]	100.0	20.4	43.4	.9	35.3
General hospitals:					
1960	100.0	28.2	53.2	1.2	17.4
1966	100.0	29.6	50.4	1.3	18.7
Nursing homes:					
1966 [6]	100.0	28.7	53.7	1.2	16.4

[1] Includes offsite wages, fringe benefits, construction financing costs, inventory, and other overhead and administrative expenses as well as profit.

[2] Equipment included with overhead and profit.

[3] Estimated. Includes actual costs of general contractors and estimated costs of subcontractors.

[4] Equipment included in materials.

[5] Includes selling expenses.

[6] Estimated, based on case study.

NOTE: Detail may not add to totals due to rounding.

counted for almost 50 percent of costs, now average about 40 percent. Contractor capital equipment varies from 1 to 3 percent for building construction to one-fourth to one-third of costs for some heavy construction projects. Overhead and profit compose roughly a fourth of costs for most types of construction projects. Included in "overhead" are such costs as supplemental wage benefits, insurance, construction finance charges, office and warehousing expenses, and salaries for offsite workers. (Data on the distribution of onsite hours by type of materials used are available from author.)

Materials, equipment, and supplies. Materials, equipment, and supplies, which are used to derive the indirect labor requirements, vary considerably by type of construction activity. Highways and civil works dredging projects, for example, require huge quantities of gravel, crushed and broken stone, and other minerals. Lumber products, while used by all types of construction activity, are one of the largest components of cost for residential construction, and by far are the largest for single-family housing construction where they account for nearly 40 percent of material costs.

Stone, clay, glass, and concrete products compose roughly a fourth of costs for most construction activities. Civil works requires the least, proportionately, and sewer lines, the most.

The construction equipment category represents the rental or depreciation costs of contractors' capital equipment used in the construction process, such as tractors, bulldozers, cranes, compressors, and trucks. These costs normally account for a very small proportion of costs for building construction, less than about 4 percent of contract costs. Heavy construction such as sewer and civil works projects, on the other hand, normally requires large amounts of equipment to excavate and move large quantities of dirt and rocks as well as ready-mix concrete, brick and block, and other materials. These may account for nearly 30 percent of all costs.

Trends in onsite labor

Because technical problems still impede development of an adequate productivity measure for the construction sector, the best available insight into changes in construction productivity is provided by these studies of labor and materials requirements for various types of construction over time. Although declines in employee-hour requirements would seem to be another way of expressing increases in output per employee-hour, changes in construction labor requirements reflect the introduction of new methods, equipment, and materials; geographic shifts in demand; and shifts in the type of construction activity; as well as improvements in productivity. The effects of productivity change on employee-hour requirements are difficult to isolate from these other factors.

Changes in onsite hours per $1,000 constant dollars for each construction activity ranged from a decline of 0.3 percent per year for highways between 1970 and 1976 to a 4.7-percent drop for public housing between 1968 and 1975. (See table 5.) The small decline for highways reflects the lower level of activity of the interstate highway program and a shift to more labor intensive projects such as noninterstate highways, particularly in urban areas. The sharp decline in the rate for public housing reflects the shift from conventional public housing (those built under the direct supervision of local housing authorities) to turnkey projects (those built and completed by private contractors and then turned over to local housing authorities). When conventional projects only are used for comparison, the decline was 1.7 percent per year. (Data used to develop the average annual rates of decline for onsite hours are available from the author.)

Within these two extremes, most rates fell in the

Table 5. Change in onsite employee-hour requirements per deflated dollar for various types of new construction activities studied during 1958–76

Activity and year	Average annual percent change
Federally-aided highways:	
1958 to 1976	−1.5
1970 to 1976	−0.3
1958 to 1970	−2.2
Federal office buildings:	
1959 to 1975	−2.2
1972 to 1975	−1.8
1959 to 1972	−2.3
Elementary and secondary schools:	
1959 to 1971–72	−1.8
1964–65 to 1971–72	−1.6
1959 to 1964–65	−2.0
College housing:	
1960–61 to 1971–72	−2.5
Civil works:	
1960 to 1971–72	−2.4
Civil works land projects:	
1960 to 1971–72	−3.7
Sewer works line projects:	
1963 to 1971	−2.3
Sewer works plant projects:	
1963 to 1971	−2.2
Private single-family housing:	
1962 to 1968–69	−1.9
Public housing:	
1960 to 1975 [1]	−3.9
1968 to 1975 [2]	−1.7
1968 to 1975 [1]	−4.7
1960 to 1968	−3.2
General hospitals:	
1959–60 to 1965–66	−0.9

[1] Includes both conventional and turnkey projects in 1975.
[2] Includes only conventional projects in 1975.

NOTE: Average annual rates of change were calculated from the midpoints of construction for the various surveys.

1-to-3-percent range. It should be noted that the latest of the resurveys occurred in 1976. In the latter part of the seventies, productivity rates in the economy in general declined, indicating that the decline in onsite labor requirements may have been significantly less than those reported here for earlier periods. □

FOOTNOTES

[1] For a previous article, see Claiborne M. Ball, "Employment Effects of Construction Expenditures," *Monthly Labor Review,* February 1965, pp. 154–58.

[2] The major activities not covered by these studies are industrial plants, utilities, farm, commercial (other than office buildings), additions and alterations, and maintenance and repair work. Furthermore, force account construction activities are outside the scope of these studies. The activities that are covered relate only to new construction, not to work such as housing rehabilitation and road repair. Such activities could be expected to be more labor intensive than many of those studied.

[3] Federally-aided highways have been studied every 3 years since 1958. The 1961 hours are counted among the 10 activities, but are not shown in the table; the 1961 hours are 235 total and 92 onsite construction.

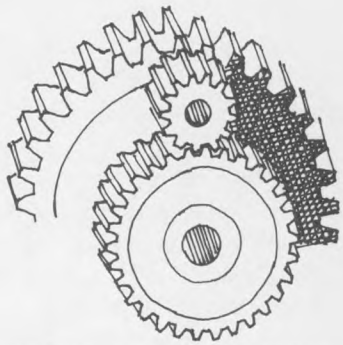
[4] Several abbreviated studies were designed and conducted to allow more frequent measurement of the labor requirements of different types of construction as well as to reduce survey costs. These studies omitted the collection of onsite occupational and materials data.

[5] Indirect labor requirements were developed by aggregating the materials, supplies, and equipment cost data by product group. After calculating the average amount required per $1,000 of contract cost for each product group, this bill of materials was deflated to the 1972 price level by the appropriate Producers' Price Index. These constant dollar values of materials, equipment, and supplies were then processed by the Bureau's Office of Economic Growth, using various interindustry studies of the U.S. Department of Commerce to generate estimates of final demand. Sector productivity factors were then applied to derive employee hours for the various industry groupings. The offsite hours in this article have been recently revised to incorporate the latest revisions of the input-output tables. Some older studies also were rerun on input-output tables for years closest to the study year which were not available at the time the original studies were done.

Maurice G. Wright, formerly of the Division of Technological Studies, and Karen J. Horowitz of the Office of Economic Growth assisted in the development of these offsite employee-hour estimates.

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.



Productivity Reports

Pilot study measures productivity of State, local electric utilities

DONALD M. FISK

State and local government electric power output per employee increased 52 percent between 1967 and 1978, in line with the productivity advance of private utilities and more than double the increase in the private economy.[1] (See table 1.)

The electric utilities owned by States, counties, and municipalities posted an average annual increase of about 3 percent over the 12-year period, according to a pilot study by the Bureau of Labor Statistics. Between 1967 and 1972, the average annual increase was 6.7 percent but fell to 2.8 percent between 1973 and 1978, in response to the sharp increase in fuel costs, higher interest rates, uncertainty concerning future demand, rising construction costs, regulatory delay, and new environmental protection requirements.

The data were developed as part of an investigation into the feasibility of calculating a series of State and local government productivity indexes. Currently, no national productivity indexes exist for State and local governments, which employ 13.4 million persons, or 13 percent of the civilian labor force.

Electric power generation and distribution was selected as one of the first services to be examined because of its readily identifiable output, good base of analytic knowledge, ongoing data collection system, and private sector measurements. The methodological approach followed that used for private sector utilities.

Rise in output uneven

The number of kilowatt hours sold by State and local government electric utilities to "ultimate customers" (electricity users or consumers) increased 64 percent between 1967 and 1978. The average annual increase was 4.0 percent. Output increased every year, although the growth between 1971 and 1975 was not as large as in the preceding and subsequent years. The average annual increase between 1967 and 1971 was 8.3 percent; between 1971 and 1975, it was 1.3 percent; and between 1975 and 1978, it was 4.4 percent.

Like kilowatt hours, the number of customers served and the amount of revenue earned by State and local electric utilities increased in every year between 1967 and 1978. The average increase in customers was relatively constant at 2.3 percent per year. The annual average increase in revenue was 11.7 percent (unadjusted for price change) with rapid acceleration in the latter part of the period. The average annual increase between 1973 and 1978 was 17.9 percent.

State and local systems sell about 37 percent of their kilowatt hours to residential users, 56 percent to industrial or commercial users, and 7 percent to other users, such as railroads and highway and street lighting authorities. These percentages were virtually unchanged throughout the period.

Output of the 33 largest utilities—those with over 1 billion kilowatt hour sales in 1978—increased 6 percent, or faster than total output. In absolute terms, the growth in sales was 95 percent, compared with 64 percent for all public utilities.

Table 1. Output per employee, output, and employees of State and local government electric utilities, 1967–78

[1967 = 100]

Year	All utilities			Large utilities		
	Output per employee	Output	Employees	Output per employee	Output	Employees
Index:						
1967	100.0	100.0	100.0	100.0	100.0	100.0
1968	110.5	108.7	98.4	104.9	105.5	100.6
1969	127.1	118.8	93.5	111.1	114.9	103.4
1970	129.9	128.2	98.7	116.1	124.0	106.8
1971	136.6	137.3	100.5	117.1	130.0	111.0
1972	137.9	138.9	100.7	126.2	140.1	111.0
1973	135.9	141.6	104.2	135.7	153.5	113.1
1974	135.1	143.3	106.1	132.5	152.8	115.3
1975	135.4	143.9	106.3	135.8	156.5	115.2
1976	144.2	151.4	105.0	144.0	165.7	115.1
1977	151.4	157.3	103.9	159.4	183.9	115.4
1978	152.4	164.1	107.7	164.0	195.3	119.1
Average annual percent change:						
1967–1978	3.0	4.0	0.9	4.4	6.0	1.6
1973–1978	2.8	3.1	.3	4.6	5.3	.7

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Employment growth slows

Employment in State and local government electric power utilities increased about 8 percent between 1967 and 1978, an average annual rate of increase of 0.9 percent. Between 1973 and 1978, the rate declined to 0.3 percent. In 1978, these utilities employed about 66,000 persons, 7 percent of whom worked part time.

Between 1967 and 1978, employment by large utilities increased about 19 percent, an average annual change of 1.6 percent, or double the industry average. The rate decreased to 0.7 percent between 1973 and 1978.

Statistics are not available to compute a public electric utility hours index but other data suggest that such an index would parallel the total employee index. The trend of the number of full-time equivalent employees, for example, matches the trend of total employment. Also, the trends of labor hours and total employment closely parallel each other for the private electric utilities (table 2).

Wages and salaries of the public utility employees increased 117 percent between 1967 and 1978, an average annual rate of increase of 7.8 percent. Between 1967 and 1972, the rate was 6.6 percent, almost the same as the increase in output per employee. Between 1973 and 1978, the average annual increase was 7.5 percent, while output per employee dropped to 2.8 percent per year.

Market share

There are about 2,220 State and local government electric power utilities in the United States today. Every State except Hawaii and Montana has at least one government-owned utility. Iowa, Kansas, Minnesota, and Nebraska each have more than 100. Almost all are operated by local governments. Of the several dozen State-operated utilities, four account for most of the sales to ultimate customers. They are located in New York, South Carolina, Oklahoma, and Texas.

State and local government utilities sell about 12 percent of the Nation's kilowatt hours, serve about 14 percent of the electric utility customers and own about 12 percent of the industry's plant and equipment. Most of the government utilities are small, having on the average about 30 employees.

By contrast, the 1,160 utilities owned by investors and cooperatives have on the average about 435 employees each. They sell 84 percent of the Nation's power, serve 86 percent of the market and own 80 percent of the industry's plant and equipment.

The Federal Government, which is primarily a generator and wholesaler of electricity, accounts for the balance.

In 1967, State and local government generating capacity was divided among steam, 66 percent, hydroelectric, 29 percent, and internal combustion, 5 percent. By 1978, in a shift away from steam, nuclear power accounted for 8 percent of capacity.

Today, State and local governments generate almost as much electricity as they distribute and sell. As recently as 1970, they purchased about 30 percent of the power they sold.

Large systems dominate sales and service. The top 10 account for about 35 percent of the kilowatt sales, the top 25, about 50 percent, and the top 150, about 85 percent. The 25 largest utilities employ, on the average, 1,150 employees.

The smaller utilities are increasingly joining forces to capture some of the economies enjoyed by the large utilities. There are 51 joint public action agencies in 31 States involving more than half of the 2,220 public power systems. Joint action projects range from joint purchasing to joint ownership of generating and transmission facilities.

Table 2. Output per employee, output, employees and employee hours of private-sector electric utilities, 1967–68

[1967=100]

Year	Output per employee	Output	Employees	Employee hours
Index:				
1967	100.0	100.0	100.0	100.0
1968	107.7	110.1	102.2	102.3
1969	114.7	120.6	105.1	105.8
1970	118.7	129.5	109.1	109.4
1971	125.1	138.0	110.3	110.3
1972	132.1	149.7	113.3	113.8
1973	137.7	161.5	117.3	118.9
1974	134.3	161.3	120.1	120.6
1975	139.7	165.3	118.3	116.9
1976	145.2	172.9	119.1	118.3
1977	151.6	184.2	121.5	121.0
1978	150.0	191.6	127.7	129.5
Average annual percent change:				
1967–1978	3.7	5.8	2.1	2.0
1973–1978	2.4	3.9	1.3	1.3

Private utilities

As noted, aggregate growth in output per electric utility employee between 1967 and 1978 was about the same in the private utilities as in State and local government, or 50 percent compared with 52 percent. However, the annual growth rates of the two types of enterprises varied substantially by subperiod.

Private output and employment grew much faster. (See table 2.) For output, the increase was 92 percent compared with 64 percent, and for employment, 28 percent compared with 8 percent.

A somewhat different picture emerges when the large State and local utilities are compared with all private utilities. The big public systems have about 925 employees each, compared with 435 in the private utilities. Output per employee grew faster in the government

utilities, 64 percent compared with 50 percent. The average annual increases were 4.4 percent and 3.7 percent.

During 1967–78, both private and government output per employee grew more than twice as fast as that of the overall economy, which registered an increase of only 21 percent.

But the slowdown in productivity growth so often observed and discussed in the overall economy was also in evidence in the electric power industry. The private business sector posted a 1.1-percent rise in output per employee from 1967 through 1972 and 0.8 percent from 1973 through 1978. The deceleration was sharper for electric utilities, from 5.5 percent in 1967–72 to 2.4 percent in 1973–78 for private utilities and 6.7 percent to 2.8 percent for State and local government utilities. □

FOOTNOTE

[1] Includes States and local governments or political subdivisions that engage in the generation, transmission, or distribution of electric energy for sale. The industry is designated as SIC 4911 in the *Standard Industrial Classification Manual, 1972.* All average annual rates of change are based on the linear least squares trend of the logarithms of the index numbers.

APPENDIX: Measurement techniques

Indexes of output per employee measure changes in the relationship between the output of a function and the employment expended on the output. The index of output per employee is derived by dividing the index of output by the index of functional employment.

The preferred output for the electric power index would be the kilowatt hours sold to ultimate customers separated by class of service provided—residential, commercial and industrial, and other—each weighted by the number of employees required to produce one unit in the specified base period. Thus, those services which require more labor time to produce are given more importance in the index.

In the absence of the number of employees by class of service, unit revenues have been used as weights in calculating outputs for the private and large government utilities. Class of service is not available for total State and local government output so this index is not weighted by that factor.

Employment indexes were derived from Bureau of Census, Bureau of Labor Statistics, and individual utility data. Employees and employee hours are each considered homogenous and additive, and thus do not reflect changes in the qualitative aspects of labor such as skill and experience.

The indexes of output per employee do not measure any specific contribution, such as that of labor or capital. Rather, they reflect the joint effect of factors, for example, changes in technology, capital investment, capacity utilization, plant design and layout, skill and effort of the work force, managerial ability, and labor management relations.

Labor and material requirements for Federal building construction

JOHN G. OLSEN

Continuing a long-term trend, the number of employee hours required per constant dollar of expenditure for Federal building construction is declining. Each $1,000 (in 1959 dollars) spent on Federal building projects in 1976 generated about 68 onsite employee hours, compared with 72 employee hours in 1973 and 97 hours in 1959 (table 1).[1] Assuming a continuation of this trend, an estimated 64 onsite employee hours per 1,000 (1959) dollars would have been generated in 1980.[2]

In terms of employment, each $1 billion spent on Federal building construction during 1980 generated the equivalent of about 24,900 year-long, full-time jobs throughout the economy.[3] About 11,000 of these would be in the construction industry, 9,700 onsite and 1,400 offsite.[4] In addition, about 13,900 jobs would be in industries that produce, transport, and sell the materials, equipment, and supplies used in Federal building construction.[5] In comparison, during 1980, for each $1 billion expended for commercial office building construction about 21,900 jobs were generated, and about 23,200 jobs were generated per $1 billion spent on elementary school and secondary school construction.[6]

These data are from a study of all Federal buildings completed in the continental United States in 1976 and 1977 under the auspices of the Public Buildings Service, General Services Administration.[7] The study originally comprised 33 projects, but was reduced to 24 due to lack of cooperation by contractors and because some projects were judged to be out of the scope of this survey. Lack of cooperation in supplying data was particularly acute in the West.[8] As a result, data for the West are not sufficiently reliable to permit publication of separate figures for that region. However, data for the West were adjusted for nonresponse and were included in national totals. Projects in the study included regular Federal and Social Security Administration office buildings, border stations, and other buildings included in the last two BLS studies on Federal building construction. Federal and Social Security Administration office buildings accounted for about 80 percent of all projects in 1973 and 1976. Although all three of these surveys are essentially studies of office buildings, several factors make comparisons among them difficult.

The average building size, for example, varies considerably among the studies. In 1959 (1962 study), the av-

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Table 1. Employee hours required per $1,000 of Federal building construction, by industry, 1959, 1973, 1976, and estimated 1980

Industry	Current dollars				Constant 1959 dollars		
	1959	1973	1976	1980[1]	1973	1976	1980[1]
All industries	235.7	([3])	81.5	47.4	([3])	187.4	172.8
Construction	107.9	47.7	34.5	20.1	80.2	79.3	73.3
Onsite	97.1	42.8	29.8	17.4	71.9	68.5	63.5
Offsite	10.8	4.9	4.7	2.7	8.2	10.8	9.8
Other industries[2]	127.8	([3])	47.0	27.3	([3])	108.1	99.5
Manufacturing	79.2	([3])	26.0	14.7	([3])	59.8	53.6
Trade, transportation, and services	35.7	([3])	16.5	9.9	([3])	37.9	36.1
Mining and other	12.9	([3])	4.5	2.7	([3])	10.3	9.8

[1] The 1980 employment estimates were developed from 1976 survey data adjusted for price and productivity changes from the midpoint of the 1976 survey.
[2] Indirect employment data were revised from the original 1959 survey results because of the reprocessing of materials data, through improved input-output tables.
[3] Data not available.
NOTE: Detail may not add to totals because of rounding.

erage size was about 94,000 square feet. This dropped to 67,000 in 1973 (1976 study) and rose to 266,000 in 1976. A further complication is introduced by the abolition of the Post Office Department, whose physical plant was under the control of the General Services Administration, as are most Federal office buildings. After the establishment of the new U.S. Postal Service, control of the buildings reverted to the new agency. Thus, Postal Service buildings are excluded from the 1973 and 1976 studies. In addition, a larger proportion of small Social Security Administration office buildings, those with 10,000 square feet of floor space or less, were included in the 1973 study and made up about 40 percent of all projects.

As a result of these factors, only the broadest comparisons can be made among these studies.

Onsite labor requirements

Onsite labor requirements accounted for the largest component of total labor requirements for new Federal building construction in 1976. Federal building projects averaged about 30 onsite employee hours per $1,000 of contract cost, about 37 percent of all employee-hour requirements. Federal and Social Security Administration office building projects generated slightly lower onsite labor requirements than other Federal building projects, an average of about 29 hours, compared with 33.

Federal building projects during 1976 required an average of 378,000 onsite employee hours, or about 210 employee years of onsite labor, compared with 119,000 onsite hours in 1973 and 171,000 hours in 1959. On a square-foot basis, Federal building projects in 1976 generated an average of almost 142 onsite employee hours per 100 square feet, a decline from the approximately 177 onsite employee hours generated in 1973, and the 183 hours in 1959.

Onsite employee hours per $1,000 (constant 1959) decreased at an average annual rate of 2.2 percent between 1959 and 1976.[9] From 1959 to 1973, the annual rate declined an average of 2.3 percent. Between 1973 and 1976, it fell an average of 1.6 percent.

The change, over time, of onsite employee-hour requirements per unit of output reflects the introduction of new methods, equipment, and materials, and shifts in the composition and location of construction. Although changes in onsite employee-hour requirements reflect some differences in the type of structures built in the survey years, they provide a rough indication of productivity trends in this type of construction.

Onsite employee-hour requirements contributed by skilled trades workers increased from about 60 percent of total onsite employee hours in 1959 to more than 68 percent in 1976 (table 2). This rise paralleled significant increases in the proportion of onsite work performed by structural iron workers, elevator constructors, cement finishers, operating engineers, and electricians. These trends reflect greater use of structural steel and concrete as building materials, as well as a larger mix of multistory office buildings with elevators. The percentage of semiskilled and unskilled workers fell during 1959–76, reflecting the increasing mechanization of construction laborers' tasks.

Table 2. Onsite employee hours required per $1,000 of Federal building construction cost, by occupation, 1959 and 1976

Occupation	Onsite employee hours		Percent distribution	
	1959	1976	1959	1976
All occupations	97.1	29.8	100.0	100.0
Skilled trades	58.2	20.4	59.9	68.3
Bricklayers	5.0	.8	5.2	2.7
Carpenters	12.2	4.1	12.6	13.9
Cement finishers	2.0	1.0	2.1	3.3
Electricians	8.8	3.4	9.1	11.5
Elevator constructors	.7	.4	.8	1.4
Glaziers	.4	.1	.4	.5
Insulation workers	2.1	.4	2.1	1.4
Iron workers, ornamental	.8	.3	.8	.9
Iron workers, reinforcing	2.1	.4	2.2	1.2
Iron workers, structural	1.2	1.7	1.2	5.8
Lathers	1.8	.3	1.8	1.1
Operating engineers	2.3	1.1	2.4	3.6
Painters	2.0	.5	2.1	1.6
Plasterers	2.0	.3	2.0	1.1
Plumbers and pipefitters	8.5	2.4	8.7	7.9
Plumbers	([1])	1.3	([1])	4.5
Pipefitters	([1])	1.1	([1])	3.4
Roofers	.7	.3	.7	1.0
Sheet-metal workers	4.9	1.3	5.0	4.5
Soft floor layers	.2	([2])	.2	.1
Terrazzo workers and tile setters	.5	.2	.5	.6
Other skilled workers	([1])	1.2	([1])	4.2
Laborers and other	33.0	7.0	34.0	23.6
Laborers, helpers, and tenders	31.5	6.4	32.5	21.4
Truckdrivers	.9	.2	.9	.8
Other	.6	.4	.6	1.4
Professional, technical, and clerical workers	2.2	.8	2.3	2.8
Superintendents and blue-collar supervisors	3.6	1.6	3.7	5.3

[1] Data not available.
[2] Less than .05 employee hours.
NOTE: Detail may not add to totals because of rounding.

Table 3. Onsite employee-hour requirements in Federal building construction, by type of contractor, 1959, 1973, and 1976

Type of contractor [1]	Employee hours required per $1,000			Percent distribution		
	1959	1973	1976	1959	1973	1976
Total	97.1	42.8	29.8	100.0	100.0	100.0
General contractors	38.5	16.1	9.1	39.6	37.6	30.5
Plumbing, heating, ventilating, and air-conditioning	19.5	8.5	4.9	20.1	19.9	16.6
Heating, ventilating, and air-conditioning	(2)	5.9	4.0	(2)	13.7	13.6
Plumbing	(2)	2.6	.9	(2)	6.1	3.0
Electrical	9.5	4.2	3.3	9.8	9.8	11.2
Plastering and lathing	4.7	2.7	.5	4.8	6.4	1.6
Structural and ornamental iron work	3.4	1.7	1.8	3.5	3.9	6.0
Structural steel erection	(2)	1.4	1.7	(2)	3.3	5.8
Ornamental iron work	(2)	.2	.1	(2)	.6	.2
Elevator and other equipment installation	1.5	1.6	.8	1.5	3.8	2.8
Elevators	(2)	.4	(2)	(2)	1.0	(2)
Mechanical and equipment installation	(2)	1.2	(2)	(2)	2.8	(2)
Masonry and stonework	7.7	1.2	1.5	7.9	2.9	5.2
Site preparation, excavation, and grading	2.0	.9	1.4	2.1	2.2	4.7
Roofing and sheet metal work	1.2	1.0	.5	1.2	2.3	1.6
Roofing and gutter work	(2)	.9	.4	(2)	2.1	1.3
Sheet metal work (except heating)	(2)	.1	.1	(2)	.2	.3
Painting and paper hanging	2.0	.5	.5	2.1	1.2	1.5
Ceramic tile, terrazzo, and marble	1.4	.5	.3	1.4	1.2	1.0
Other	5.7	3.7	3.0	5.9	8.7	17.1
Concrete work	(2)	.8	1.8	(2)	1.8	6.0
Carpentry	(2)	.8	.3	(2)	1.8	1.2
Acoustics	(2)	.2	.5	(2)	.5	1.8
Wallboard	(2)	(3)	.9	(2)	.1	2.9

[1] Because many contractors perform more than one operation, contractors are classified according to the major cost component of their work.
[2] Data not available.
[3] Less than .05 employee hours.
NOTE: Detail may not add to totals because of rounding.

General contractors accounted for 31 percent of onsite employee-hour requirements in 1976. Compared with the two earlier studies, this represents a continuing decline in the proportion of onsite hours worked by general contractors (table 3). The major subcontracting groups employed in Federal building construction are: heating, ventilating, and air-conditioning; electrical; concrete; and structural steel. Along with the general contractors, these groups accounted for more than two-thirds of all onsite hours in 1976.

Offsite labor requirements

Offsite labor requirements represent builders' administrative, estimating, and warehousing activities, and the labor to produce and distribute materials, equipment, and supplies used in the construction process. Expenditures for Federal building construction during 1976 generated an estimated 52 offsite employee hours per $1,000.

Estimates of contractors' offsite employment requirements, based on BLS employment data, indicate that the proportion of total labor requirements contributed by offsite construction employees increased from 4.6 percent in 1959 to 5.8 percent in 1976. This trend reflects the increasing complexity of many construction projects requiring more planning, coordination, and offsite work.

Offsite employment requirements for industries other than construction accounted for about 58 percent of total labor requirements in 1976, a slight increase from 1959. The distribution of employment among various industries showed increasing variation from 1959 to 1976. Trade, transportation, and services increased from about 15 percent of total labor requirements in 1959 to about 20 percent in 1976, due largely to substantial growth in the employment share contributed by retail trade and services. In both studies, mining and other industries accounted for about the same proportion of total labor requirements, between 5 and 6 percent. The manufacturing sector declined slightly from about 34 percent in 1959 to about 32 percent in 1976. The trend towards an increasing proportion of total labor requirements represented by offsite employment is expected to continue, as the growing use of prefabricated components gradually shifts some onsite construction jobs to other industries.

Distribution of costs

Onsite wages and salaries made up about 26 percent of total contract costs for new Federal building construction projects in 1976. In each survey, materials, built-in equipment, and supplies composed the largest share of total costs. The following tabulation shows the percentage distribution of costs for the three surveys:[10]

	1959	*1973*	*1976*
Onsite wages and salaries	29.0	34.0	25.8
Materials, built-in equipment, and supplies	51.3	50.0	42.5
Contractors' equipment	1.9		2.9
Overhead and profit	17.7	16.0	28.8

The cost distribution in the tabulation suggests that a significant change occurred between 1959 and 1976 in the relative cost shares for Federal building construction. The proportion of costs represented by materials fell from about 51 percent in 1959 to below 43 percent in 1976. The proportion contributed by onsite wages also declined slightly, while contractors' equipment showed a slight rise. Overhead and profit costs, which include salaries of offsite workers, supplemental benefits, performance bonds, contractors' profits, and expenses for interest, office, and miscellaneous items increased from 18 percent in 1959 to almost 29 percent in 1976. Factors contributing to this large rise included increases in the proportion of total labor requirements contributed by offsite construction employees; a rise in interest rates for contractor loans; and increases in employer contributions for supplemental benefits such as paid holidays and vacations, health insurance, and retirement plans.

Materials, supplies, and equipment costs for Federal building construction amounted to about $454 per

Table 4. Materials, equipment, and supplies used in Federal building construction, 1959 and 1976

Type of material	Value per $1,000 of contract cost		Percent distribution	
	1959[1]	1976	1959	1976
All materials, equipment, and supplies	532.50	446.35	100.00	100.00
Materials, built-in equipment, and related supplies	513.40	417.27	96.41	93.48
Agricultural products	([2])	1.03	([2])	.23
Mining and quarrying nonmetalic minerals, except fuels	2.20	2.18	.41	.49
Textile mill products	([2])	7.43	([2])	1.66
Apparel and other finished products made from fabrics and other similar materials	([2])	.30	([2])	.07
Lumber and wood products, except furniture	17.60	10.29	3.31	2.31
Furniture and fixtures	1.80	1.83	.34	.41
Paper and allied products	([2])	2.02	([2])	.45
Chemicals and allied products	5.50	4.90	1.03	1.10
Petroleum refining and related products	4.70	4.95	.88	1.11
Rubber and miscellaneous plastic products	([2])	2.99	([2])	.67
Stone, clay, glass, and concrete products	115.00	100.93	21.60	22.61
Primary metal products	57.60	92.93	10.82	20.82
Fabricated metal products, except ordnance, machinery, and transportation equipment	122.70	86.27	23.04	19.33
Machinery, except electrical	79.10	47.52	14.85	10.65
Electrical machinery, equipment, and related supplies	89.00	45.13	16.71	10.11
Instruments and related products	15.40	4.54	2.89	1.02
Miscellaneous manufacturing products	2.80	2.04	.53	.46
Total contractors' construction equipment	19.10	29.08	3.59	6.52

[1] Because detailed data have been regrouped for 1976, group totals may vary slightly from those presented in earlier publications of the survey data.
[2] Data not available.
NOTE: Detail may not add to totals because of rounding.

$1,000 of construction costs in 1976 (table 4). This represents a decline of about $78 per $1,000 from the 1959 survey, about 15 percent. In both 1959 and 1976, of the total costs for materials, supplies, and equipment, only 7 percent was allocated to contractor construction equipment (capital equipment used in the construction process). The remaining 93 percent was for materials, supplies, and equipment that became part of the buildings, such as heating and air-conditioning units.

Materials, supplies, and built-in equipment accounted for more than two-fifths of construction costs in 1976. Three major product groups made up more than three-fifths of the costs of all materials. Stone, clay, glass, and concrete products constituted the largest material grouping, representing almost $101 per $1,000 of total project costs. Most important within this group were ready-mix concrete and concrete products. Primary metal products were the next largest group of materials—about $93 per $1,000 of total cost. Structural steel products, which contributed almost $80 per $1,000, represented the largest single cost category in the primary metals group. Fabricated metal products (except ordnance, machinery, and transportation equipment), the third largest group, accounted for more than $86 per $1,000 of contract cost. Within this group the important products were metal reinforcing bars and expended metal lath, and fabricated sheet metal products.

Federal building projects completed during 1976 and 1977 consisted primarily of steel-framed, multistory office buildings. Most projects had a built-in roof with a concrete roof base, an acoustical tile ceiling, drywall interiors, a concrete floor base with carpet covering, and a basement. A majority of the buildings had forced-air heating, central air-conditioning, and outdoor parking areas. All structures of more than two stories contained elevators.

Project characteristics varied somewhat by region. Hourly earnings for all construction averaged $8.66, ranging from $7.64 in the South to $9.93 in the North Central. Wages as a percentage of contract costs varied from about 24 percent in the South to about 28 percent in the North Central.

The Northeast led all regions in average cost per project and per square foot, reflecting several factors. A higher proportion of projects in the Northeast had more than two stories, and thus, required elevators. In addition, average hourly earnings of onsite workers in the Northeast were higher than in the South and West, and the proportion of contract costs allocated to overhead and profits was the highest of any region.

A final report on this survey, with detailed analysis of regional differences, material costs, and occupational requirements, is in preparation. □

FOOTNOTES

[1] These survey findings are from a series of studies, conducted by the Bureau of Labor Statistics, on construction labor requirements. The data from this series are used to assess the impact of construction expenditures on employment, to make budgetary decisions, to aid in developing countercyclical employment and expenditure policies, to evaluate training needs, to anticipate occupational shortages and bottlenecks in skilled trades, and to provide indicators of productivity changes in construction.

The survey on which this report is based was designed primarily to determine the number of employee hours per $1,000 of new Federal building construction. Employee hours include both onsite and offsite construction employment, and that required to deliver the needed materials. No attempt was made to measure the labor required for planning, design work, and public utilities installation. The employment generated from the spending and respending of wages and profits—the multiplier effect—also fell outside the scope of the survey.

This is the third BLS study of Federal building construction. See John G. Olsen, "Decline noted in hours required to erect Federal office buildings," *Monthly Labor Review*, October 1976, pp. 18–22, Roland V. Murray, "Labor requirements for Federal office building construction," *Monthly Labor Review*, August 1962, pp. 889–93, and *Labor Requirements for Federal Office Building Construction* (BLS Bulletin 1331), 1962.

The 1973 survey of Federal building construction was one of a group of abbreviated studies of construction labor requirements. To allow more frequent measurement of the labor requirements of different types of construction as well as to reduce survey costs, the abbreviated studies omitted the collection of onsite occupational and

material data. Material and equipment cost information is used to generate indirect employment estimates for the industries which mine, manufacture, and transport construction materials. As a result, detailed data on occupational requirements, material usage, and indirect employment impact are not available for the 1973 survey.

[2] The 1980 employment estimates for Federal building construction were developed from 1973 and 1976 survey data adjusted for price and productivity changes. The deflator used to adjust survey data for price change is the Bureau of the Census' cost index for "nonresidential building" construction. This consists of: an unweighted average of the Bureau of the Census single-family housing price index, excluding value of lot; the Turner Construction Company cost index; and the Federal Highway Administration structures price index. The nonresidential building construction price deflator, derived from an unweighted average of the three indexes on a 1972=100 base, equaled 217 in 1980, 136.8 at the midpoint of the 1976 survey, and 109.3 at the midpoint of the 1973 survey.

The estimate used to adjust the survey data for productivity change is the inverse of the change in onsite employee hours per $1,000, after adjustment for price variations, between the 1973 and 1976 surveys. The annual rate of change averaged 1.6 percent during this period.

[3] Estimates of the number of full-time jobs per $1 billion spent in 1980 were derived using 1,800 hours per employee year for onsite construction; 2,000 hours for offsite construction; 2,089 for manufacturing; 1,795 for trade, transportation, and services; and 2,041 for mining and all other.

Because of part-time workers, transients, and the seasonal nature of employment in the construction industry, more workers would be employed than indicated by the full-time jobs estimates.

[4] Offsite construction labor requirements were estimated from the ratio of nonconstruction workers to total workers for the special trade contractor (Standard Industrial Classification 17) segment of the contract construction industry as shown in *Employment and Earnings*, March issues of the years covered.

[5] Indirect labor requirements were developed by aggregating the material, supply, and equipment cost data by product group. After calculating the average amount required per $1,000 of contract cost for each product group, this bill of materials was deflated to the 1972 price level by the appropriate Producer Price Index. These constant dollar values of materials, equipment, and supplies were then processed by the Office of Economic Growth, Bureau of Labor Statistics, using the 1972 Interindustry Study of the Bureau of Economic Analysis of the U.S. Department of Commerce, to generate estimates of final demand. Sector productivity factors were then applied to derive employee hours for the manufacturing sector; the trade, transportation, and services sector; and the mining and all other industries sector. Karen J. Horowitz of the Office of Economic Growth assisted in the development of these offsite employee-hour estimates.

[6] These 1980 employment estimates were developed from earlier BLS survey data adjusted for price and productivity changes. For reports on the earlier studies see Barbara Bingham, "Labor and material requirements for commercial office building projects," *Monthly Labor Review*, May 1981, pp. 41–48, and John G. Olsen, "Labor and material requirements for new school construction," *Monthly Labor Review*, April 1979, pp. 38–41.

[7] Although the study was based on project completions, most of the value put in place occurred between 1973 and 1977, with peak activity in 1976.

The length of time between the data year and the year of publication results from several factors. A considerable amount of time is needed to define and refine the universe and collect, compile, and verify the data. Actual data collection does not begin until at least a year after construction is completed, and surveyed projects require many personal visits to contractors and subcontractors, with numerous follow-up visits. Additional time is required for preparation and publication of the results. Nevertheless, data presented indicate trends in labor and material requirements and are useful in analyzing changes in these factors over periods of time. Data also serve as benchmarks for developing current estimates of employment generating effects on construction expenditures.

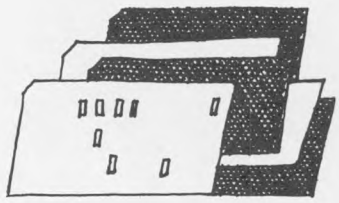
[8] Data from the study were provided for the continental United States and four broad geographic regions. The States included in each region were: Northeast—Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; North Central—Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; South—Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; and West—Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

For reasons discussed in the text of this article, no separate data are presented for the West region, but those for the other regions and for the Nation as a whole are believed to be accurate. The detailed data, however, have a wider margin of sampling error and may be subject to other limitations. But, except for the data estimated by the contractors, there are no known sources of probable nonsampling error. Sampling variances are being developed by the Bureau of Labor Statistics.

Average annual rates of change in the article were calculated between the midpoints of the various surveys. The midpoint of a survey is based on estimates of the value of surveyed construction put in place by year of construction time. For the 1976 survey, most of the value put in place occurred between 1973 and 1977 with the midpoint falling in 1975. For the 1973 survey, most of the value put in place was erected between 1971 and 1973 with the midpoint occuring in 1972.

[10] For 1973, general contractors' costs were obtained directly, but some subcontractors' costs were estimated by general contractors.

Research Summaries



BLS tests feasibility of a new job openings survey

LOIS PLUNKERT

In 1977, Congress asked the Bureau of Labor Statistics to collect job openings data by occupation and region. This information would be used by the Government in analyses of the causes of unemployment, and to help plan training and employment programs. Accordingly, the Bureau undertook a series of cooperative Federal-State surveys in Florida, Massachusetts, Texas, and Utah during March 1979–June 1980 to explore the feasibility of gathering these data.

Because the Bureau had already acquired considerable experience in collecting job openings data by industry during the 1969–73 Job Openings and Labor Turnover Survey project, the recent pilot tests instead emphasized the collection of occupational detail and the ability of employers to accurately report the number of job openings. Data from the pilots were also used to determine the sample size required to provide occupational detail at the State level, and the cost of such a survey.

The participating States were chosen to provide appropriate regional representation, and because they had demonstrated a willingness and ability to cooperate in the project. Each State was assigned a probability sample of 1,200 establishments drawn across all nonagricultural industries, except private households and public administration. State staff collected the data in tandem with the Labor Department's ongoing monthly labor turnover survey. Each State was required to conduct a response analysis survey of 200 of its sample units, and a quality measurement of job openings data collected by telephone from 225 units. Utah and Massachusetts also undertook special studies of recruiting and hiring activity in 100 of their establishments.

The pilot tests were divided into two phases roughly corresponding to fiscal 1979 and fiscal 1980. The first phase included three quarterly job openings collections during March-September 1979, and tabulation and analysis of the results. These tests were chiefly concerned with the method of soliciting participation, the nature of the data to be collected, and the format of the survey questionnaire. Also part of the first phase was a Response Analysis Survey, conducted following the collection of data for March, and designed to measure the quality of information gathered by mail. The second phase consisted of three quarterly collections of job openings data during the October 1979-June 1980 period; a quality measurement of data collected by telephone; and a case study for which selected participating units kept daily records of recruiting and hiring activity during March 1980.

The pilot tests showed that occupational data on job openings can be collected, but the task is difficult and costly, and at present the Bureau has no plans for initiating a job openings survey. The specific results of the study and conclusions are outlined below.

Collection methodology. Response rates for the first quarter pilot test varied widely among the four States—36 percent in Texas, 50 percent in Florida, 56 percent in Utah, and 82 percent in Massachusetts. Initial response rates similar to that in Massachusetts can only be achieved if certain collection procedures are carefully followed.

First, the sample should be phased in over a 1-year period. Because States must exert intensive effort to achieve high initial response, the workload must be small. Ideally, between 1,000 and 1,500 units per quarter should be introduced through the first year.

Data should be collected from small units (fewer than 50 employees) by telephone. Because recruiting and hiring occur infrequently in small units, these employers usually have nothing to report, and therefore feel that it is unnecessary and a nuisance to complete and return the questionnaire. The pilot tests showed telephone contacts to be less objectionable, and capable of eliciting the data with speed and reliability.

Units slated to respond to the survey by mail—those with 50 or more employees—should first be solicited for participation by telephone. These employers should be contacted before the questionnaires are mailed to explain the survey, ask their cooperation, identify a con-

Lois Plunkert, a project director with the Division of Occupational Pay and Employee Benefit Levels, Bureau of Labor Statistics, conducted this study when she was an economist with the Bureau's Division of Occupational and Administrative Statistics.

tact person in the firm, and confirm the mailing address. This procedure facilitates follow-up of firms which do not respond, and minimizes delays in collecting the often perishable job openings data.

Establishments which do not respond to the initial mailing must be followed-up aggressively. The pilot tests showed that response from mail collection improved considerably when employers received reminders by telephone. And, especially sensitive large firms should be visited by a field agent for solicitation or follow-up, or both. Largest units as a class had the lowest response rate in the four participating States, indicating that some additional collection effort is needed.

Quality of the data. The Response Analysis Survey attempted to assess overall collectibility of data by identifying both the type and magnitude of collection problems. It included a unit profile and a quality measurement component. The unit profile test examined in general fashion the recruiting and hiring process, information flow, and recordkeeping practices within the reporting establishments. The quality measurement component tested the validity of the data originally collected by matching it against information for the same reference date collected at a later time by personal interview. The strongest evidence concerning the feasibility of a job openings survey is provided by the qualitative unit profile results. However, caution should be used in interpreting the pilot findings because of the modest sample sizes in some categories.

The tests indicate that the extent to which respondents are well informed concerning job openings in their firms varies by size of establishment. As a general rule, respondents in small firms and in large manufacturing firms are knowledgeable and able to supply job openings data. However, a significant number of respondents in mid-size firms (50–250 employees) report gaps in their information which would lead to underestimates of job openings. Test results for large nonmanufacturing firms are mixed, but, overall, not strong enough to substantiate collectibility.

Even though records on job openings in large firms have improved since the mid-1960's, those in mid-size firms remain sketchy. A high percentage of large firms keep formal records of recruiting activity for 28 days or more. Most small firms are able to provide valid data from memory. Mid-size firms present a mixed picture, with large numbers lacking job openings records. This highlights the perishable nature of the data, and dictates collection as soon as possible after the reference date.

Telephone contact appears to be a viable collection method for firms with fewer than 50 employees. Pilot results from telephone collection of job openings data are similar to those obtained by personal visit, which are taken to be the standard. While we were unable to completely isolate the effects of collection methods from other factors, our survey estimates indicate that personal visits found, on average, only about 5 percent more firms with openings than telephone collection. If interviewers are properly trained, collection is timely, and telephone response is carefully monitored for quality and periodically bolstered with personal visits, this method should yield data of acceptable quality.

The pilot tests used the last business day of the month as a reference date, but survey results indicate that this may not be appropriate for collecting data on job openings. First, there appears to be a weekly pattern to the data, with Mondays accounting for the largest numbers of job openings. This suggests that a designated and constant day of the week would be preferable to a "floating" day. And secondly, there appear to be monthly patterns, with unique (if offsetting) occurrences at the ends of the months. Therefore, we recommend a more typical reference date—specifically, Wednesday of the week containing the 12th of the month.

Scope of the data. The purpose of a comprehensive job openings survey would be to measure opportunity for employment. Therefore, it is important to know not only whether the respondent can and will report the requested data accurately, but also what portion of unmet demand for labor is measured in this survey and what is not measured. Three separate issues emerge: the coverage of the definition of a job opening; the composition of the universe of firms to be studied; and the importance of unmeasurable opportunities for self-employment.

The pilot results indicate that the survey definition of a job opening—a position for which the employer is actively recruiting—yields appropriate measures of employment opportunities for wage and salary workers. The infrequent hiring that does take place without some type of recruitment occurs mainly in small and mid-size nonmanufacturing firms. The test definition, therefore, is effective in setting forth strict criteria without excluding significant paths to employment.

Establishments in business for less than a year cannot be surveyed. New establishments take about a year before they appear on the BLS sampling frame. Excluding these establishments would undercount the level of job openings, but consistency could be maintained year after year.

The scope of the data is best limited to wage and salary job openings in all industries except agriculture and private households, and opportunities for self-employed cannot be measured. Even if a nationwide survey were funded, it would not be practical to collect information outside the pilot universe of industries.

Survey design. The survey design should allow for statistical measurement of the accuracy of the estimates produced, and ensure high response rates and consistency of scope over time. In particular, this means that a probability sample of firms would be required, so that estimates of the sampling error for the statistics being measured might be developed.

Sample members should be rotated periodically; that is, new firms should replace some of the previously surveyed firms after a designated time. This procedure would ensure that all firms in business 1 year or longer are represented by the sample, and that adequate survey response rates could be maintained. The pilot test results indicate that the optimal procedure would be to replace one-eighth of the sample each quarter. However, it should be noted that, while pilot evidence does suggest that the recommended survey design could maintain an adequate response rate, the scheme has not had a full field test.

Cost considerations. A full-scale national survey is estimated to cost between $25 and $30 million. This estimate pertains to a Federal-State cooperative statistical program which would collect quarterly job openings and new hires data in tandem with the monthly labor turnover information, and provide publishable estimates of job openings by State for all occupations with at least 500 openings. National statistics would be publishable in considerable occupational and industrial detail. The required sample size, the special problem of dealing with smaller firms, and optimal collection methods were taken into account in developing the cost estimate.

A national survey capable of producing occupational estimates at the State level would require a very large sample: about 275,000 units, or between 4,000 and 6,000 per State. The samples used in the pilot tests (1,200 units per State) could provide estimates with small relative errors only for total current job openings and for the largest estimating cells. Most detailed estimates had very high sampling errors. Much larger samples would be required to produce reliable statistics on the number of unfilled jobs by occupation.

Because the job openings rate in firms with fewer than 250 employees was about 50 percent higher than in larger firms, considerable resources and effort should be expended to solicit the participation of small firms in the survey. Additionally, high weights associated with the smallest firms in the pilot tests at times resulted in large numbers of estimated openings from a few reports, while the majority of small firms reported no openings. This, in turn, resulted in high variances. The implication for a full-scale survey is that small firms should be sampled more heavily to keep establishment weights as low as possible.

And finally, the pilot tests indicated that the telephone should be used for solicitation of participation, data collection from small firms (about a third of the sample), and follow-up of nonrespondents. Telephone contact is much more expensive than use of the mails, but because representatives of small firms tend to rely on memory, strict adherence to a compressed schedule is essential. This also means that a relatively large State staff would be required to complete the calls, in the absence of technological enhancements such as computer-assisted telephone interviewing.

A comprehensive report about the pilot study appears in L. Plunkert, *Job Openings Pilot Program: Final Report.* National Technical Information Service, Springfield, Va. 22151, 1981 (Pb. 81-228538). $33.50. □

Container plant workers win largest gains in glassware manufacturing

A Bureau of Labor Statistics study of the pressed or blown glass and glassware industry in May 1980 found that wages in glass container manufacturing averaged $7.66 an hour—a 65-percent increase over the $4.63 average reported in May 1975.[1] Average straight-time earnings of workers in other types of glassware plants rose 48 percent—from $4.32 an hour to $6.40. Consequently, the pay advantage for glass container workers, accounting for about two-thirds of the survey employment, rose from 7 percent in 1975 to 20 percent in 1980.

The nationwide study, which covered about 83,000 workers and approximately 200 establishments, also found that in each industry earnings for the middle 50 percent of workers spanned a narrow range.[2] Contributing to this concentration of earnings was the relatively high incidence of pay plans based on single rates for individual jobs (covering 69 percent of workers in glass container plants; 32 percent in other glass factories) and the almost universal coverage of union contracts.

From the preceding observations, earnings for most individual occupations were also closely concentrated. In glass container plants, for example, the spread of the middle range of earnings by occupation was typically less than 40 cents an hour. In other glass and glassware firms, the spread was usually larger—about 50 cents to $1.50 an hour.

On the other hand, the broad mix of skill requirements in both industries provided for substantial difference in pay between the highest and lowest paid occupational groups studied. For example, the top earners in glass container firms were forming-machine upkeepers averaging $10.85; the lowest paid were janitors at $6.58. In the other glassware industry, the highest hour-

ly average was $8.95 for mold makers while the lowest average was $5.25 for watchmen. The following tabulation illustrates average straight-time hourly earnings of surveyed jobs common to both industries:

Department and occupation	*Glass containers*	*Other glassware industry*
Batch house and furnace:		
Furnace operators	$7.54	$6.79
Cullet handlers	7.09	6.05
Machine forming:		
Forming-machine upkeepers	10.85	7.85
Mold polishers	7.19	5.83
Maintenance:		
Machinists	10.06	8.62
Maintenance trades helpers	7.13	6.36
Miscellaneous:		
Power truckers	7.22	6.23
Janitors	6.58	5.90

Nearly all establishments in the survey operated under labor-management contracts covering all or a majority of their production workers. Most of the union members were represented by The American Flint Glass Workers Union of North America (AFL–CIO) or The Glass Bottle Blowers Association of the United States and Canada (AFL–CIO). Bargaining is generally conducted on a company-by-company basis. During the 1980 negotiations with major producers, an uncapped cost-of-living-adjustment (COLA) clause was adopted for the glass container industry which provides annual adjustments of 1 cent for each 0.5-point movement in the BLS Consumer Price Index for Urban Wage Earners and Clerical Workers in excess of 9 percent. COLA clauses applied to about nine-tenths of the workers in glass container establishments, and to slightly over one-half in other glassware plants.

All establishments in the Bureau's sample provided paid holidays, usually 12 per year, and paid vacations. Typical vacation provisions were at least 1 week after 1 year of service, 2 weeks after 2 years, 3 weeks after 10 years, 4 weeks after 15 years, and at least 5 weeks after 25 years of service.

At least seven-eighths of the workers in both industries were with employers who paid some or all of the cost of life, accidental death, sickness and accident, hospitalization, surgical, and basic and major medical insurance. Slightly over two-fifths of the glass container employees worked in plants providing separate noncontributory dental plans; less than one-tenth of the other glass and glassware workers were eligible for such benefits. Generally, retirement pension plans were financed by the employer and covered all workers in both industries.

A comprehensive report, *Industry Wage Survey: Pressed or Blown Glass and Glassware,* BLS Bulletin 2109, May 1980, will be for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. □

FOOTNOTES

[1] For an account of the 1975 study, see Carl Barsky, "Container plants top pay scale in glassware manufacturing," *Monthly Labor Review,* September 1976, pp. 47–49.

[2] The index of dispersion, calculated by dividing the middle range of earnings by median earnings, is 15 in glass containers and 20 in other glassware. These values fall within the first quartile of an array of dispersion indexes for 43 manufacturing industries discussed in an article by C.B. Barsky and M.E. Personick, "Measuring wage dispersion: pay ranges reflect industry traits," *Monthly Labor Review,* April 1981, pp. 35–41. Dispersion indexes for most industries typically fell between 24 and 36, according to the article.

Pay hikes tracked for local-transit employees

Increases in union wage rates for local-transit operating employees averaged 10.3 percent between July 1, 1979, and July 1, 1980. The average increase for operators of surface cars and buses was 10.1 percent, compared with 11.9 percent for elevated and subway equipment operators. The overall increase for transit workers was the third largest for the decade, according to an annual survey conducted by the Bureau of Labor Statistics.[1] This study presents local-transit wage rates set by labor-management agreements in large cities (defined as those with at least 100,000 inhabitants).

Regionally, the largest wage rate increases for transit employees were reported in the Pacific States (16.3 percent). The smallest were reported in New England (6.3 percent) and the Southwest region (7.4 percent). The 1979–80 increase was highest (13.0 percent) for the smallest cities studied—100,000 to 250,000 inhabitants—and lowest (9.2 percent) for those with 1 million inhabitants or more. Increases varied considerably among individual cities. (See table 1.)

On July 1, 1980, union wage rates for local-transit operating employees averaged $9.01 an hour; for operators of surface cars and buses, about nine-tenths of all employees covered by the survey, the average was $9.02; and for operators of elevated and subway equipment, it was $8.94. Six years earlier, the wage differential favored subway equipment operators by 60 cents, or 11 percent.

The highest paying regions in the survey—the Great Lakes, Pacific, Border States, and New England—had wage levels ranging between $9 and $10 per hour. The lowest paying region, the Southwest, averaged $7.37.

Union contracts commonly provide for pay differentials among local-transit operators by length of ser-

Table 1. Average wage rates by region: selected cities, July 1, 1980

[Union local-transit operating employees]

City and region [1]	Average hourly rate [1]	Change from July 1, 1979	
		Cents per hour	Percent
All cities	$9.01	82	10.3
New England	9.13	54	6.3
Boston, Mass. (II)	9.65	36	3.8
New Bedford, Mass. (IV)	7.50	81	12.1
New Haven, Conn. (IV)	8.29	100	13.7
Providence, R.I. (IV)	8.16	84	11.5
Stamford, Conn. (IV)	8.30	100	13.7
Middle Atlantic	8.66	75	9.5
Albany, N.Y. (IV)	7.76	79	11.3
Buffalo, N.Y. (III)	8.01	68	9.3
New York, N.Y. (I)	8.69	83	10.5
Newark, N.J. (III)	9.00	55	6.5
Philadelphia, Pa. (I)	8.08	52	6.9
Pittsburgh, Pa. (II)	9.80	79	8.8
Rochester, N.Y. (III)	8.21	31	3.9
Scranton, Pa. (IV)	7.20	50	7.5
Border States	9.22	80	9.3
Baltimore, Md. (II)	8.33	66	8.6
Louisville, Ky. (III)	7.55	14	1.9
Norfolk, Va. (III)	8.56	...	...
Washington, D.C. (II)	10.23	100	10.9
Southeast	8.01	79	10.9
Atlanta, Ga. (III)	9.71	143	17.3
Chattanooga, Tenn. (IV)	7.81	...	...
Jacksonville, Fla. (II)	8.00	76	10.5
Memphis, Tenn. (II)	8.84	101	12.9
Miami, Fla. (III)	7.49	40	5.6
Nashville-Davidson, Tenn. (III)	7.33	...	...
St. Petersburg, Fla. (IV)	5.21	92	21.4
Southwest	7.37	51	7.4
Fort Worth, Tex. (III)	6.15	40	7.0
Houston, Tex. (I)	8.15	53	7.0
New Orleans, La. (II)	7.07	56	8.5
San Antonio, Tex. (II)	6.87	43	6.8
Great Lakes	$9.77	73	9.5
Akron, Ohio (III)	7.28	68	10.3
Chicago, Ill. (I)	11.48	...	...
Cincinnati, Ohio (III)	8.32	86	11.5
Cleveland, Ohio (II)	9.20	73	8.6
Columbus, Ohio (II)	8.16	78	10.6
Detroit, Mich. (I)	8.31	...	...
Flint, Mich. (IV)	7.21	120	20.0
Grand Rapids, Mich. (IV)	7.50	91	13.8
Hammond, Ind. (IV)	8.33	82	10.9
Indianapolis, Ind. (II)	7.53	49	7.0
Milwaukee, Wis. (II)	9.14	101	12.4
Minneapolis-St. Paul, Minn. (III)	9.84	105	11.9
Rockford, Ill. (IV)	8.75	57	7.0
Toledo, Ohio (III)	7.94	43	5.7
Middle West	8.43	82	10.6
Kansas City, Mo. (II)	8.91	71	8.6
Omaha, Nebr. (III)	7.73	...	...
St. Louis, Mo. (II)	9.61	97	11.2
Wichita, Kans. (III)	5.35	50	10.3
Mountain	7.94	79	11.1
Denver, Colo. (II)	9.31	101	12.2
Phoenix, Ariz. (II)	8.23	96	13.2
Salt Lake City, Utah (IV)	6.86	61	9.8
Pacific	9.60	133	16.3
Fresno, Calif. (IV)	7.80	36	4.8
Honolulu, Hi. (III)	8.98	140	18.5
Long Beach, Calif. (III)	9.51	...	...
Los Angeles, Calif. (I)	9.74	...	...
Portland, Oreg. (III)	9.58	33	3.6
Riverside, Calif. (IV)	9.26	...	...
Sacramento, Calif. (III)	9.63	192	24.9
San Diego, Calif. (II)	9.76	...	...
San Francisco, Calif. (II)	9.90	190	23.8
Santa Ana, Calif. (IV)	9.32	119	14.6
Seattle, Wash. (II)	10.31	112	12.2
Spokane, Wash. (IV)	8.66	84	10.7

[1] The regions used in this study include: *New England*—Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont; *Middle Atlantic*—New Jersey, New York and Pennsylvania; *Border States*—Delaware, District of Columbia, Kentucky, Maryland, Virginia, and West Virginia; *Southeast*—Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, and Tennessee; *Southwest*—Arkansas, Louisiana, Oklahoma, and Texas; *Great Lakes*—Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin; *Middle West*—Iowa, Kansas, Missouri, Nebraska, North Dakota, and South Dakota; *Mountain*—Arizona, Colorado, Idaho, Montana, New Mexico, Utah, and Wyoming; *Pacific*—Alaska, California, Hawaii, Nevada, Oregon, and Washington. Population size of city is shown in parentheses as follows: Group I-1,000,000 or more; Group II-500,000 to 1,000,000; Group III-250,000 to 500,000; and Group IV-100,000 to 250,000.

[2] Wage rates used to calculate these averages represent those available and payable only on July 1, 1980, and do not include later increases retroactive to that date or before. Such retroactive increases are included in the wage rates reported in the following year's survey. Averages were developed by weighting the top rate of length-of-service progressions that ended at 3 years or less for each occupation in each contract by the number of union members at that rate on the survey date. In seven cities where progressions extended beyond 3 years, all contract-stipulated rates, and associated union membership, at steps of 3 years or beyond were included in the averages.

NOTE: Variations in the size of annual increases from survey to survey may reflect, in part, timing of negotiations. Dashes indicate no change in rate.

vice. Wage rate averages in table 1 were usually based on the top rate of the pay structure reported in each labor-management agreement within an individual city studied.[2] To develop averages, the rates at or near the top of the progression were weighted by the number of employees at these rates (about 65,100 total). Distributions of wage rates developed by the study and year-to-year wage changes also relate only to union members at these rates. For national and regional wage averages, the 62 cities studied were appropriately weighted to reflect union rates of local-transit operating employees in all cities with populations of 100,000 or more.

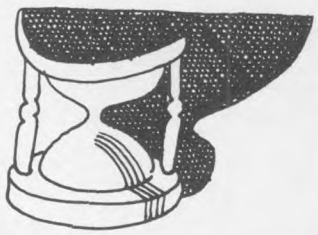
A comprehensive report, *Union Wages and Benefits: Local–Transit Operating Employees, July 1980,* BLS Bulletin 2117, is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. □

FOOTNOTES

[1] Higher increases were reported in 1973–74 (11.5 percent) and 1974–75 (11.3 percent). Union wage rates included in the BLS surveys are the straight-time hourly rates agreed upon through collective bargaining between employers and unions. They do not include employer payments for vacations, holidays, or other purposes. Thus, they may not represent actual amounts earned by employees.

[2] A single top rate was used whenever the progression ended at 3 years or less—in 55 out of 62 cities. For progressions extending beyond 3 years, all contract-stipulated rates, and associated union membership, at steps of 3 years or beyond were included.

Major Agreements Expiring Next Month



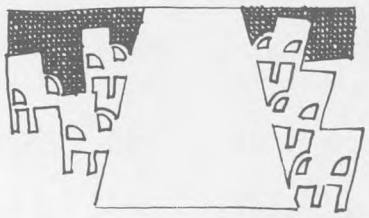
This list of collective bargaining agreements expiring in January is based on contracts on file in the Bureau's Office of Wages and Industrial Relations. The list includes agreements covering 1,000 workers or more.

Employer and location	Industry	Union[1]	Number of workers
American Cyanamid Co., Lederle Laboratories Division (Pearl River, N.Y.)	Chemicals	Chemical Workers	1,450
American Insulated Wire Corp. & Northeast Cable Corp. (Massachusetts and Rhode Island)	Primary metals	Electrical Workers (IBEW)	1,300
Atlantic Richfield Co. and Arco Pipeline Co. (Interstate)	Petroleum	Oil, Chemical and Atomic Workers	3,200
Atlantic Richfield Co. (California)	Petroleum	Oil, Chemical and Atomic Workers	1,200
Bowen–McLaughlin–York Co., Division of Harsco Corp. (York, Pa.)	Transportation equipment	Auto Workers	1,800
Bulova Watch Co., Inc. (New York)	Instruments	Maintenance and Service Employees (Ind.)	1,250
Chevron U.S.A. Inc., Richmond Refinery (Richmond, Va.)	Petroleum	Oil, Chemical and Atomic Workers	1,050
Desota Inc., Jackson Furniture Division (Jackson, Miss.)	Furniture	Carpenters	1,300
Dupont E.I. De Nemours and Co. (Martinsville, Va.)	Chemicals	Martinsville Nylon Employees' Council Corporation (Ind.)	2,850
First National Stores, Inc., 2 agreements (Massachusetts)	Retail trade	Food and Commercial Workers	3,350
Food Employers Council, Inc. (Los Angeles, Calif.)	Retail trade	Service Employees	1,150
Government Services, Inc. (Maryland, D.C., and Virginia)	Restaurants	Hotel and Restaurant Employees	1,100
Gulf Oil Co., U.S. Port Arthur Refinery (Port Arthur, Tex.)	Petroleum	Oil, Chemical and Atomic Workers	2,500
Independent Meat Markets (Missouri and Illinois)[2]	Retail trade	Food and Commercial Workers	1,000
ITT Gwaltney, Inc. (Smithfield, Va.)	Food products	Teamsters (Ind.)	1,300
Mobil Oil Corp., Beaumont Refinery Yard Unit (Texas)	Petroleum	Oil, Chemical and Atomic Workers	1,550
National Union Electrical Corp., Eureka Division (Illinois)	Electrical products	Machinists	1,500
Northern Illinois Gas Company	Utilities	Electrical Workers (IBEW)	1,800
Northrop World Wide Aircraft Services, Inc. (Alabama)	Air transportation	Machinists	1,200
Pineapple Companies, Factory and Plantations (Hawaii)[2]	Food products	Longshoremen and Warehousemen	4,200
Shell Oil Company (California)	Petroleum	Oil, Chemical and Atomic Workers	1,150
Sugar Cos., Negotiating Committee (Hawaii)	Food products	Longshoremen and Warehousemen	9,000
Sun Shipbuilding and Dry Dock Company (Chester, Pa.)	Transportation equipment	Boilermakers	2,800
Sunbeam Corp., Sunbeam Appliance Co. (Chicago, Ill.)	Electrical products	Machinists	1,050
Weyerhaeuser Company (Oklahoma and Arkansas)	Lumber	Woodworkers	2,000

[1] Affiliated with AFL–CIO except where noted as independent (Ind.).

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

Developments in Industrial Relations



Conrail employees forgo pay increases

The financially troubled Consolidated Rail Corp. gained a new lease on life when a majority of its 70,000 union-represented employees ratified restrictions on wage increases intended to save the carrier $200 million annually in the 3 years beginning April 1, 1981. Employees not represented by unions will forgo a matching portion of their pay increases, saving Conrail an additional $29 million during each year.

The agreement provided that all wage and benefit provisions of the coming national railroad settlement would apply to Conrail employees, except that wage increases (including cost-of-living adjustments) effective before January 1, 1982, will be paid only to the extent that their sum exceeds a 10-percent pay increase. Also, increases effective on or after January 1, 1982, will be paid to Conrail employees, but only to the extent that their sum exceeds a 12-percent pay increase.

The wage restrictions were specified in the Northeast Rail Service Act of 1981, which also provides for Conrail to receive $592 million in aid from the Federal Government, bringing the total to $3.9 billion since Conrail was formed in 1976 from six bankrupt railroads. The Reagan Administration had sought legislation that would have permitted a selloff of Conrail's freight and commuter operations within a few months after enactment, but the Northeast Rail Service Act provided for a longer delay. In 1983, the Secretary of Transportation will be permitted to sell Conrail in pieces if the carrier fails either of two financial tests. If it passes both, Conrail may be sold only as an entity until June 1, 1984, with Conrail employees having first right of refusal.

The legislation also permits Conrail to abandon unprofitable freight lines unless financial aid is received from State or local government units. (A subsidiary, Amtrak Commuter Services, was set up to operate commuter services on a contract basis for local transit agencies.) The act also permits Conrail to reduce employment levels, with affected employees to receive termination allowances of up to $25,000, calculated at $350 for each month of service, plus other types of benefits not to exceed $20,000. These benefits will be paid out of the new Federal aid that was designated for this purpose.

More concessions in rubber industry

Worker concessions on pay and work rules continued in the rubber industry, as two Rubber Workers locals agreed to revisions in their contracts with Goodyear Tire & Rubber Co. and Firestone Tire & Rubber Co.

The changes at Goodyear came after the company announced that it would close its 50-year-old air spring plant in Akron and would build a replacement plant in the area only if the workers agreed to cost-reduction measures. The changes saved about 80 jobs and could result in the addition of another 150 jobs at the new facility. The measures included an end to automatic cost-of-living adjustments, a $1.38 an hour reduction (to $8.62) in starting pay, and withdrawal of the operation from the companywide contract between the company and the union.

At Firestone, the concessions involved a small plant in Akron that mixes rubber for tire retreading. The 285 employees agreed to a $1 pay cut, consolidation of the 18 skilled trades job grades into 5, and adoption of a provision giving Firestone the right to operate the plant 7 days a week without paying a premium for weekend work. Despite the changes, Firestone did not guarantee that it would continue to operate the plant, which had been losing money. Earlier in the year, Firestone closed its last tiremaking plant in Akron.

The closing of an inner tube factory in Indianapolis, Ind., was temporarily averted when members of United Rubber Workers Local 110 agreed to an 11-percent pay cut and to suspension of the provision for automatic quarterly cost-of-living adjustments provided by the 3-year contract that had been negotiated earlier this year. The quarterly adjustments will be resumed and employees could retrieve some of the lost pay if Indianapolis Rubber Co. attains a specified level of profits. Company president Donald R. Alsop said that Indianapolis Rubber had experienced a decline in profits in

"Developments in Industrial Relations" is prepared by George Ruben and other members of the staff of the Division of Developments in Labor-Management Relations, Bureau of Labor Statistics, and is largely based on information from secondary sources.

each of the preceding 4 years and that the union concessions were needed to improve chances of winning renewal of a major sales contract.

The cut affected about 350 members of the local union and 80 nonunion salaried employees. Prior to the cut, production workers averaged about $9.07 an hour plus $2.70 in benefits.

Rubber Workers change leaders

Highlighting the 31st convention of the Rubber Workers was a change in presidency of the 150,000-member union, as Peter Bommarito confirmed his earlier decision not to seek a new term of office. Bommarito had directed the union for 15 years. Milan Stone, the international vice president of the union, was elected to the post. Stone joined the union in 1946 in Eau Claire, Wisc., held several union leadership posts in that area, joined the international union staff as a field representative in 1963, then moved up through several posts until he was appointed vice president in 1977.

Transport Workers discuss merger

At the Transport Workers 16th convention, delegates established a Mass Transit Division and adopted a resolution calling for consideration of a possible merger with the Amalgamated Transit Union. The new division will parallel the structure of the existing Railroad Division and the Air Transport Division. It will, according to the resolution, engage in "the formulation and coordination of efforts to meet the needs of our mass transit members on pay, hours, benefits, and working conditions." Union president William G. Lindner and other officers were elected for new 2-year terms.

Five unions coordinate bargaining

Five unions used a coordinated approach in bargaining with the Square D Co. for workers at 27 plants in 14 States. The tactic, first used by the unions in 1975, has resulted in uniform benefits at the plants. Although pay rates are not uniform, the accord did provide for the same pay increases at all locations. The wage-and-benefit package was valued at $3.52 an hour, including automatic quarterly cost-of-living adjustments calculated on the assumption that the Consumer Price Index will rise 11 percent a year during the period.

The accord provided for "set" increases of 62 cents an hour effective immediately, 34 cents on the first anniversary, and 33 cents on the second. According to the unions, pay averaged $7.84 an hour prior to the settlement. Benefit changes included a new paid personal leave plan giving employees 4 days off in the first and second years and 5 in the third year; a new prescription drug plan; and dental coverage for employees and dependents.

The unions involved in the talks were the International Brotherhood of Electrical Workers (representing 3,800 workers), the Machinists (1,600), the Teamsters (375), the Molders (190), and the Auto Workers (70).

Federal pay goes up

There were several important decisions affecting Federal employees: white-collar workers received a 4.8-percent salary increase; military personnel received a larger increase; and the frequency of automatic cost-of-living adjustments in pensions for retirees was reduced.

The 4.8-percent increase for 1.4 million employees under the General Schedule pay system was effective under provisions of the Federal Pay Comparability Act of 1970. Under the act, the President's pay agent (the Director of the Office of Personnel Management, the Director of the Office of Management and Budget, and the Secretary of Labor) determined that a 15.1-percent increase would be necessary for Federal white-collar employees to attain pay comparability with equivalent occupations in the private economy. This finding was derived from the Bureau of Labor Statistics' annual survey of professional, administrative, technical, and clerical pay.

However, President Reagan, using his authority under the act, proposed a 4.8-percent increase to the Congress. Either the House of Representatives or the Senate could have rejected the proposal, and the President would have had to put into effect an increase "in accord with the comparability principle"—presumably that recommended by the pay agent.

The President said the 4.8-percent increase was the estimated amount that would have resulted if the modifications to the act he had proposed to Congress in March had been enacted. The proposed modifications included basing the survey job comparisons on wage and benefit costs, instead of the existing wages-only comparisons; including State and local government employees in the survey; and determining the salaries for Federal clerical and lower-level technical employees through local surveys, instead of using the national results.

The increase ranged from $382 a year for employees in the first length of service step of pay grade 1 to $2,280 for employees in the third (of 10) step of grade 15. Employees in the top two steps of grade 14 and the fourth step of grade 15 received only part of the 4.8 percent increase because, by law, salaries for General Schedule employees cannot exceed the $50,112.50 salary of presidential appointees at the lowest level of the Executive Schedule. The limit precluded any increase for employees in the top 6 steps of grade 15 and all employees in grades 16, 17 and 18 and for those in the Senior Executive Service, established under the Civil Service Reform Act of 1978.

Under the Executive Salary Cost-of-Living Adjustment Act of 1975, members of the Congress and Executive Schedule personnel would have automatically received the 4.8-percent increase—which would have resulted in a matching increase for the General Schedule employees at the $50,112.50 limit. However, the Congress voted to forgo the increase. Federal judges, who also are covered by the Cost-of-Living Adjustment Act, did receive the increase, because Congress' decision to forgo the increase came 27 minutes after the start of the fiscal year. This brief delay permitted the increase to go into effect and it could not be withdrawn because of a constitutional clause prohibiting Congress from reducing salaries of sitting judges.

About 450,000 Federal blue-collar workers will receive a 4.8-percent pay increase. Their pay is adjusted annually, based on comparisons with prevailing local pay rates for the same occupations in the private economy. However, special legislation and a presidential order limits their pay increase to 4.8 percent.

A linkage to white-collar pay changes usually applies to the 2 million members of the Armed Forces, but the Congress legislated a larger pay increase to make military service more attractive. The increases range from 10 percent for recruits to 17 percent for senior sergeants and petty officers; commissioned officers received a 14.3-percent increase. The act also provided for a 14.3-percent increase in housing and food allowances and for special bonuses and allowances to help attract and retain personnel with certain critical skills.

A new merit pay system was scheduled to become effective in October for white-collar supervisors and managers in General Schedule grades 13, 14 and 15. However, the Administration delayed the change after the General Accounting Office, Congress' investigative arm, asserted that the performance rating systems established by some agencies were not consistent with the requirements of the Civil Service Reform Act. As a result, all supervisors and managers in the three grades received a 4.8-percent increase in October, with some receiving more based on their performance. These merit increases were financed by a pool of money made available by the termination of length of service step increases for supervisors and managers in the three grades. Under the delayed plan, the employees would have been guaranteed only half of the 4.8-percent increase and the other half, plus the money resulting from the termination of step increases, would have formed a larger money pool for merit increases.

Pensions for Federal retirees will be adjusted annually in March, beginning in 1982. Previously, the adjustments were semiannual in March and September. (Retirees did not receive the September 1981 adjustment.) The new law provides for each of the March adjustments to equal the percentage change in the BLS Consumer Price Index for Urban Wage Earners and Clerical Workers during the 12-month period ending with the preceding December.

Transit workers get cost-of-living raise

More than 33,000 New York City transit employees received a scheduled 36-cent-an-hour cost-of-living adjustment after a panel certified that the transit authority and the two unions involved had agreed on the required $16.8 million in cost reductions to offset the adjustment. The offset provision was required by the transit authority's 1980 settlement with the Transport Workers Union, which represents 31,000 of the employees, and with the Amalgamated Transit Union.

A Transport Workers official said the cost reduction moves included a 500-person cut in the workforce through attrition or by shifting employees to new jobs without filling their old jobs; consolidation of some operations in one shop; and adoption of new output standards on some jobs.

The New York (State) Public Employment Relations Board suspended for 18 months the dues-checkoff right of the two unions for engaging in the 11-day strike that preceded the 1980 settlement. The board said the walkout was the most serious violation in the history of the Taylor Act, which prohibits strikes by public workers.

John E. Lowe, president of Local 100 of the Transport Workers, said the decision to require the unions to collect dues on a person-by-person basis would be appealed to the courts. He pointed out that the unions and their officers already had been fined $1.25 million for the strike and that individual employees also had been fined 1 day of pay for each day they were out.

California wine workers settle

In the Napa Valley of California, four wineries and the United Farm Workers negotiated contracts for 300 grape workers. The 3-year accord with Christian Brothers Winery, patterned after a contract the union negotiated with Napa Valley Vintners in October 1980, featured a $2.10-immediate increase in the minimum hourly pay rate, bringing it to $6.20. In August 1982, the minimum will increase by 50 cents with a possible cost-of-living adjustment of up to 20 cents. Piecework rates for pickers were increased by 18 percent effective immediately, followed by an 8-percent increase in August 1982 and a 10-percent increase in August 1983.

The agreement also provided for the reopening of bargaining on wages and medical benefits in January 1983 (when the Napa Valley Vintners' contract expires) and for Christian Brothers to continue paying the full cost of medical, vision, and dental care benefits, which were improved.

Other employers settling were Charles Krug Winery and St. Regis Vineyards (both for 1-year terms), and Trefethen Winery (for a 3-year term).

Restaurant contract may set pattern

In San Francisco, 4,000 restaurant employees will receive wage increases ranging from 39 to 45 percent as a result of a settlement between the Golden Gate Restaurant Association and Local 2 of the Hotel and Restaurant Employees. The increases, to be implemented in three steps over the 3-year contract term, will bring the 8-hour shift rates to $46.55 for dishwashers, $37.55 for waiters' assistants, $70.20 for bartenders, $58.20 for cooks, and $36.10 for food servers. Prior to the settlement, the respective rates were $32.55, $25.90, $50.45, $41.40, and $25.90. There also were improvements in paid holiday, sick leave, and jury duty provisions. Health and welfare and pension benefits were to be negotiated later. The contract covered 125 restaurants, and was expected to influence bargaining at 825 other restaurants employing 7,000 members of the union.

Food store workers accept two-level pay structure

In the Michigan food store industry, a 3-year contract between Meijer Inc. and its 10,000 workers created a two-level pay structure under which workers in Eastern Michigan will receive 50 to 75 cents an hour more than those in Western Michigan. Company vice president Wendall Ray said that the pay differential was necessary for Meijer to compete effectively with the lower pay rates of nonunion chains and the smaller organized chains that are more common in Eastern Michigan. The Meijer employees are represented by the United Food and Commercial Workers.

Wage increases ranged from 7.2 to 8.2 percent at the beginning of the contract, with similar increases scheduled for the first and second anniversaries. After the initial increase, pay rates ranged from $3.95 an hour for bakery and ice cream clerks to $11.11 for meat cutters.

Department store workers settle

In the San Francisco area, Local 1100 of the Retail, Wholesale, and Department Store Employees Union negotiated 3-year contracts with the Macys and Emporium-Capwell department stores that provided for a total of $1.55 in wage increases. Prior to the settlement, pay rates ranged from $5.74 to $9.14 an hour. Local 1100 secretary-treasurer Dick Williams said that the settlement covered only 4,000 workers, but the union would use it as a model for bargaining with other stores in the area. Williams contended that 125,000 workers could ultimately be affected to some extent, including employees of nonunion stores that might raise wages to reduce the possibility of union organizing efforts.

Auto mechanics reach agreement, end strike

A 6-week strike against more than 200 automobile dealers ended when the Employers Association of Greater Chicago and Local 701 of the Machinists union reached agreement. The accord will raise the mechanics' pay rate to $12.80 an hour, from $10.35, over the 3-year term. The employers also agreed to raise their payments to the health and welfare and pensions funds to $28 and $22 a week, respectively, from $23 and $19, and to increase tool insurance coverage to $8,000, from $4,000. Terms of the settlement, which covered 2,900 mechanics, also were extended to employees of 45 dealers who are not members of the association.

'Voluntary separation' at Montgomery Ward

Several hundred managers at Montgomery Ward and & Co. were offered inducements under a "voluntary separation program" the company instituted to help improve its financial condition. Wards, a subsidiary of Mobil Corp., lost $133 million in fiscal 1980 and $75 million in the first half of fiscal 1981.

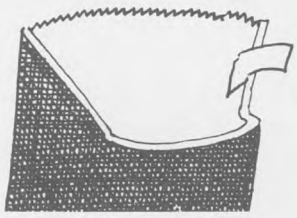
Under the voluntary plan, managers electing to leave Montgomery Ward receive separation pay equal to 5 percent of their annual salary for each year of service up to 30. The plan is limited to employees with at least 10 years of service.

Several industry observers hailed Ward's action, saying that a similar approach adopted by Sears, Roebuck & Co. earlier in the year had resulted in a smaller but more effective management team. (See *Monthly Labor Review*, April 1981, pp. 68–69, for details of Sears' retirement plan and for cost-reducing changes in retirement benefits at Wards.)

Company waives penalty for early retirement

In a cost-reduction action in the forest products industry, Crown Zellerbach Corp. eased pension eligibility requirements to induce salaried employees to retire early. The company said that curtailments and closings of noncompetitive facilities made it necessary to reduce the number of salaried personnel.

Under the one-time offer, eligible employees who retire prior to December 31, 1981, receive pensions calculated without the usual actuarial reduction for early retirement. In addition, they receive a $450-a-month supplemental payment until they reach age 65. The voluntary plan was limited to the 700 employees (out of 7,500 salaried employees) between age 58 and 65 with at least 5 years of service. Crown Zellerbach also agreed to continue certain health insurance for participants. □



Book Reviews

Bargaining in a nationalized industry

Wages Policy in the British Coal Mining Industry: A Study of National Wage Bargaining. By L. J. Handy. New York, Cambridge University Press, 1981. 313 pp., bibliography. $47.50.

This is an impressive study of the evolution of the structure and level of wages in British coal mining from nationalization of the industry in 1946 to 1974, with a postscript on the reintroduction of incentive wage payments in 1977. It is based on a rich body of wage data, hitherto unpublished, made available to the author by the National Coal Board, and on extensive consultation with miners, managers, and union officials in the coalfields.

In Britain, as in the United States, the postwar period presented difficult problems of adjustment for the coal mining industry. In 1946, coal supplied over 90 percent of the primary fuel requirements of the United Kingdom. But beginning in the late 1950's, the demand for coal began to decline sharply, reflecting increasing costs and competition from other fuels, primarily petroleum. By 1967, half of the pits that had existed in 1957 had been closed. Over the same period, a technological revolution occurred in the extraction of coal at the face and in other aspects of coal processing. Employment in the industry, which averaged about 700,000 men between 1947 and 1957, fell below 300,000 by the early 1970's.

Reform of the wage structure, especially in terms of uniform rates of pay, was made more difficult by the great diversity of the British industry in geographic location, type of coal, and geological conditions in the mining areas. Even within particular coalfields, wide variations are likely to be found in the thickness of seams and other aspects of coal geology. These factors help to explain why historically the determination of miners' pay had been decentralized in the collective bargaining process. The Miners' Federation of Great Britain (which reorganized into the present National Union of Mineworkers in 1945) was formed in 1886. It was a federation of relatively autonomous unions. Miners' pay consisted principally of two elements at the time of nationalization. Basic time or piece rates were negotiated locally and could vary from pit to pit within a locality. The second component, a percentage addition to basic rates, was determined on a wage district basis, and was designed to facilitate speedy adjustment of wage costs to the changing fortunes of the industry within the district. Wages thus varied from pit to pit and from coalfield to coalfield.

Nationalization had no immediate impact on the wage structure of the industry, but the National Coal Board and the National Union of Mineworkers were in agreement that a new structure should be established. Neither side, however, had clear ideas on the nature of wage structure reform except perhaps that, in some sense, there should be movement toward a national structure. In the event, approximately a quarter of a century was required to achieve this goal.

Handy describes and analyzes the gradual approach to the achievement of wage structure reform in illuminating detail. Gradualism was dictated by a variety of circumstances, including considerations of cost, changes in the product market and in coal technology, and, in some measure, conflicting National Coal Board and union wage objectives. Moreover, neither the Board nor the union initially had much factual information on wages actually paid in the industry, or on the appropriate groupings of jobs for pay purposes. The first major agreement on a national wage structure related to day-wage men, and was not reached until 1955. This was followed in 1966 by the abolition of piecework and the establishment of day rates for miners employed at the coal face. Finally, in 1971, uniform day wages were extended to workers employed on "elsewhere underground" piecework tasks.

Impetus was given to the process at critical points by the National Wage Tribunal (the arbitral body for wage disputes within the industry at the national level), and by the National Board for Prices and Incomes (established in 1965 as an arm of national incomes policy). The overall result of this quarter century of effort, the complexities of which are apparent from Handy's analysis, was a national structure of wage rates, the end of local autonomy in wage determination, and, with the shift to national bargaining, the creation of a strong central trade union organization.

A wage structure consisting entirely of time rates was

not, however, of long duration. In a postscript to the study, a brief account is given of the reintroduction of incentive payments in 1977. Adverse productivity experience during the first half of the 1970's was a major factor in this development; the National Coal Board believed also that ". . . an incentive scheme biased towards coal-face production workers would provide a useful, and probably less contentious, method of increasing the internal pay differential between them and other miners than would an attempt to do so in the annual wage round." It was thought that this would improve recruitment for work at the coal-face.

The scheme finally agreed upon by the Board and the union provided for specified incentive payments for coal-face workers for output beyond a basic task, established pit by pit, and for bonus payments to other workers fixed as an agreed proportion of the average incentive pay of a colliery or of a broader wage area. At least in the short run, the reintroduction of incentive pay in this form appears to have improved productivity, widened internal wage differentials, and increased the level of wages in mining relative to the level in other industries. It has, of course, reintroduced an element of local bargaining into the wage-setting process, and has made the total wage system less uniform.

In addition to analysis of the development of a national wage structure under public ownership, Handy deals also with changes in the general level of pay for coal miners relative to the level for adult male workers in other industries. Separate chapters of genuine interest are devoted to wage structure reform in relation to productivity, industrial relations, and labor mobility.

The reviewer knows of no study of comparable depth of the changes that have occurred during the postwar period in the structure of wages in coal mining in this country. But considerable insight can be gained from the Bureau of Labor Statistics Bituminous Coal Wage Chronology (Bulletin 1799 and Supplement), which outlines the results of collective bargaining in the industry from 1933 to 1977, and from several detailed occupational wage surveys of the industry, most recently for January 1976 (Bulletin 1999).

There do appear to be rough parallels in postwar wage structure development in the two countries. In the industry in the United States, as represented by the United Mine Workers and the Bituminous Coal Operators' Association, there is now, in effect, a uniform national wage structure with occupations slotted into a limited number of labor grades, each with a single rate. Differentials among labor grades for both underground and surface miners are comparatively quite narrow. Geographic wage differentials have been eliminated and incentive rates virtually ceased to exist by 1966. The reintroduction of incentive rates does not at present appear to be an issue in the American industry.

The question of industry ownership aside, there were similarities, but also differences, in the forces shaping the postwar wage structures in coal mining in the two countries. Handy has given us a splendid analysis of British experience, the full scope and insight of which cannot be reflected in a brief review. His study should be of interest to anyone concerned with wage structure problems, and one hopes that its price will not prove a deterrent to the circulation it deserves.

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The tax maze

Financing Government in a Federal System. By George F. Break. Washington, The Brookings Institution, 1980. 276 pp.

In 1965, the Brookings Institution held a conference to address the major problems of intergovernmental finance and to propose solutions to those problems. George F. Break prepared a manuscript to serve as a background paper for the conference. In that manuscript, published by Brookings in 1967 and entitled *Intergovernmental Fiscal Relations in the United States,* Break emphasized the need for more coordination among Federal, State, and local governments in fiscal matters and stressed that State and local governments would need stronger fiscal support from the Federal government in the future. In *Financing Government in a Federal System,* the author surveys trends in intergovernmental finance and reassesses the problems of finance in a Federal system.

In his introductory chapter, the author discusses developments in receipts and expenditures at the Federal, State, and local levels. Two of the most pronounced trends are the rising importance of the individual income tax as a share of own-source taxes at all levels of government and the increased importance of Federal grants as a source of revenue to State and local governments. The author also delineates the three central issues in the book: intergovernmental tax coordination; intergovernmental grants; and fiscal problems in urban areas.

Break describes two types of intergovernmental tax coordination problems—vertical overlapping, which is characterized by different levels of government separately taxing the same tax base, and horizontal overlapping, which is characterized by businesses and individuals carrying out economic activities in different taxing jurisdictions at the same level of government. An example of horizontal tax overlapping is an individual working in one jurisdiction, but living in another. Break argues that " . . . not coordinating State and local taxing activ-

ity . . . can seriously impair . . . economic efficiency . . . and is quite likely to place inequitable burdens on different taxpayers." He proposes several solutions to vertical overlapping, including complete separation of tax bases, in which different levels of government are given exclusive jurisdiction over a type of tax. An alternative solution is the coordination of tax administration and tax bases, in which similar or identical tax bases are taxed and jointly administered by all levels of government. In cases of horizontal overlapping, the author argues that taxes should be based on the benefits-received principle. Break suggests a number of ways to coordinate the apportionment of individual and business income among jurisdictions to reflect benefits received. He concludes that a more effectively coordinated tax system would strengthen the economy and would considerably improve the revenue-raising powers of State and local governments by improving administrative efficiency and lowering administrative costs.

In chapters 3 and 4, the author discusses intergovernment grants in the United States. He notes that the basic justifications for grants rest on the grounds of benefit spillovers (for example, when benefits from State or local government services accrue to those who do not pay for them) and on the grounds of redistribution to alleviate fiscal imbalances among levels of government (vertical imbalances) or among jurisdictions at the same level of government (horizontal imbalances). The author then describes three types of grants: Federal categorical grants-in-aid (specific programmatic grants), general revenue sharing (broad-based general purpose grants), and block grants (grants covering broad functional areas).

The author points out that categorical grants, such as medicaid, remain the predominant form of Federal aid to State and local governments. He recommends greater coordination or consolidation of the myriad of categorical grants, although previous attempts in the late 1960's and 1970's met with little success. Break comments that the second type of grants, general revenue sharing, was conceived when the Federal Government showed budget surpluses; by the time it was implemented in 1972, the surpluses had disappeared. The author contends that revenue sharing has "had little or no impact on either political processes or governmental structure," although "its effectiveness . . . would be strengthened if the program were given greater financial support."

The final major category, block grants, which were first established in 1966, was designed to consolidate programs into broader functional areas to reduce administrative costs and to increase the flexibility of specific program selection by State and local goverments. The author comments that even though block grants have frequently been accompanied by earmarking and guidelines, the critical consideration is which State or local governments receive funds rather than what those funds are for. The author then describes several alternative approaches to the allocation process for block grants.

In the final chapter, Break describes urban fiscal problems. The beginning of the chapter covers urban expenditures and describes the voluminous literature on the determinants of those expenditures. He concludes that "the contributions of this large body of literature to . . . designing better urban policies are modest at best." In his discussion of urban revenues, he points out that local government reform should be based on the benefits-received principle. Reform measures should include shifting all financing responsibility for welfare to State and Federal governments and the restructuring of local governmental units to improve geographical matching between service areas and tax bases. Finally, he discusses the implications of tax and expenditure limiting measures, such as California's tax-limiting Proposition 13. With respect to Proposition 13, he concludes that Proposition 13 "is not . . . a particularly effective way of limiting the growth of government spending or making it more efficient . . ." and "it adds some new problems of its own such as the equity issue, which will become more and more troublesome."

Break's book covers a wide variety of topics surrounding the broad issues of intergovernmental finance. His discussion on receipts is not an update of his earlier work, but merely a reiteration. The difference between the current book and his earlier manuscript centers on the discussions of grants and urban economic problems.

A book addressing intergovernmental fiscal relations with emphasis on grants and urban finance is timely since the present Administration has proposed (and in some cases implemented) major changes in the role of the Federal Government in these areas. The author goes to great lengths to detail alternative allocation methods for aid to State and local governments, with particular emphasis on recommendations by the Advisory Commission on Intergovernmental Relations (ACIR). The author's stress on details is a weakness in the book. At times, it appears as though he is attempting to splice new details into the core of his earlier manuscript. This makes some sections confusing and awkward. For readers who are interested in broader questions of shifts in intergovernmental fiscal relations within the last 10 to 15 years and preferred future policy directions, it is difficult to emerge from this book with clear insights.

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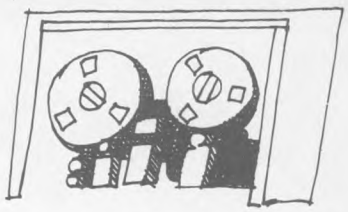
Current Labor Statistics



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 2–7 were revised in the February 1981 issue of the *Review* to reflect the preceding year's experience. 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 in tables 11, 13, 16, and 18 begins with the August 1980 issue using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in tables 33 and 34 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 × 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. The *BLS Handbook of Labor Statistics*, Bulletin 2070, provides more detailed data and greater historical coverage for most of the statistical series presented in the *Monthly Labor Review*. More information from the household and establishment surveys is provided in *Employment and Earnings*, a monthly publication of the Bureau, and in two comprehensive data books issued annually—*Employment and Earnings, United States* and *Employment and Earnings, States and Areas*. 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 major BLS statistical series

Series	Release date	Period covered	Release date	Period covered	MLR table number
Employment situation	November 6	October	December 4	November	1–11
Producer Price Index	November 10	October	December 8	November	26–30
Consumer Price Index	November 24	October	December 22	November	22–25
Real earnings	November 24	October	December 22	November	14–20
Productivity and costs:					
Nonfinancial corporations	November 25	3d quarter	...	...	31–34
Labor turnover in manufacturing	November 30	October	December 29	November	12–13
Work stoppages	November 30	October	December 30	November	37

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 beginning in May 1981, 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 are (1) those 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. 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 **unemployment rate** represents the number unemployed as a percent of the civilian labor force.

The **civilian labor force** consists of all employed or unemployed persons in the civilian noninstitutional population; the **total labor force** includes military personnel. Persons **not in the labor force** are those not classified as employed or unemployed; this group includes persons 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.

Full-time workers are those employed at least 35 hours a week; **part-time workers** are those who work fewer hours. Workers on part-time schedules for economic reasons (such as slack work, terminating or starting a job during the week, material shortages, or inability to find full-time work) are among those counted as being on full-time status, under the assumption that they would be working full time if conditions permitted. The survey classifies unemployed persons in full-time or part-time status by their reported preferences for full-time or part-time work.

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 2–7 are seasonally adjusted, based on the seasonal experience through December 1980.

1. Employment status of the noninstitutional population, 16 years and over, selected years, 1950–80

[Numbers in thousands]

Year	Total non-institutional population	Total labor force		Civilian labor force						Not in labor force
		Number	Percent of population	Total	Employed			Unemployed		
					Total	Agriculture	Nonagri-cultural industries	Number	Percent of labor force	
1950	106,645	63,858	59.9	62,208	58,918	7,160	51,758	3,288	5.3	42,787
1955	112,732	68,072	60.4	65,023	62,170	6,450	55,722	2,852	4.4	44,660
1960	119,759	72,142	60.2	69,628	65,778	5,458	60,318	3,852	5.5	47,617
1964	127,224	75,830	59.6	73,091	69,305	4,523	64,782	3,786	5.2	51,394
1965	129,236	77,178	59.7	74,455	71,088	4,361	66,726	3,366	4.5	52,058
1966	131,180	78,893	60.1	75,770	72,895	3,979	68,915	2,875	3.8	52,288
1967	133,319	80,793	60.6	77,347	74,372	3,844	70,527	2,975	3.8	52,527
1968	135,562	82,272	60.7	78,737	75,920	3,817	72,103	2,817	3.6	53,291
1969	137,841	84,240	61.1	80,734	77,902	3,606	74,296	2,832	3.5	53,602
1970	140,182	85,903	61.3	82,715	78,627	3,462	75,165	4,088	4.9	54,280
1971	142,596	86,929	61.0	84,113	79,120	3,387	75,732	4,993	5.9	55,666
1972	145,775	88,991	61.0	86,542	81,702	3,472	78,230	4,840	5.6	56,785
1973	148,263	91,040	61.4	88,714	84,409	3,452	80,957	4,304	4.9	57,222
1974	150,827	93,240	61.8	91,011	83,935	3,492	82,443	5,076	5.6	57,587
1975	153,449	94,793	61.8	92,613	84,783	3,380	81,403	7,830	8.5	58,655
1976	156,048	96,917	62.1	94,773	87,485	3,297	84,188	7,288	7.7	59,130
1977	158,559	99,534	62.8	97,401	90,546	3,244	87,302	6,855	7.0	59,025
1978	161,058	102,537	63.7	100,420	94,373	3,342	91,031	6,047	6.0	58,521
1979	163,620	104,996	64.2	102,908	96,945	3,297	93,648	5,963	5.8	58,623
1980	166,246	106,821	64.3	104,719	97,270	3,310	93,960	7,448	7.1	59,425

2. Employment status by sex, age, and race, seasonally adjusted

[Numbers in thousands]

Employment status	Annual average		1980			1981									
	1979	1980	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
TOTAL															
Total noninstitutional population[1]	163,620	166,246	167,005	167,201	167,396	167,585	167,747	167,902	168,071	168,272	168,480	168,685	168,855	169,049	169,252
Total labor force	104,996	106,821	107,288	107,404	107,191	107,668	107,802	108,305	108,851	109,533	108,307	108,603	108,762	108,401	108,893
Civilian noninstitutional population[1]	161,532	164,143	164,884	165,082	165,272	165,460	165,627	165,774	165,941	166,145	166,349	166,546	166,695	166,884	167,095
Civilian labor force	102,908	104,719	105,167	105,285	105,067	105,543	105,681	106,177	106,722	107,406	106,176	106,464	106,602	106,236	106,736
Employed	96,945	97,270	97,206	97,339	97,282	97,696	97,927	98,412	98,976	99,235	98,392	98,962	98,944	98,270	98,217
Agriculture	3,297	3,310	3,319	3,340	3,394	3,403	3,281	3,276	3,463	3,353	3,265	3,258	3,370	3,310	3,337
Nonagricultural industries	93,648	93,960	93,887	93,999	93,888	94,294	94,646	95,136	95,513	95,882	95,127	95,704	95,574	94,959	94,880
Unemployed	5,963	7,448	7,961	7,946	7,785	7,847	7,754	7,764	7,746	8,171	7,784	7,502	7,657	7,966	8,520
Unemployment rate	5.8	7.1	7.6	7.5	7.4	7.4	7.3	7.3	7.3	7.6	7.3	7.0	7.2	7.5	8.0
Not in labor force	58,623	59,425	59,717	59,797	60,205	59,917	59,946	59,598	59,219	58,739	60,173	60,082	60,093	60,648	60,359
Men, 20 years and over															
Civilian noninstitutional population[1]	68,293	69,607	69,987	70,095	70,198	70,320	70,413	70,481	70,574	70,687	70,788	70,894	70,978	71,086	71,208
Civilian labor force	54,486	55,234	55,495	55,539	55,470	55,443	55,445	55,816	56,013	56,395	55,876	55,957	56,045	56,063	56,100
Employed	52,264	51,972	51,963	52,007	52,045	52,091	52,134	52,511	52,750	52,849	52,451	52,811	52,724	52,608	52,327
Agriculture	2,350	2,355	2,351	2,372	2,331	2,378	2,289	2,296	2,409	2,349	2,320	2,329	2,402	2,343	2,388
Nonagricultural industries	49,913	49,617	49,612	49,635	49,714	49,713	49,844	50,215	50,342	50,500	50,131	50,482	50,323	50,264	49,939
Unemployed	2,223	3,261	3,532	3,532	3,425	3,352	3,312	3,305	3,262	3,546	3,425	3,147	3,321	3,455	3,733
Unemployment rate	4.1	5.9	6.4	6.4	6.2	6.0	6.0	5.9	5.8	6.3	6.1	5.6	5.9	6.2	6.7
Not in labor force	13,807	14,373	14,492	14,556	14,728	14,877	14,968	14,665	14,561	14,292	14,912	14,937	14,933	15,023	15,108
Women, 20 years and over															
Civilian noninstitutional population[1]	76,860	78,295	78,723	78,842	78,959	79,071	79,175	79,271	79,377	79,498	79,617	79,739	79,848	79,968	80,095
Civilian labor force	38,910	40,243	40,486	40,629	40,570	40,942	41,090	41,293	41,481	41,852	41,743	41,879	41,857	41,395	41,911
Employed	36,698	37,696	37,754	37,909	37,820	38,191	38,410	38,567	38,760	39,014	39,011	39,082	39,155	38,576	38,958
Agriculture	591	575	576	574	665	621	615	606	603	583	562	575	601	603	583
Nonagricultural industries	36,107	37,120	37,178	37,335	37,155	37,570	37,794	37,961	38,157	38,431	38,449	38,507	38,554	37,973	38,376
Unemployed	2,213	2,547	2,732	2,720	2,750	2,750	2,680	2,725	2,721	2,838	2,731	2,797	2,701	2,819	2,953
Unemployment rate	5.7	6.3	6.7	6.7	6.8	6.7	6.5	6.6	6.6	6.8	6.5	6.7	6.5	6.8	7.0
Not in labor force	37,949	38,052	38,237	38,213	38,389	38,129	38,085	37,978	37,896	37,646	37,874	37,860	37,991	38,573	38,184
Both sexes, 16 to 19 years															
Civilian noninstitutional population[1]	16,379	16,242	16,174	16,145	16,114	16,069	16,039	16,022	15,991	15,961	15,944	15,913	15,869	15,831	15,792
Civilian labor force	9,512	9,242	9,186	9,117	9,027	9,158	9,146	9,068	9,228	9,159	8,558	8,628	8,700	8,778	8,724
Employed	7,984	7,603	7,489	7,423	7,417	7,414	7,384	7,334	7,465	7,372	6,930	7,069	7,065	7,086	6,931
Agriculture	356	380	392	394	398	404	376	374	451	421	383	354	368	364	366
Nonagricultural industries	7,628	7,223	7,097	7,029	7,019	7,010	7,008	6,960	7,014	6,951	6,547	6,715	6,697	6,722	6,565
Unemployed	1,528	1,640	1,697	1,694	1,610	1,744	1,762	1,734	1,763	1,787	1,628	1,559	1,635	1,692	1,793
Unemployment rate	16.1	17.7	18.5	18.6	17.8	19.0	19.3	19.1	19.1	19.5	19.0	18.1	18.8	19.3	20.6
Not in labor force	6,867	7,000	6,988	7,028	7,087	6,911	6,893	6,954	6,763	6,802	7,386	7,285	7,169	7,053	7,068
White															
Civilian noninstitutional population[1]	141,614	143,657	144,211	144,359	144,500	144,651	144,774	144,882	145,006	145,160	145,316	145,464	145,575	145,715	145,871
Civilian labor force	90,602	92,171	92,516	92,562	92,383	92,832	93,035	93,313	93,860	94,506	93,464	93,767	93,789	93,355	93,845
Employed	86,025	86,380	86,371	86,409	86,377	86,620	86,940	87,291	87,791	88,083	87,500	87,979	88,046	87,329	87,344
Unemployed	4,577	5,790	6,145	6,153	6,006	6,213	6,095	6,022	6,069	6,422	5,964	5,787	5,743	6,026	6,501
Unemployment rate	5.1	6.3	6.6	6.6	6.5	6.7	6.6	6.5	6.5	6.8	6.4	6.2	6.1	6.5	6.9
Not in labor force	51,011	51,486	51,695	51,797	52,117	51,819	51,739	51,569	51,146	50,654	51,852	51,697	51,786	52,360	52,026
Black and other															
Civilian noninstitutional population[1]	19,918	20,486	20,673	20,723	20,771	20,809	20,853	20,892	20,936	20,985	21,033	21,081	21,120	21,169	21,224
Civilian labor force	12,306	12,548	12,686	12,706	12,668	12,684	12,598	12,765	12,899	12,895	12,741	12,658	12,793	12,872	12,913
Employed	10,920	10,890	10,884	10,922	10,895	11,051	10,942	11,020	11,193	11,138	10,928	10,939	10,877	10,924	10,905
Unemployed	1,386	1,658	1,802	1,784	1,773	1,634	1,655	1,745	1,706	1,757	1,813	1,719	1,916	1,948	2,008
Unemployment rate	11.3	13.2	14.2	14.0	14.0	12.9	13.1	13.7	13.2	13.6	14.2	13.6	15.0	15.1	15.5
Not in labor force	7,612	7,938	7,987	8,017	8,103	8,125	8,255	8,127	8,037	8,090	8,292	8,423	8,327	8,297	8,311

[1] As in table 1, population figures are not seasonally adjusted.

3. Selected employment indicators, seasonally adjusted

[Numbers in thousands]

Selected categories	Annual average		1980			1981									
	1979	1980	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
CHARACTERISTIC															
Total employed, 16 years and over	96,945	97,270	97,206	97,339	97,282	97,696	97,927	98,412	98,976	99,235	98,392	98,962	98,944	98,270	98,217
Men	56,499	55,988	55,881	55,897	55,920	56,012	56,045	56,383	56,688	56,718	56,026	56,494	56,368	56,349	56,046
Women	40,446	41,283	41,325	41,442	41,362	41,684	41,882	42,029	42,288	42,517	42,366	42,467	42,577	41,920	42,171
Married men, spouse present	39,090	38,302	38,142	38,167	38,231	38,182	38,113	38,365	38,510	38,498	38,216	38,283	38,315	38,169	38,059
Married women, spouse present	22,724	23,097	22,993	23,065	23,063	23,352	23,356	23,513	23,529	23,831	23,763	23,820	23,683	23,174	23,399
OCCUPATION															
White-collar workers	49,342	50,809	51,101	51,148	51,065	51,594	51,698	51,746	51,801	51,967	51,959	51,857	52,123	51,826	52,104
Professional and technical	15,050	15,613	15,780	15,863	15,810	15,965	15,813	15,827	15,754	15,688	16,057	15,966	16,299	16,254	16,347
Managers and administrators, except farm	10,516	10,919	10,979	11,016	11,009	11,363	11,488	11,565	11,444	11,260	11,174	11,418	11,217	11,341	11,434
Salesworkers	6,163	6,172	6,277	6,155	6,175	6,265	6,271	6,220	6,145	6,461	6,440	6,220	6,369	6,295	6,225
Clerical workers	17,613	18,105	18,065	18,114	18,071	18,001	18,125	18,135	18,457	18,557	18,288	18,254	18,238	17,937	18,099
Blue-collar workers	32,066	30,800	30,521	30,550	30,373	30,338	30,446	30,594	31,156	31,373	30,922	31,038	31,113	30,637	30,222
Craft and kindred workers	12,880	12,529	12,485	12,424	12,337	12,306	12,386	12,605	12,624	12,743	12,482	12,575	12,508	12,202	12,124
Operatives, except transport	10,909	10,346	10,210	10,247	10,194	10,331	10,390	10,189	10,524	10,609	10,550	10,567	10,501	10,334	10,187
Transport equipment operatives	3,612	3,468	3,443	3,429	3,402	3,322	3,361	3,363	3,411	3,390	3,425	3,481	3,499	3,453	3,530
Nonfarm laborers	4,665	4,456	4,383	4,450	4,440	4,380	4,309	4,437	4,596	4,632	4,466	4,415	4,605	4,649	4,381
Service workers	12,834	12,958	12,891	12,888	12,982	12,946	13,070	13,279	13,255	13,213	12,930	13,284	13,002	13,093	13,231
Farmworkers	2,703	2,704	2,735	2,729	2,804	2,737	2,662	2,679	2,834	2,707	2,648	2,689	2,732	2,717	2,752
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture:															
Wage and salary workers	1,413	1,384	1,363	1,417	1,411	1,465	1,336	1,338	1,524	1,464	1,377	1,457	1,472	1,416	1,470
Self-employed workers	1,580	1,628	1,640	1,612	1,655	1,615	1,610	1,615	1,648	1,644	1,657	1,568	1,629	1,649	1,616
Unpaid family workers	304	297	325	324	305	284	325	312	290	231	258	235	250	254	264
Nonagricultural industries:															
Wage and salary workers	86,540	86,706	86,587	86,643	86,513	87,125	87,236	87,870	88,195	88,877	87,734	88,291	88,189	87,457	87,556
Government	15,369	15,624	15,597	15,651	15,653	15,738	15,589	15,685	15,628	15,512	15,460	15,349	15,140	15,111	15,151
Private industries	71,171	71,081	70,990	70,992	70,860	71,387	71,647	72,185	72,567	73,365	72,274	72,942	73,048	72,346	72,405
Private households	1,240	1,166	1,144	1,148	1,110	1,197	1,176	1,235	1,241	1,164	1,146	1,211	1,236	1,052	1,114
Other industries	69,931	69,915	69,846	69,844	69,750	70,190	70,471	70,949	71,327	72,201	71,128	71,731	71,812	71,294	71,291
Self-employed workers	6,652	6,850	7,005	6,943	6,973	6,839	6,923	6,896	7,021	6,761	7,005	6,886	6,942	7,093	7,033
Unpaid family workers	455	404	417	405	396	422	371	354	306	338	369	389	378	392	448
PERSONS AT WORK [1]															
Nonagricultural industries	88,133	88,325	88,488	88,694	88,468	89,499	89,441	89,583	89,202	89,870	89,625	90,837	89,823	88,886	89,448
Full-time schedules	72,647	72,022	72,071	72,265	72,131	72,807	72,945	72,875	72,761	73,375	73,115	74,232	72,932	72,192	72,187
Part time for economic reasons	3,281	3,965	4,220	4,176	4,218	4,474	4,145	4,227	4,044	4,143	3,798	4,225	4,187	4,537	5,026
Usually work full time	1,325	1,669	1,685	1,620	1,647	1,698	1,622	1,638	1,517	1,630	1,367	1,632	1,654	1,675	2,023
Usually work part time	1,956	2,296	2,535	2,556	2,571	2,776	2,523	2,589	2,527	2,513	2,431	2,593	2,533	2,862	3,003
Part time for noneconomic reasons	12,205	12,338	12,197	12,253	12,119	12,218	12,351	12,481	12,397	12,352	12,713	12,380	12,704	12,157	12,235

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

4. Selected unemployment indicators, seasonally adjusted

[Unemployment rates]

Selected categories	Annual average		1980			1981									
	1979	1980	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
CHARACTERISTIC															
Total, 16 years and over	5.8	7.1	7.6	7.5	7.4	7.4	7.3	7.3	7.3	7.6	7.3	7.0	7.2	7.5	8.0
Men, 20 years and over	4.1	5.9	6.4	6.4	6.2	6.0	6.0	5.9	5.8	6.3	6.1	5.6	5.9	6.2	6.7
Women, 20 years and over	5.7	6.3	6.7	6.7	6.8	6.7	6.5	6.6	6.6	6.8	6.5	6.7	6.5	6.8	7.0
Both sexes, 16 to 19 years	16.1	17.7	18.5	18.6	17.8	19.0	19.3	19.1	19.1	19.5	19.0	18.1	18.8	19.3	20.6
White, total	5.1	6.3	6.6	6.6	6.5	6.7	6.6	6.5	6.5	6.8	6.4	6.2	6.1	6.5	6.9
Men, 20 years and over	3.6	5.2	5.7	5.7	5.5	5.5	5.4	5.4	5.2	5.6	5.3	4.9	5.1	5.3	5.9
Women, 20 years and over	5.0	5.6	5.8	5.8	5.9	6.0	5.7	5.6	5.7	6.0	5.7	5.8	5.4	5.7	6.1
Both sexes, 16 to 19 years	13.9	14.8	16.0	16.4	15.4	16.8	17.4	16.9	17.2	18.0	16.5	16.1	15.6	17.0	17.6
Black and other, total	11.3	13.2	14.2	14.0	14.0	12.9	13.1	13.7	13.2	13.6	14.2	13.6	15.0	15.1	15.5
Men, 20 years and over	8.4	11.4	12.1	12.0	11.6	10.5	10.8	10.8	10.6	11.8	12.5	11.6	12.4	13.0	13.3
Women, 20 years and over	10.1	11.1	12.3	12.2	12.3	11.0	11.9	12.6	11.8	12.0	12.0	12.0	12.8	13.7	13.3
Both sexes, 16 to 19 years	33.5	35.8	37.4	36.6	37.5	36.5	35.4	37.3	36.1	33.6	38.6	36.4	45.7	37.5	42.9
Married men, spouse present	2.7	4.2	4.6	4.4	4.3	4.2	4.1	4.1	3.8	4.1	4.2	3.9	3.9	4.3	4.7
Married women, spouse present	5.1	5.8	6.0	5.9	5.8	6.2	5.8	6.0	5.9	5.9	5.6	5.6	5.3	5.9	6.1
Women who head families	8.3	9.1	10.2	9.9	10.4	10.5	9.6	9.4	9.8	10.3	10.6	11.5	9.8	10.6	10.7
Full-time workers	5.3	6.8	7.3	7.4	7.3	7.1	7.1	7.1	6.9	7.3	7.0	6.7	6.7	7.2	7.7
Part-time workers	8.7	8.7	9.1	8.6	8.2	9.2	9.1	9.0	9.0	9.7	9.2	9.3	9.7	9.6	9.5
Unemployed 15 weeks and over	1.2	1.7	2.2	2.2	2.3	2.2	2.1	2.1	2.0	2.0	2.2	2.0	2.1	2.1	2.1
Labor force time lost[1]	6.3	7.9	8.4	8.3	8.2	8.2	8.1	8.1	8.2	8.6	8.0	7.9	7.9	8.5	9.1
OCCUPATION															
White-collar workers	3.3	3.7	3.9	3.9	4.0	3.9	3.7	3.9	4.0	4.1	3.8	4.1	3.9	4.1	4.1
Professional and technical	2.4	2.5	2.6	2.5	2.6	2.8	2.6	2.7	3.2	2.9	2.8	2.8	2.4	2.8	2.6
Managers and administrators, except farm	1.9	2.4	2.5	2.4	2.5	2.4	2.4	2.6	2.4	2.7	2.8	2.7	2.8	2.7	2.7
Salesworkers	3.9	4.4	4.6	4.8	4.7	4.4	4.0	3.8	4.0	4.6	4.1	5.1	4.7	5.2	4.9
Clerical workers	4.6	5.3	5.6	5.6	5.8	5.7	5.3	5.9	5.6	5.6	5.3	5.7	5.6	5.7	6.1
Blue-collar workers	6.9	10.0	10.8	10.7	10.5	10.2	10.1	9.8	9.6	10.0	9.8	9.4	9.3	10.2	11.0
Craft and kindred workers	4.5	6.6	7.1	7.1	7.1	6.8	7.2	7.1	6.8	7.7	7.2	6.7	6.9	7.6	8.4
Operatives, except transport	8.4	12.2	13.2	13.0	12.9	12.1	11.9	11.3	11.5	11.9	11.0	11.1	11.0	11.5	12.8
Transport equipment operatives	5.4	8.8	10.6	10.6	8.8	9.1	8.3	9.3	8.1	8.2	8.4	6.9	7.9	8.9	7.9
Nonfarm laborers	10.8	14.6	15.3	15.0	14.8	15.0	14.9	14.1	13.8	13.1	14.8	14.2	12.9	14.4	15.7
Service workers	7.1	7.9	8.3	8.3	7.8	8.0	8.7	8.1	8.5	9.4	9.0	8.0	8.9	8.9	9.3
Farmworkers	3.8	4.4	4.4	4.0	4.0	5.0	4.7	5.1	3.7	5.4	6.0	4.5	5.6	3.7	6.1
INDUSTRY															
Nonagricultural private wage and salary workers[2]	5.7	7.4	7.8	7.8	7.7	7.5	7.5	7.3	7.2	7.8	7.4	7.2	7.2	7.6	8.1
Construction	10.2	14.2	14.6	14.8	13.8	13.3	13.2	14.7	14.4	16.3	16.6	15.0	16.7	16.3	18.0
Manufacturing	5.5	8.5	9.2	8.9	8.8	8.4	8.4	8.0	7.4	7.9	7.6	7.3	7.0	7.8	8.6
Durable goods	5.0	8.9	9.5	9.0	9.0	8.3	8.5	7.9	7.3	7.3	7.4	7.3	6.4	7.6	8.6
Nondurable goods	6.4	7.9	8.9	8.6	8.5	8.5	8.2	8.3	7.6	8.9	7.8	7.3	7.9	8.0	8.6
Transportation and public utilities	3.7	4.9	5.3	4.9	4.9	5.8	5.5	6.4	5.7	5.9	4.7	4.0	4.8	4.0	4.6
Wholesale and retail trade	6.5	7.4	7.8	8.2	8.3	7.6	7.6	7.3	7.3	8.4	7.5	7.9	7.8	8.6	8.3
Finance and service industries	4.9	5.3	5.6	5.5	5.5	5.8	6.0	5.6	5.9	5.9	5.8	5.6	5.6	5.9	6.3
Government workers	3.7	4.1	4.4	4.2	4.1	4.4	4.3	4.6	4.9	4.8	4.5	4.5	4.4	4.6	4.6
Agricultural wage and salary workers	9.1	10.8	11.1	10.1	10.6	11.5	12.1	11.9	9.1	11.1	13.1	10.3	12.6	10.6	13.3

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

[2] Includes mining, not shown separately.

5. Unemployment rates, by sex and age, seasonally adjusted

Sex and age	Annual average		1980			1981									
	1979	1980	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Total, 16 years and over	5.8	7.1	7.6	7.5	7.4	7.4	7.3	7.3	7.3	7.6	7.3	7.0	7.2	7.5	8.0
16 to 19 years	16.1	17.7	18.5	18.6	17.8	19.0	19.3	19.1	19.1	19.5	19.0	18.1	18.8	19.3	20.6
16 to 17 years	18.1	20.0	20.9	21.4	19.9	21.0	21.4	21.3	22.0	21.6	22.6	19.3	20.5	21.2	21.4
18 to 19 years	14.6	16.1	16.7	16.5	16.4	17.5	17.9	17.7	17.2	18.2	17.3	17.7	17.4	18.1	19.9
20 to 24 years	9.0	11.5	12.3	12.1	11.7	11.9	11.8	11.7	12.1	12.9	12.1	11.3	11.8	12.1	12.8
25 years and over	3.9	5.0	5.4	5.4	5.3	5.3	5.1	5.2	5.0	5.3	5.2	5.1	5.1	5.4	5.8
25 to 54 years	4.1	5.4	5.9	5.9	5.8	5.7	5.5	5.5	5.4	5.6	5.6	5.4	5.4	5.8	6.1
55 years and over	3.0	3.3	3.4	3.3	3.5	3.5	3.6	3.7	3.3	3.3	3.4	3.5	3.5	3.8	3.9
Men, 16 years and over	5.1	6.9	7.4	7.4	7.2	7.2	7.1	7.0	6.9	7.4	7.1	6.6	7.0	7.2	7.7
16 to 19 years	15.8	18.2	19.8	19.8	19.0	20.3	20.1	19.5	19.3	20.2	19.8	18.4	19.7	19.3	19.7
16 to 17 years	17.9	20.4	21.8	22.3	20.5	23.0	22.1	21.1	22.7	22.7	24.4	19.8	21.5	21.2	20.6
18 to 19 years	14.2	16.7	18.1	17.8	17.8	18.5	18.7	18.6	17.0	18.3	18.1	17.8	18.1	18.1	19.1
20 to 24 years	8.6	12.5	13.8	13.2	12.5	12.8	12.7	13.0	13.2	14.2	12.8	11.3	12.7	12.9	13.9
25 years and over	3.3	4.7	5.1	5.1	4.9	4.9	4.8	4.7	4.6	4.8	5.0	4.7	4.8	5.0	5.5
25 to 54 years	3.4	5.1	5.6	5.6	5.4	5.2	5.2	5.1	4.9	5.1	5.3	4.9	5.0	5.5	5.9
55 years and over	2.9	3.3	3.3	3.3	3.3	3.4	3.4	3.2	3.1	3.4	3.5	3.4	3.4	3.5	3.8
Women, 16 years and over	6.8	7.4	7.7	7.7	7.7	7.7	7.6	7.7	7.7	7.9	7.6	7.7	7.5	7.9	8.3
16 to 19 years	16.4	17.2	17.0	17.2	16.5	17.5	18.4	18.7	18.9	18.7	18.2	17.7	17.8	19.3	21.5
16 to 17 years	18.3	19.5	19.8	20.3	19.3	18.7	20.5	21.6	21.1	20.4	20.6	18.7	19.5	21.1	22.4
18 to 19 years	15.0	15.6	15.1	15.1	14.8	16.4	17.0	16.5	17.4	18.2	16.4	17.5	16.8	18.1	20.8
20 to 24 years	9.6	10.3	10.6	10.8	10.8	10.8	10.8	10.1	10.9	11.4	11.2	11.3	10.8	11.2	11.5
25 years and over	4.8	5.5	5.9	5.8	5.9	5.8	5.6	5.9	5.6	5.9	5.6	5.7	5.5	5.9	6.1
25 to 54 years	5.2	5.9	6.4	6.2	6.3	6.3	5.9	6.2	6.0	6.4	6.0	6.1	5.9	6.3	6.5
55 years and over	3.2	3.2	3.4	3.4	3.9	3.6	3.9	4.5	3.7	3.3	3.3	3.7	3.6	4.4	4.1

6. Unemployed persons, by reason for unemployment, seasonally adjusted

[Numbers in thousands]

Reason for unemployment	1980			1981									
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
NUMBER OF UNEMPLOYED													
Lost last job	4,240	4,229	4,226	3,847	3,896	3,846	3,819	4,084	4,219	3,691	3,929	4,338	4,422
On layoff	1,692	1,453	1,470	1,258	1,267	1,299	1,280	1,368	1,367	1,178	1,205	1,412	1,607
Other job losers	2,548	2,776	2,756	2,590	2,629	2,547	2,539	2,715	2,852	2,513	2,724	2,925	2,815
Left last job	870	897	813	907	884	863	854	1,009	863	898	838	889	962
Reentered labor force	2,013	1,896	1,869	2,039	1,970	2,040	2,017	2,126	1,955	2,022	1,939	1,949	2,172
Seeking first job	880	890	868	1,000	928	986	987	938	956	873	944	953	987
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
Job losers	53.0	53.5	54.3	49.4	50.7	49.7	49.7	50.1	52.8	49.3	51.4	53.4	51.8
On layoff	21.1	18.4	18.9	16.1	16.5	16.8	16.7	16.8	17.1	15.7	15.7	17.4	18.8
Other job losers	31.8	35.1	35.4	33.2	34.2	32.9	33.1	33.3	35.7	33.6	35.6	36.0	33.0
Job leavers	10.9	11.3	10.5	11.6	11.5	11.2	11.1	12.4	10.8	12.0	11.0	10.9	11.3
Reentrants	25.2	24.0	24.0	26.2	25.7	26.4	26.3	26.1	24.5	27.0	25.4	24.0	25.4
New entrants	11.0	11.2	11.2	12.8	12.1	12.7	12.9	11.5	12.0	11.7	12.3	11.7	11.6
UNEMPLOYED AS A PERCENT OF THE CIVILIAN LABOR FORCE													
Job losers	4.0	4.0	4.0	3.6	3.7	3.6	3.6	.3.8	4.0	3.5	3.7	4.1	4.1
Job leavers	.8	.9	.8	.9	.8	.8	.8	.9	.8	.8	.8	.8	.9
Reentrants	1.9	1.8	1.8	1.9	1.9	1.9	1.9	2.0	1.8	1.9	1.8	1.8	2.0
New entrants	.8	.8	.8	.9	.9	.9	.9	.9	.9	.8	.9	.9	.9

7. Duration of unemployment, seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average		1980			1981									
	1979	1980	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Less than 5 weeks	2,869	3,208	3,186	3,108	3,115	3,259	3,203	3,209	3,074	3,369	3,172	3,187	3,161	3,383	3,652
5 to 14 weeks	1,892	2,411	2,500	2,524	2,217	2,264	2,324	2,356	2,462	2,581	2,360	2,196	2,345	2,489	2,605
15 weeks and over	1,202	1,829	2,292	2,329	2,378	2,358	2,250	2,192	2,105	2,168	2,315	2,100	2,194	2,212	2,251
15 to 26 weeks	684	1,028	1,256	1,213	1,231	1,079	992	1,013	1,001	1,022	1,205	1,068	1,059	1,151	1,156
27 weeks and over	518	802	1,036	1,116	1,147	1,279	1,257	1,179	1,104	1,146	1,110	1,032	1,135	1,061	1,095
Average (mean) duration, in weeks	10.9	11.9	13.3	13.6	13.5	14.4	14.4	14.0	13.7	13.2	14.2	13.9	14.5	13.7	13.7

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 166,000 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.

LABOR TURNOVER DATA in this section are compiled from personnel records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies. A sample of 40,000 establishments represents all industries in the manufacturing and mining sectors of the economy.

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 14–20 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 eliminate the effects of price change. 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. **Spendable earnings** are earnings from which estimated social security and Federal income taxes have been deducted. The Bureau of Labor Statistics computes spendable earnings from gross weekly earnings for only two illustrative cases: (1) a worker with no dependents and (2) a married worker with three dependents.

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.

Labor turnover is the movement of all wage and salary workers from one employment status to another. **Accession rates** indicate the average number of persons added to a payroll in a given period per 100 employees; **separation rates** indicate the average number dropped from a payroll per 100 employees. Although month-to-month changes in employment can be calculated from the labor turnover data, the results are not comparable with employment data from the employment and payroll survey. The labor turnover survey measures changes during the calendar month while the employment and payroll survey measures changes from midmonth to midmonth.

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 June 1981 data, published in the August 1981 issue of the *Review.* Consequently, data published in the *Review* prior to that issue are not necessarily comparable to current data. Complete comparable historical unadjusted and seasonally adjusted data are published in a Supplement to Employment and Earnings (unadjusted data from April 1977 through March 1981 and seasonally adjusted data from January 1974 through March 1981) and in *Employment and Earnings, United States, 1909–78,* BLS Bulletin 1312–11 (for prior periods).

Data on recalls were shown for the first time in tables 12 and 13 in the January 1978 issue of the *Review.* For a detailed discussion of the recalls series, along with historical data, see "New Series on Recalls from the Labor Turnover Survey," *Employment and Earnings,* December 1977, pp. 10–19.

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 for Surveys and Studies,* Bulletin 1910 (Bureau of Labor Statistics, 1976).

The formulas used to construct the spendable average weekly earnings series reflect the latest provisions of the Federal income tax and social security tax laws. For the spendable average weekly earnings formulas for the years 1979–81, see *Employment and Earnings,* March 1981, pp. 10–11. Real earnings data are adjusted using the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W).

8. Employment by industry, 1951–80

[Nonagricultural payroll data, in thousands]

Year	Total	Mining	Construction	Manufacturing	Transportation and public utilities	Wholesale and retail trade	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services	Government		
											Total	Federal	State and local
1951	47,819	929	2,637	16,393	4,226	9,742	2,727	7,015	1,956	5,547	6,389	2,302	4,087
1952	48,793	898	2,668	16,632	4,248	10,004	2,812	7,192	2,035	5,699	6,609	2,420	4,188
1953	50,202	866	2,659	17,549	4,290	10,247	2,854	7,393	2,111	5,835	6,645	2,305	4,340
1954	48,990	791	2,646	16,314	4,084	10,235	2,867	7,368	2,200	5,969	6,751	2,188	4,563
1955	50,641	792	2,839	16,882	4,141	10,535	2,926	7,610	2,298	6,240	6,914	2,187	4,727
1956	52,369	822	3,039	17,243	4,244	10,858	3,018	7,840	2,389	6,497	7,278	2,209	5,069
1957	52,853	828	2,962	17,174	4,241	10,886	3,028	7,858	2,438	6,708	7,616	2,217	5,399
1958	51,324	751	2,817	15,945	3,976	10,750	2,980	7,770	2,481	6,765	7,839	2,191	5,648
1959[1]	53,268	732	3,004	16,675	4,011	11,127	3,082	8,045	2,549	7,087	8,083	2,233	5,850
1960	54,189	712	2,926	16,796	4,004	11,391	3,143	8,248	2,629	7,378	8,353	2,270	6,083
1961	53,999	672	2,859	16,326	3,903	11,337	3,133	8,204	2,688	7,620	8,594	2,279	6,315
1962	55,549	650	2,948	16,853	3,906	11,566	3,198	8,368	2,754	7,982	8,890	2,340	6,550
1963	56,653	635	3,010	16,995	3,903	11,778	3,248	8,530	2,830	8,277	9,225	2,358	6,868
1964	58,283	634	3,097	17,274	3,951	12,160	3,337	8,823	2,911	8,660	9,596	2,348	7,248
1965	60,765	632	3,232	18,062	4,036	12,716	3,466	9,250	2,977	9,036	10,074	2,378	7,696
1966	63,901	627	3,317	19,214	4,158	13,245	3,597	9,648	3,058	9,498	10,784	2,564	8,220
1967	65,803	613	3,248	19,447	4,268	13,606	3,689	9,917	3,185	10,045	11,391	2,719	8,672
1968	67,897	606	3,350	19,781	4,318	14,099	3,779	10,320	3,337	10,567	11,839	2,737	9,102
1969	70,384	619	3,575	20,167	4,442	14,705	3,907	10,798	3,512	11,169	12,195	2,758	9,437
1970	70,880	623	3,588	19,367	4,515	15,040	3,993	11,047	3,645	11,548	12,554	2,731	9,823
1971	71,214	609	3,704	18,623	4,476	15,352	4,001	11,351	3,772	11,797	12,881	2,696	10,185
1972	73,675	628	3,889	19,151	4,541	15,949	4,113	11,836	3,908	12,276	13,334	2,684	10,649
1973	76,790	642	4,097	20,154	4,656	16,607	4,277	12,329	4,046	12,857	13,732	2,663	11,068
1974	78,265	697	4,020	20,077	4,725	16,987	4,433	12,554	4,148	13,441	14,170	2,724	11,446
1975	76,945	752	3,525	18,323	4,542	17,060	4,415	12,645	4,165	13,892	14,686	2,748	11,937
1976	79,382	779	3,576	18,997	4,582	17,755	4,546	13,209	4,271	14,551	14,871	2,733	12,138
1977	82,471	813	3,851	19,682	4,713	18,516	4,708	13,808	4,467	15,303	15,127	2,727	12,399
1978	86,697	851	4,229	20,505	4,923	19,542	4,969	14,573	4,724	16,252	15,672	2,753	12,919
1979	89,823	958	4,463	21,040	5,136	20,192	5,204	14,989	4,975	17,112	15,947	2,773	13,147
1980	90,564	1,020	4,399	20,300	5,143	20,386	5,281	15,104	5,168	17,901	16,249	2,866	13,383

[1]Data include Alaska and Hawaii beginning in 1959.

9. Employment by State

[Nonagricultural payroll data, in thousands]

State	Sept. 1980	Aug. 1981	Sept. 1981[p]	State	Sept. 1980	Aug. 1981	Sept. 1981[p]
Alabama	1,349.9	1,344.9	1,347.5				
Alaska	178.2	189.7	186.3	Montana	284.9	286.4	286.3
Arizona	990.0	993.1	1,012.2	Nebraska	632.7	628.5	637.2
Arkansas	753.9	749.2	759.2	Nevada	406.1	423.5	425.3
California	9,855.1	9,901.0	9,986.1	New Hampshire	388.8	392.7	391.6
				New Jersey	3,057.3	3,132.6	3,104.0
Colorado	1,256.5	1,275.3	1,278.4				
Connecticut	1,422.1	1,419.3	1,432.3	New Mexico	464.0	469.0	471.4
Delaware	259.3	259.2	259.7	New York	7,196.5	7,263.1	7,236.5
District of Columbia	613.4	623.9	604.4	North Carolina	2,398.5	2,356.0	2,408.4
Florida	3,557.9	3,705.5	3,737.2	North Dakota	247.3	249.0	250.5
				Ohio	4,390.6	4,355.0	4,396.2
Georgia	2,147.9	2,156.1	2,160.3				
Hawaii	388.7	404.3	394.4	Oklahoma	1,145.2	1,182.2	1,190.3
Idaho	336.7	324.6	—	Oregon	1,042.1	1,012.8	1,020.1
Illinois	4,884.3	4,843.4	4,850.6	Pennsylvania	4,703.7	4,689.0	4,674.0
Indiana	2,141.3	2,115.7	2,130.5	Rhode Island	402.4	399.1	403.8
				South Carolina	1,181.4	1,176.8	1,189.3
Iowa	1,099.3	1,060.0	1,082.7				
Kansas	948.2	944.6	958.3	South Dakota	238.1	234.3	233.5
Kentucky	1,206.7	1,188.4	1,196.3	Tennessee	1,727.2	1,719.9	1,731.3
Louisiana	1,588.4	1,635.0	1,648.4	Texas	5,936.3	6,151.0	6,180.5
Maine	427.6	431.8	423.6	Utah	554.6	550.1	555.5
				Vermont	201.3	201.3	203.1
Maryland	1,687.5	1,680.1	1,694.4				
Massachusetts	2,641.1	2,658.4	2,655.0	Virginia	2,136.2	2,147.5	2,163.8
Michigan	3,435.1	3,418.0	3,485.8	Washington	1,615.3	1,575.1	1,590.7
Minnesota	1,781.4	1,767.3	1,780.2	West Virginia	645.9	629.1	633.1
Mississippi	829.3	811.3	824.3	Wisconsin	1,962.6	1,962.9	1,979.4
Missouri	1,975.4	1,967.0	1,980.6	Wyoming	211.8	213.6	212.7
				Virgin Islands	35.1	36.6	35.2

10. Employment by industry division and major manufacturing group

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual average		1980			1981									
	1979	1980	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept. [P]	Oct. [P]
TOTAL	89,823	90,564	91,244	91,599	91,750	89,988	90,138	90,720	91,337	91,848	92,481	91,600	91,598	92,079	92,332
MINING	958	1,020	1,034	1,051	1,060	1,066	1,071	1,084	941	957	1,132	1,155	1,169	1,164	1,160
CONSTRUCTION	4,463	4,399	4,619	4,533	4,343	3,995	3,901	4,048	4,246	4,356	4,477	4,554	4,579	4,511	4,483
MANUFACTURING	21,040	20,300	20,235	20,293	20,238	20,075	20,065	20,160	20,253	20,342	20,531	20,337	20,473	20,608	20,350
Production workers	15,068	14,223	14,141	14,190	14,126	13,975	13,971	14,049	14,127	14,195	14,325	14,108	14,230	14,391	14,150
Durable goods	12,760	12,181	12,061	12,156	12,147	12,072	12,042	12,120	12,197	12,235	12,334	12,198	12,188	12,294	12,174
Production workers	9,110	8,438	8,304	8,391	8,374	8,305	8,279	8,345	8,412	8,438	8,500	8,347	8,323	8,446	8,331
Lumber and wood products	766.9	690.3	691.4	687.9	685.9	674.6	674.5	678.3	686.9	703.4	711.0	708.6	701.5	690.2	673.2
Furniture and fixtures	497.8	468.8	465.0	468.6	470.5	469.6	471.7	472.1	478.0	479.0	480.5	472.0	480.6	483.7	481.4
Stone, clay, and glass products	708.7	665.6	663.5	665.2	652.3	635.0	630.6	639.5	652.6	659.7	671.0	666.7	669.1	664.7	654.3
Primary metal industries	1,253.9	1,144.1	1,103.7	1,123.3	1,136.3	1,136.7	1,137.7	1,141.3	1,149.9	1,147.5	1,155.5	1,135.5	1,140.3	1,141.5	1,117.4
Fabricated metal products	1,717.7	1,609.0	1,586.6	1,597.6	1,596.4	1,580.2	1,578.1	1,585.4	1,593.7	1,596.1	1,606.8	1,584.5	1,590.9	1,609.7	1,590.3
Machinery, except electrical	2,484.8	2,497.0	2,461.2	2,479.6	2,496.8	2,496.9	2,498.4	2,504.3	2,506.1	2,508.6	2,531.3	2,517.4	2,511.4	2,539.1	2,529.7
Electric and electronic equipment	2,116.9	2,103.2	2,094.8	2,109.6	2,118.0	2,114.0	2,112.3	2,119.5	2,129.7	2,134.7	2,152.7	2,138.9	2,146.1	2,164.8	2,157.2
Transportation equipment	2,077.2	1,875.3	1,869.0	1,894.6	1,871.4	1,854.9	1,824.8	1,860.4	1,874.3	1,877.4	1,882.7	1,840.3	1,799.6	1,850.2	1,822.5
Instruments and related products	691.2	708.5	706.3	711.2	713.8	712.4	710.1	712.1	714.4	715.2	723.2	722.1	726.2	723.4	719.7
Miscellaneous manufacturing	444.8	419.3	419.2	417.9	405.9	398.0	403.3	406.7	411.3	413.4	419.5	412.3	421.8	426.5	428.2
Nondurable goods	8,280	8,118	8,174	8,137	8,091	8,003	8,023	8,040	8,056	8,107	8,197	8,139	8,285	8,314	8,176
Production workers	5,958	5,786	5,837	5,799	5,752	5,670	5,692	5,704	5,715	5,757	5,825	5,761	5,907	5,945	5,819
Food and kindred products	1,732.5	1,710.8	1,765.2	1,719.3	1,688.5	1,645.2	1,639.2	1,632.5	1,631.0	1,648.1	1,673.4	1,714.8	1,773.2	1,775.0	1,700.4
Tobacco manufactures	70.0	69.2	75.9	75.3	74.4	72.0	70.6	68.3	66.2	65.2	66.4	66.3	75.6	77.2	76.9
Textile mill products	885.1	852.7	845.4	847.8	846.1	841.0	841.1	840.9	841.6	844.3	851.0	836.5	847.3	850.6	834.6
Apparel and other textile products	1,304.3	1,265.8	1,270.5	1,262.3	1,241.1	1,222.8	1,238.7	1,250.2	1,255.2	1,265.9	1,283.9	1,231.1	1,276.8	1,292.3	1,277.3
Paper and allied products	706.8	694.0	690.6	691.4	691.5	687.7	687.7	688.6	690.9	693.1	701.0	696.4	700.3	701.5	691.2
Printing and publishing	1,235.1	1,258.3	1,259.1	1,268.2	1,278.3	1,269.0	1,273.6	1,278.2	1,280.4	1,281.8	1,286.2	1,286.5	1,289.4	1,293.4	1,294.5
Chemicals and allied products	1,109.3	1,107.4	1,099.5	1,100.1	1,101.2	1,100.1	1,102.9	1,106.8	1,106.2	1,110.3	1,121.1	1,116.6	1,112.0	1,111.6	1,102.0
Petroleum and coal products	209.8	196.6	209.7	209.5	206.8	206.5	205.7	207.0	209.5	212.9	215.4	216.1	215.4	213.0	213.5
Rubber and miscellaneous plastics products	781.6	730.7	725.7	730.6	733.2	731.8	734.2	737.2	743.5	749.2	759.0	747.0	756.8	762.3	749.4
Leather and leather products	245.7	232.6	232.1	232.5	229.4	226.9	229.5	230.4	231.7	235.9	239.1	227.5	238.6	236.6	235.7
TRANSPORTATION AND PUBLIC UTILITIES	5,136	5,143	5,166	5,147	5,150	5,063	5,076	5,095	5,120	5,148	5,195	5,177	5,175	5,227	5,230
WHOLESALE AND RETAIL TRADE	20,192	20,386	20,533	20,761	21,138	20,366	20,196	20,290	20,513	20,672	20,795	20,735	20,811	20,926	20,993
WHOLESALE TRADE	5,204	5,281	5,315	5,312	5,315	5,276	5,273	5,293	5,317	5,335	5,381	5,376	5,386	5,369	5,375
RETAIL TRADE	14,989	15,104	15,218	15,449	15,823	15,090	14,923	14,997	15,196	15,337	15,414	15,359	15,425	15,557	15,618
FINANCE, INSURANCE, AND REAL ESTATE	4,975	5,168	5,211	5,223	5,237	5,235	5,245	5,263	5,295	5,326	5,384	5,408	5,408	5,353	5,337
SERVICES	17,112	17,901	18,115	18,118	18,149	17,972	18,126	18,287	18,512	18,633	18,764	18,847	18,835	18,829	18,877
GOVERNMENT	15,947	16,249	16,331	16,473	16,435	16,216	16,458	16,493	16,457	16,414	16,203	15,387	15,148	15,461	15,902
Federal	2,773	2,866	2,774	2,776	2,782	2,773	2,774	2,769	2,773	2,782	2,825	2,833	2,803	2,741	2,744
State and local	13,174	13,383	13,557	13,697	13,653	13,443	13,684	13,724	13,684	13,632	13,378	12,554	12,345	12,720	13,158

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

[Nonagricultural payroll data, in thousands]

Industry division and group	1980			1981									
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[p]	Oct.[p]
TOTAL	90,668	90,844	90,949	91,091	91,258	91,347	91,458	91,564	91,615	91,880	91,901	91,948	91,743
MINING	1,032	1,052	1,069	1,083	1,091	1,098	950	957	1,110	1,132	1,151	1,157	1,158
CONSTRUCTION	4,379	4,389	4,387	4,390	4,389	4,416	4,418	4,334	4,284	4,272	4,275	4,268	4,249
MANUFACTURING	20,110	20,188	20,175	20,174	20,177	20,191	20,332	20,414	20,424	20,535	20,505	20,500	20,225
Production workers	14,024	14,081	14,059	14,053	14,053	14,074	14,187	14,247	14,245	14,327	14,294	14,293	14,033
Durable goods	12,013	12,090	12,077	12,084	12,074	12,099	12,207	12,254	12,278	12,333	12,332	12,309	12,126
Production workers	8,259	8,320	8,301	8,306	8,297	8,325	8,412	8,442	8,455	8,491	8,485	8,468	8,286
Lumber and wood products	679	683	687	689	691	692	702	710	699	702	686	677	661
Furniture and fixtures	462	463	464	464	466	467	478	484	486	488	487	484	478
Stone, clay, and glass products	655	658	655	654	654	651	656	658	658	658	660	655	646
Primary metal industries	1,108	1,126	1,137	1,137	1,140	1,141	1,145	1,142	1,144	1,140	1,148	1,142	1,122
Fabricated metal products	1,578	1,582	1,581	1,579	1,577	1,581	1,595	1,604	1,604	1,614	1,610	1,608	1,581
Machinery, except electrical	2,481	2,489	2,490	2,487	2,481	2,480	2,491	2,511	2,521	2,533	2,542	2,549	2,550
Electric and electronic equipment	2,087	2,096	2,103	2,110	2,110	2,117	2,134	2,143	2,148	2,163	2,166	2,163	2,149
Transportation equipment	1,848	1,874	1,839	1,840	1,833	1,849	1,878	1,872	1,886	1,886	1,889	1,887	1,801
Instruments and related products	709	712	712	713	711	712	714	716	717	723	727	727	723
Miscellaneous manufacturing	406	407	409	411	411	409	414	414	415	426	417	417	415
Nondurable goods	8,097	8,098	8,098	8,090	8,103	8,092	8,125	8,160	8,146	8,202	8,173	8,191	8,099
Production workers	5,765	5,761	5,758	5,747	5,756	5,749	5,775	5,805	5,790	5,836	5,809	5,825	5,747
Food and kindred products	1,711	1,705	1,701	1,696	1,705	1,691	1,697	1,703	1,673	1,691	1,668	1,668	1,648
Tobacco manufactures	69	71	71	71	72	72	72	71	71	71	73	71	70
Textile mill products	845	844	842	841	839	838	842	843	846	856	849	850	834
Apparel and other textile products	1,256	1,253	1,250	1,244	1,243	1,243	1,250	1,258	1,264	1,278	1,272	1,278	1,262
Paper and allied products	691	692	692	691	691	689	691	694	695	696	698	702	691
Printing and publishing	1,262	1,265	1,269	1,269	1,272	1,276	1,280	1,283	1,284	1,290	1,295	1,300	1,297
Chemicals and allied products	1,102	1,103	1,105	1,106	1,109	1,108	1,107	1,109	1,111	1,110	1,106	1,113	1,105
Petroleum and coal products	208	209	209	211	210	210	211	213	212	212	212	211	212
Rubber and miscellaneous plastics products	722	725	729	730	731	734	744	753	757	760	764	762	746
Leather and leather products	231	231	230	231	231	231	231	233	232	238	236	236	234
TRANSPORTATION AND PUBLIC UTILITIES	5,129	5,114	5,118	5,124	5,135	5,139	5,161	5,148	5,149	5,167	5,170	5,191	5,194
WHOLESALE AND RETAIL TRADE	20,461	20,464	20,470	20,529	20,600	20,635	20,636	20,714	20,717	20,796	20,862	20,879	20,910
WHOLESALE TRADE	5,296	5,296	5,300	5,305	5,313	5,316	5,333	5,346	5,349	5,360	5,375	5,369	5,354
RETAIL TRADE	15,165	15,168	15,170	15,224	15,287	15,319	15,303	15,368	15,368	15,436	15,487	15,510	15,556
FINANCE, INSURANCE, AND REAL ESTATE	5,221	5,235	5,254	5,268	5,283	5,293	5,316	5,326	5,331	5,344	5,354	5,358	5,348
SERVICES	18,087	18,160	18,240	18,300	18,343	18,371	18,475	18,540	18,560	18,642	18,667	18,791	18,839
GOVERNMENT	16,249	16,242	16,236	16,223	16,240	16,204	16,170	16,131	16,040	15,992	15,917	15,804	15,820
Federal	2,795	2,796	2,800	2,799	2,795	2,781	2,767	2,779	2,781	2,777	2,770	2,771	2,766
State and local	13,454	13,446	13,436	13,424	13,445	13,423	13,403	13,352	13,259	13,215	13,147	13,033	13,054

12. Labor turnover rates in manufacturing, 1977 to date

[Per 100 employees]

Year	Annual average	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Total accessions												
1977	4.0	3.7	3.7	4.0	3.8	4.6	4.9	4.3	5.3	4.6	3.9	3.1	2.4
1978	4.1	3.8	3.2	3.8	4.0	4.7	4.9	4.4	5.4	4.9	4.3	3.3	2.4
1979	4.0	4.0	3.4	3.8	3.9	4.7	4.8	4.3	5.0	4.5	4.1	3.0	2.2
1980	3.5	3.8	3.3	3.5	3.1	3.4	3.9	3.8	4.5	4.3	3.6	2.7	2.2
1981	...	3.4	3.0	3.4	3.3	3.5	4.0	3.6	4.0	p3.5	...	...	...
	New hires												
1977	2.8	2.2	2.1	2.6	2.7	3.5	3.7	3.0	4.0	3.5	3.0	2.2	1.6
1978	3.1	2.5	2.2	2.7	2.9	3.6	3.9	3.3	4.2	3.9	3.5	2.6	1.7
1979	2.9	2.8	2.5	2.8	2.9	3.6	3.8	3.1	3.7	3.4	3.1	2.2	1.5
1980	2.1	2.4	2.2	2.3	2.0	2.1	2.4	2.1	2.5	2.6	2.2	1.6	1.2
1981	...	1.8	1.8	2.0	2.0	2.3	2.8	2.4	2.7	p2.3	...	...	...
	Recalls												
1977	.9	1.2	1.3	1.1	.9	.8	.8	.9	1.0	.8	.6	.6	.6
1978	.7	1.0	.7	.8	.8	.8	.7	.8	.9	.7	.6	.5	.5
1979	.7	.9	.7	.7	.7	.8	.7	.9	.9	.8	.7	.6	.5
1980	1.1	1.1	.9	.9	.8	1.0	1.2	1.5	1.7	1.4	1.1	.9	.8
1981	...	1.3	1.0	1.1	1.1	1.0	.9	1.0	1.0	p.9	...	...	...
	Total separations												
1977	3.8	3.9	3.4	3.4	3.4	3.5	3.5	4.3	5.1	4.9	3.8	3.4	3.4
1978	3.9	3.6	3.1	3.5	3.6	3.7	3.8	4.1	5.3	4.9	4.1	3.5	3.4
1979	4.0	3.8	3.2	3.6	3.7	3.8	3.9	4.3	5.7	4.7	4.2	3.8	3.5
1980	4.0	4.1	3.5	3.7	4.7	4.8	4.4	4.2	4.8	4.1	3.8	3.0	3.1
1981	...	3.6	3.1	3.2	3.1	3.1	3.2	3.6	4.4	p4.1	...	...	...
	Quits												
1977	1.8	1.4	1.3	1.6	1.7	1.9	1.9	1.9	3.1	2.8	1.9	1.5	1.2
1978	2.1	1.5	1.4	1.8	2.0	2.1	2.2	2.1	3.5	3.1	2.3	1.7	1.3
1979	2.0	1.8	1.6	1.9	2.0	2.1	2.1	2.0	3.3	2.7	2.1	1.6	1.1
1980	1.5	1.6	1.5	1.6	1.5	1.5	1.4	1.4	2.2	1.9	1.4	1.1	.9
1981	...	1.2	1.1	1.2	1.3	1.3	1.4	1.5	2.1	p1.8	...	...	...
	Layoffs												
1977	1.1	1.7	1.4	1.0	.9	.8	.8	1.5	1.0	1.1	1.1	1.1	1.5
1978	.9	1.2	.9	.9	.8	.7	.7	1.1	.8	.8	.9	1.0	1.4
1979	1.1	1.1	.8	.8	.9	.7	.9	1.4	1.3	1.1	1.2	1.5	1.7
1980	1.7	1.6	1.2	1.3	2.3	2.5	2.2	2.0	1.7	1.4	1.5	1.3	1.6
1981	...	1.6	1.2	1.2	1.0	1.0	1.1	1.3	1.3	p1.5	...	...	...

13. Labor turnover rates in manufacturing, by major industry group

[Per 100 employees]

Major industry group	Accession rates									Separation rates								
	Total			New hires			Recalls			Total			Quits			Layoffs		
	Sept. 1980	Aug. 1981	Sept. 1981 p	Sept. 1980	Aug. 1981	Sept. 1981 p	Sept. 1980	Aug. 1981	Sept. 1981 p	Sept. 1980	Aug. 1981	Sept. 1981 p	Sept. 1980	Aug. 1981	Sept. 1981 p	Sept. 1980	Aug. 1981	Sept. 1981 p
MANUFACTURING	4.3	4.0	3.5	2.6	2.7	2.3	1.4	1.0	0.9	4.1	4.4	4.1	1.9	2.1	1.8	1.4	1.3	1.5
Seasonally adjusted	3.7	3.2	2.9	2.1	2.1	1.8	1.4	.8	.9	3.5	3.6	3.7	1.3	1.3	1.3	1.5	1.4	1.7
Durable goods	4.0	3.3	3.0	2.1	2.1	1.8	1.6	.9	.9	3.5	4.1	3.6	1.4	1.7	1.4	1.2	1.5	1.5
Lumber and wood products	5.3	4.3	3.9	3.6	3.4	2.4	1.5	.7	1.4	5.8	6.5	6.7	2.7	3.1	2.4	2.0	2.3	3.4
Furniture and fixtures	5.5	4.9	3.9	3.9	3.7	3.2	1.4	1.1	.6	4.4	4.8	4.3	2.5	2.8	2.3	.8	1.0	1.1
Stone, clay, and glass products	3.8	3.7	2.7	2.2	2.2	1.6	1.4	1.2	.9	4.0	4.7	4.0	1.6	2.0	1.3	1.4	1.6	1.8
Primary metal industries	4.2	2.6	2.4	.9	1.2	1.0	2.9	1.2	1.1	3.7	3.6	3.8	.7	1.1	.8	2.1	1.7	2.3
Fabricated metal products	4.6	3.8	3.2	2.4	2.3	2.0	1.9	1.1	.9	3.8	4.4	4.0	1.6	1.9	1.5	1.5	1.6	1.8
Machinery, except electrical	2.9	2.8	2.4	1.7	1.8	1.6	.8	.7	.6	2.9	3.3	2.7	1.2	1.4	1.1	1.0	1.1	.9
Electric and electronic equipment	3.3	3.0	3.0	1.9	2.0	1.9	.8	.6	.7	3.0	3.5	3.2	1.4	1.6	1.3	.8	1.0	1.0
Transportation equipment	5.0	2.7	...	1.6	1.4	...	2.8	.9	...	3.2	4.5	...	1.0	1.2	...	1.4	2.5	...
Instruments and related products	2.8	2.6	2.4	2.1	2.1	1.9	.4	.4	.2	2.9	2.9	3.2	1.9	1.8	1.9	.4	.5	.7
Miscellaneous manufacturing	5.8	6.0	4.9	4.0	4.4	3.8	1.6	1.4	.9	5.0	5.4	5.1	2.7	3.0	2.3	1.3	1.3	1.7
Nondurable goods	4.7	5.0	4.2	3.2	3.5	3.0	1.3	1.2	1.0	5.0	4.8	4.7	2.5	2.8	2.3	1.6	1.1	1.5
Food and kindred products	7.4	8.5	6.6	4.9	5.5	4.2	2.3	2.7	2.2	8.5	6.6	7.6	3.9	3.7	3.3	3.7	2.0	3.3
Tobacco manufacturers	5.6	10.0	...	3.2	4.6	...	1.9	4.6	...	3.0	2.9	...	1.5	1.6	...	.5	.3	...
Textile mill products	3.7	4.1	3.4	2.7	3.2	2.7	.8	.6	.5	3.8	4.4	4.0	2.3	2.7	2.3	.7	.7	.9
Apparel and other products	6.0	6.8	5.7	3.9	4.6	4.2	1.8	1.9	1.3	5.8	6.1	5.3	3.2	3.8	3.2	1.7	1.3	1.3
Paper and allied products	2.8	2.6	2.3	1.8	1.8	1.6	.8	.6	.6	3.4	3.6	3.4	1.5	1.9	1.5	1.2	.9	1.1
Printing and publishing	3.6	3.6	3.5	3.0	3.0	2.9	.5	.4	.5	3.6	3.9	3.5	2.3	2.6	2.3	.7	.6	.6
Chemicals and allied products	1.7	1.7	1.4	1.2	1.3	1.1	.4	.3	.2	2.1	2.6	2.0	1.0	1.4	.9	.5	.5	.5
Petroleum and coal products	2.1	1.9	2.0	1.7	1.7	1.6	.3	.2	.3	2.3	3.3	3.1	.9	1.3	.8	.6	1.1	1.1
Rubber and miscellaneous plastics products	5.5	4.4	3.7	3.2	3.2	2.8	1.9	.9	.6	4.5	4.7	4.5	2.3	2.6	2.0	1.3	1.0	1.5
Leather and leather products	6.5	7.2	5.1	5.1	5.2	4.1	1.1	1.7	.8	6.9	7.2	6.5	4.1	4.2	3.5	1.7	1.8	2.2

14. Hours and earnings, by industry division, 1950–80

[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
	Total private			Mining			Construction			Manufacturing		
1950	$53.13	39.8	$1.335	$67.16	37.9	$1.772	$69.68	37.4	$1.863	$58.32	40.5	$1.440
1951	57.86	39.9	1.45	74.11	38.4	1.93	76.96	38.1	2.02	63.34	40.6	1.56
1952	60.65	39.9	1.52	77.59	38.6	2.01	82.86	38.9	2.13	66.75	40.7	1.64
1953	63.76	39.6	1.61	83.03	38.8	2.14	86.41	37.9	2.28	70.47	40.5	1.74
1954	64.52	39.1	1.65	82.60	38.6	2.14	88.91	37.2	2.39	70.49	39.6	1.78
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
1956	70.74	39.3	1.80	95.06	40.8	2.33	96.38	37.5	2.57	78.78	40.4	1.95
1957	73.33	38.8	1.89	98.25	40.1	2.45	100.27	37.0	2.71	81.19	39.8	2.04
1958	75.08	38.5	1.95	96.08	38.9	2.47	103.78	36.8	2.82	82.32	39.2	2.10
1959[1]	78.78	39.0	2.02	103.68	40.5	2.56	108.41	37.0	2.93	88.26	40.3	2.19
1960	80.67	38.6	2.09	105.04	40.4	2.60	112.67	36.7	3.07	89.72	39.7	2.26
1961	82.60	38.6	2.14	106.92	40.5	2.64	118.08	36.9	3.20	92.34	39.8	2.32
1962	85.91	38.7	2.22	110.70	41.0	2.70	122.47	37.0	3.31	96.56	40.4	2.39
1963	88.46	38.8	2.28	114.40	41.6	2.75	127.19	37.3	3.41	99.23	40.5	2.45
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	396.14	43.2	9.17	367.04	37.0	9.92	288.62	39.7	7.27
	Transportation and public utilities			Wholesale and retail trade			Finance, insurance, and real estate			Services		
1950	.....	.....	.....	$44.55	40.5	$1.100	$50.52	37.7	$1.340	.....	.....	.....
1951	.....	.....	.....	47.79	40.5	1.18	54.67	37.7	1.45	.....	.....	.....
1952	.....	.....	.....	49.20	40.0	1.23	57.08	37.8	1.51	.....	.....	.....
1953	.....	.....	.....	51.35	39.5	1.30	59.57	37.7	1.58	.....	.....	.....
1954	.....	.....	.....	53.33	39.5	1.35	62.04	37.6	1.65	.....	.....	.....
1955	.....	.....	.....	55.16	39.4	1.40	63.92	37.6	1.70	.....	.....	.....
1956	.....	.....	.....	57.48	39.1	1.47	65.68	36.9	1.78	.....	.....	.....
1957	.....	.....	.....	59.60	38.7	1.54	67.53	36.7	1.84	.....	.....	.....
1958	.....	.....	.....	61.76	38.6	1.60	70.12	37.1	1.89	.....	.....	.....
1959[1]	.....	.....	.....	64.41	38.8	1.66	72.74	37.3	1.95	.....	.....	.....
1960	.....	.....	.....	66.01	38.6	1.71	75.14	37.2	2.02	.....	.....	.....
1961	.....	.....	.....	67.41	38.3	1.76	77.12	36.9	2.09	.....	.....	.....
1962	.....	.....	.....	69.91	38.2	1.83	80.94	37.3	2.17	.....	.....	.....
1963	.....	.....	.....	72.01	38.1	1.89	84.38	37.5	2.25	.....	.....	.....
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	209.24	36.2	5.78	190.71	32.6	5.85

[1] Data include Alaska and Hawaii beginning in 1959.

15. Weekly hours, by industry division and major manufacturing group

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

Industry division and group	Annual average		1980			1981									
	1979	1980	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[P]	Oct.[P]
TOTAL PRIVATE	35.7	35.3	35.3	35.3	35.6	35.1	35.0	35.2	35.2	35.2	35.4	35.6	35.6	35.0	35.0
MINING	43.0	43.2	43.6	43.6	44.1	43.6	42.8	42.3	43.6	43.8	42.1	43.5	44.1	43.8	44.5
CONSTRUCTION	37.0	37.0	37.9	36.8	37.2	36.4	35.0	37.2	36.9	36.9	37.2	37.7	37.3	35.7	37.1
MANUFACTURING	40.2	39.7	39.8	40.2	40.8	39.9	39.5	39.9	39.7	40.1	40.2	39.6	39.8	39.5	39.5
Overtime hours	3.3	2.8	2.9	3.1	3.3	2.9	2.8	2.8	2.6	2.9	3.0	2.8	3.0	2.9	2.8
Durable goods	40.8	40.1	40.3	40.7	41.5	40.4	39.9	40.5	40.3	40.6	40.6	39.9	40.2	39.7	39.8
Overtime hours	3.5	2.8	2.9	3.1	3.4	2.9	2.8	2.9	2.7	3.0	3.0	2.8	2.9	2.7	2.7
Lumber and wood products	39.4	38.6	39.2	39.2	39.7	38.8	38.5	39.0	39.1	39.6	39.5	38.7	39.0	38.1	37.8
Furniture and fixtures	38.7	38.1	38.5	38.4	39.6	38.1	38.3	38.8	38.2	38.5	38.9	37.8	38.6	37.6	37.8
Stone, clay, and glass products	41.5	40.8	41.3	41.4	41.6	40.3	39.6	40.6	40.9	41.1	41.2	40.8	41.0	40.6	40.6
Primary metal industries	41.4	40.1	39.9	40.8	41.6	41.1	40.7	41.1	41.2	40.9	40.9	40.3	40.3	40.6	39.6
Fabricated metal products	40.7	40.4	40.5	40.9	41.6	40.4	40.0	40.6	40.2	40.7	40.8	39.9	40.3	39.5	40.0
Machinery except electrical	41.8	41.0	40.7	41.3	42.2	41.2	40.8	41.2	40.8	41.2	41.1	40.4	40.7	40.3	40.4
Electric and electronic equipment	40.3	39.8	39.8	40.4	41.0	40.1	39.6	40.2	39.8	40.1	40.2	39.7	40.0	39.6	39.7
Transportation equipment	41.1	40.6	41.1	41.7	43.1	40.9	40.1	41.1	41.0	41.6	41.3	40.7	40.5	39.8	40.2
Instruments and related products	40.8	40.5	40.3	40.9	41.2	40.6	40.5	40.6	39.9	40.3	40.4	39.9	40.4	40.4	40.4
Miscellaneous manufacturing	38.8	38.7	38.9	39.1	39.5	38.6	38.4	38.9	38.6	38.9	39.0	38.5	39.0	38.8	39.2
Nondurable goods	39.3	39.0	39.1	39.4	39.9	39.2	38.9	39.1	38.9	39.4	39.5	39.1	39.4	39.1	39.0
Overtime hours	3.1	2.8	2.9	3.0	3.1	2.9	2.8	2.7	2.6	2.9	2.9	2.8	3.0	3.1	2.9
Food and kindred products	39.9	39.7	39.7	40.1	40.3	40.0	39.3	39.2	39.3	39.8	39.8	39.6	40.0	39.8	39.4
Tobacco manufactures	38.0	38.1	40.0	40.1	38.1	38.6	38.5	37.2	37.2	38.6	38.5	38.6	40.7	40.1	39.2
Textile mill products	40.4	40.1	39.9	40.3	40.9	39.9	39.9	40.1	39.4	40.3	40.4	39.7	40.0	39.0	39.4
Apparel and other textile products	35.3	35.4	35.5	35.4	35.9	35.2	35.3	35.8	35.2	36.0	36.4	36.0	36.3	35.2	35.7
Paper and allied products	42.6	42.3	42.2	42.8	43.7	42.7	42.2	42.4	42.3	42.5	42.7	42.4	42.5	43.3	42.3
Printing and publishing	37.5	37.1	37.2	37.2	38.1	37.1	36.9	37.1	37.0	37.3	37.2	37.2	37.5	37.5	37.2
Chemicals and allied products	41.9	41.5	41.5	42.0	42.1	41.6	41.5	41.6	41.6	41.6	41.6	41.5	41.4	42.3	41.3
Petroleum and coal products	43.8	41.8	43.7	43.6	43.3	42.6	42.5	42.6	43.9	43.6	43.5	43.7	43.0	44.0	43.6
Rubber and miscellaneous plastics products	40.5	40.1	40.7	41.1	41.6	41.0	40.2	40.7	40.4	40.9	40.9	40.0	40.4	39.8	40.4
Leather and leather products	36.5	36.7	36.6	36.3	36.9	36.5	36.7	36.8	36.3	37.4	38.1	36.6	36.9	36.1	36.8
TRANSPORTATION AND PUBLIC UTILITIES	39.9	39.6	39.8	39.7	40.0	39.4	39.5	39.4	39.3	39.3	39.8	39.8	39.5	39.1	39.1
WHOLESALE AND RETAIL TRADE	32.6	32.2	32.1	32.1	32.5	31.7	31.7	31.9	32.1	32.0	32.3	32.8	32.8	32.2	31.9
WHOLESALE TRADE	38.8	38.5	38.7	38.5	38.9	38.5	38.3	38.5	38.5	38.5	38.6	38.8	38.7	38.5	38.5
RETAIL TRADE	30.6	30.2	30.0	30.0	30.5	29.5	29.6	29.8	30.0	29.9	30.4	30.9	30.9	30.2	29.8
FINANCE, INSURANCE, AND REAL ESTATE	36.2	36.2	36.3	36.3	36.3	36.4	36.4	36.4	36.3	36.1	36.1	36.3	36.3	36.0	36.2
SERVICES	32.7	32.6	32.6	32.6	32.6	32.5	32.6	32.6	32.6	32.5	32.7	33.0	32.9	32.4	32.5

16. 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	1980			1981									
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[p]	Oct.[p]
TOTAL PRIVATE	35.3	35.3	35.3	35.3	35.2	35.3	35.4	35.3	35.2	35.3	35.2	34.9	34.9
MANUFACTURING	39.7	39.8	39.9	40.1	39.8	39.9	40.2	40.3	40.1	40.0	40.0	39.3	39.4
Overtime hours	2.8	3.0	3.0	3.0	2.8	2.8	2.9	3.2	3.0	3.0	3.0	2.6	2.7
Durable goods	40.1	40.4	40.4	40.6	40.1	40.4	40.8	40.8	40.5	40.5	40.5	39.6	39.7
Overtime hours	2.8	3.0	3.1	3.0	2.8	2.8	3.0	3.2	3.0	3.0	3.0	2.5	2.6
Lumber and wood products	38.6	39.1	39.3	39.8	39.1	39.1	39.6	39.8	39.0	38.8	38.6	37.5	37.2
Furniture and fixtures	38.0	38.0	38.4	38.5	38.6	38.6	38.8	39.0	38.9	38.5	38.6	37.4	37.4
Stone, clay, and glass products	40.8	40.9	41.0	41.3	40.6	40.7	41.2	41.0	40.8	40.9	40.8	40.3	40.1
Primary metal industries	40.1	40.8	41.2	41.1	40.7	41.0	41.2	41.0	40.8	40.5	40.7	40.4	39.8
Fabricated metal products	40.4	40.5	40.4	40.5	40.2	40.4	40.9	40.9	40.7	40.5	40.5	39.4	39.9
Machinery, except electrical	40.8	41.0	40.9	41.1	40.8	40.9	41.3	41.4	41.1	41.1	41.2	40.2	40.5
Electric and electronic equipment	39.8	39.9	40.0	40.1	39.6	40.0	40.2	40.4	40.2	40.5	40.4	39.5	39.7
Transportation equipment	40.7	41.2	41.0	41.3	40.5	40.9	42.0	41.8	41.4	41.2	41.3	39.8	39.8
Instruments and related products	40.3	40.4	40.4	40.6	40.5	40.5	40.1	40.4	40.4	40.5	40.8	40.5	40.4
Miscellaneous manufacturing	38.6	38.6	38.9	38.8	38.6	38.7	38.9	39.2	39.1	39.2	39.1	38.5	38.9
Nondurable goods	39.0	39.1	39.2	39.5	39.2	39.2	39.3	39.6	39.4	39.3	39.3	38.9	38.9
Overtime hours	2.8	2.9	2.9	3.0	2.9	2.8	2.9	3.1	3.0	2.9	2.9	2.8	2.8
Food and kindred products	39.6	39.8	39.7	40.3	39.9	39.7	40.1	40.0	39.8	39.4	39.4	39.2	39.3
Textile mill products	39.8	39.9	40.1	40.0	40.0	39.9	39.8	40.5	40.2	40.4	40.3	39.0	39.3
Apparel and other textile products	35.4	35.2	35.5	36.1	35.6	35.7	35.5	36.0	36.1	35.9	36.1	35.2	35.6
Paper and allied products	42.2	42.4	42.8	42.6	42.4	42.4	42.6	42.8	42.7	42.7	42.7	43.2	42.3
Printing and publishing	37.1	36.8	37.4	37.5	37.3	37.1	37.3	37.6	37.4	37.3	37.3	37.2	37.1
Chemicals and allied products	41.5	41.6	41.6	41.6	41.6	41.5	41.5	41.7	41.7	41.8	41.7	42.4	41.3
Petroleum and coal products	42.8	42.9	43.2	43.8	43.8	43.5	44.1	43.8	43.4	43.1	42.8	42.9	42.6
Rubber and miscellaneous plastics products	40.5	40.8	40.8	40.9	40.3	40.5	40.7	41.3	41.0	40.5	40.6	39.6	40.2
Leather and leather products	36.7	36.3	36.6	36.8	37.0	37.1	36.6	37.1	37.1	36.5	36.9	36.2	36.9
WHOLESALE AND RETAIL TRADE	32.1	32.2	32.1	32.2	32.2	32.2	32.3	32.1	32.1	32.2	32.1	32.1	31.9
WHOLESALE TRADE	38.5	38.5	38.6	38.8	38.6	38.6	38.6	38.5	38.5	38.7	38.6	38.5	38.3
RETAIL TRADE	30.1	30.2	30.0	30.1	30.2	30.2	30.3	30.1	30.1	30.1	30.1	30.1	29.9
SERVICES	32.6	32.7	32.7	32.7	32.8	32.8	32.8	32.7	32.5	32.5	32.4	32.4	32.5

NOTE: The industry divisions of mining; construction; tobacco manufactures (a major manufacturing group, nondurable goods); transportation and public utilities; and finance, insurance, and real estate are not shown. This is because the seasonal component in these is small relative to the trend-cycle, or irregular components, or both, and consequently cannot be precisely separated.

17. 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		1980			1981									
	1979	1980	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept. P	Oct. P
TOTAL PRIVATE	$6.16	$6.66	$6.85	$6.92	$6.94	$7.03	$7.06	$7.10	$7.13	$7.17	$7.20	$7.24	$7.30	$7.39	$7.41
MINING	8.49	9.17	9.36	9.49	9.57	9.77	9.86	9.85	9.70	9.68	9.94	10.11	10.15	10.29	10.24
CONSTRUCTION	9.27	9.92	10.24	10.24	10.33	10.42	10.41	10.44	10.43	10.53	10.60	10.74	10.87	11.01	11.07
MANUFACTURING	6.70	7.27	7.49	7.60	7.70	7.73	7.75	7.80	7.88	7.92	7.97	8.02	8.02	8.14	8.14
Durable goods	7.13	7.75	8.01	8.11	8.23	8.23	8.26	8.32	8.40	8.45	8.52	8.55	8.57	8.68	8.69
Lumber and wood products	6.07	6.53	6.73	6.76	6.74	6.79	6.81	6.79	6.83	6.92	7.10	7.16	7.13	7.16	7.19
Furniture and fixtures	5.06	5.49	5.60	5.63	5.70	5.71	5.74	5.76	5.78	5.83	5.89	5.91	5.98	6.00	6.07
Stone, clay, and glass products	6.85	7.50	7.74	7.81	7.83	7.87	7.89	7.94	8.11	8.20	8.31	8.39	8.41	8.53	8.50
Primary metal industries	8.98	9.77	10.10	10.29	10.36	10.36	10.56	10.52	10.76	10.68	10.76	10.79	10.99	11.25	11.06
Fabricated metal products	6.85	7.45	7.69	7.77	7.88	7.89	7.91	8.01	8.05	8.17	8.23	8.22	8.27	8.33	8.37
Machinery, except electrical	7.32	8.00	8.30	8.38	8.50	8.53	8.56	8.62	8.67	8.75	8.81	8.85	8.86	8.98	9.06
Electric and electronic equipment	6.32	6.95	7.18	7.27	7.38	7.41	7.43	7.47	7.51	7.55	7.60	7.69	7.76	7.79	7.78
Transportation equipment	8.53	9.32	9.75	9.87	10.09	9.96	9.93	10.08	10.14	10.25	10.36	10.35	10.30	10.41	10.55
Instruments and related products	6.17	6.80	6.94	7.01	7.13	7.19	7.20	7.23	7.25	7.31	7.34	7.44	7.56	7.61	7.59
Miscellaneous manufacturing	5.03	5.47	5.56	5.62	5.73	5.82	5.83	5.85	5.91	5.93	5.93	5.98	5.97	6.06	6.07
Nondurable goods	6.01	6.56	6.74	6.82	6.89	6.97	6.98	7.01	7.08	7.11	7.14	7.23	7.24	7.37	7.33
Food and kindred products	6.27	6.86	6.95	7.09	7.13	7.21	7.24	7.29	7.37	7.43	7.43	7.47	7.50	7.57	7.58
Tobacco manufactures	6.67	7.73	7.69	7.86	8.10	8.50	8.56	8.61	8.90	9.03	9.33	9.43	8.61	8.71	8.68
Textile mill products	4.66	5.08	5.27	5.31	5.34	5.35	5.35	5.36	5.36	5.40	5.42	5.51	5.66	5.68	5.72
Apparel and other textile products	4.23	4.57	4.73	4.75	4.81	4.89	4.87	4.94	4.96	4.98	5.00	4.94	4.98	5.05	5.04
Paper and allied products	7.13	7.84	8.09	8.18	8.27	8.27	8.28	8.30	8.37	8.42	8.55	8.73	8.67	8.92	8.73
Printing and publishing	6.94	7.53	7.74	7.79	7.88	7.92	7.96	8.02	8.04	8.10	8.13	8.22	8.27	8.39	8.40
Chemicals and allied products	7.60	8.30	8.53	8.60	8.69	8.74	8.80	8.84	8.94	8.99	9.07	9.16	9.19	9.38	9.32
Petroleum and coal products	9.36	10.09	10.38	10.52	10.38	11.06	11.33	11.23	11.40	11.28	11.29	11.41	11.31	11.48	11.34
Rubber and miscellaneous plastics products	5.97	6.56	6.79	6.88	6.97	7.06	7.04	7.07	7.15	7.22	7.23	7.28	7.32	7.40	7.43
Leather and leather products	4.22	4.58	4.65	4.69	4.74	4.86	4.88	4.90	4.93	4.95	4.98	4.96	4.97	5.07	5.07
TRANSPORTATION AND PUBLIC UTILITIES	8.16	8.87	9.19	9.27	9.30	9.33	9.45	9.42	9.54	9.59	9.63	9.69	9.89	9.98	10.01
WHOLESALE AND RETAIL TRADE	5.06	5.48	5.59	5.64	5.62	5.80	5.84	5.85	5.87	5.89	5.89	5.91	5.94	6.03	6.00
WHOLESALE TRADE	6.39	6.96	7.09	7.19	7.23	7.32	7.38	7.42	7.47	7.51	7.51	7.59	7.67	7.71	7.73
RETAIL TRADE	4.53	4.88	4.98	5.02	4.99	5.18	5.20	5.20	5.22	5.23	5.23	5.24	5.26	5.36	5.30
FINANCE, INSURANCE, AND REAL ESTATE	5.27	5.78	5.91	6.02	6.00	6.10	6.21	6.19	6.20	6.24	6.24	6.27	6.37	6.36	6.41
SERVICES	5.36	5.85	6.00	6.09	6.12	6.21	6.27	6.29	6.30	6.33	6.33	6.34	6.41	6.50	6.55

18. Hourly Earnings Index for production or nonsupervisory workers on private nonagricultural payrolls, by industry division

[Seasonally adjusted data: 1977=100]

Industry	1980			1981									Sept. 1981 to Oct. 1981	Oct. 1980 to Oct. 1981
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept. P	Oct. P		
TOTAL PRIVATE (in current dollars)	130.6	132.1	132.6	133.8	135.0	135.8	136.7	137.7	138.4	139.0	140.7	141.3	141.6	0.2	8.4
Mining [1]	137.5	139.2	139.8	142.1	143.2	144.0	145.7	145.6	147.2	148.9	149.4	151.5	150.4	−.8	9.4
Construction	124.4	125.2	126.2	127.6	128.0	128.6	129.0	129.4	130.4	131.8	132.5	132.8	133.9	.8	7.6
Manufacturing	133.5	134.6	135.4	136.5	137.5	138.5	139.9	140.7	141.6	142.5	143.6	144.8	145.2	.3	8.8
Transportation and public utilities	130.9	132.6	132.8	133.7	135.4	136.1	137.3	138.9	139.8	139.3	141.8	141.8	142.5	−.5	8.8
Wholesale and retail trade	130.8	132.3	132.4	133.7	135.0	135.8	136.4	137.4	137.8	138.4	140.0	141.0	140.5	−.3	7.4
Finance, insurance, and real estate	129.9	132.4	131.9	133.2	135.0	136.0	135.4	136.8	137.1	137.4	140.4	139.9	140.8	.6	8.4
Services	128.5	130.5	131.1	132.0	133.2	134.0	134.8	136.0	136.6	136.9	139.4	139.7	140.0	.2	8.9
TOTAL PRIVATE (in constant dollars)	93.2	93.3	92.7	92.8	92.7	92.8	93.0	93.1	92.9	92.2	92.7	92.0	...	...	...

[1] The unadjusted data are shown because the seasonal component is small relative to the trend-cycle, irregular components, or both, and consequently cannot be separated with sufficient precision.

19. 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		1980			1981									
	1979	1980	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[p]	Oct.[p]
TOTAL PRIVATE	$219.91	$235.10	$241.81	$244.28	$247.06	$246.75	$247.10	$249.92	$250.98	$252.38	$254.88	$257.74	$259.88	$258.65	$259.35
MINING	365.07	396.14	408.10	413.76	422.04	425.97	422.01	416.66	422.92	423.98	418.47	439.79	447.62	450.70	455.68
CONSTRUCTION	342.99	367.04	388.10	376.83	384.28	379.29	364.35	388.37	384.87	388.56	394.32	404.90	405.45	393.06	410.70
MANUFACTURING	269.34	288.62	298.10	305.52	314.16	308.43	306.13	311.22	312.84	317.59	320.39	317.59	319.20	321.53	321.53
Durable goods	290.90	310.78	322.80	330.08	341.55	332.49	329.57	336.96	338.52	343.07	345.91	341.15	344.51	344.60	345.86
Lumber and wood products	239.16	252.06	263.82	264.99	267.58	263.45	262.19	264.81	267.05	274.03	280.45	277.09	278.07	272.80	271.78
Furniture and fixtures	195.82	209.17	215.60	216.19	225.72	217.55	219.84	223.49	220.80	224.46	229.12	223.40	230.83	225.60	229.45
Stone, clay, and glass products	284.28	306.00	319.66	323.33	325.73	317.16	312.44	322.36	331.70	337.02	342.37	342.31	344.81	346.32	345.10
Primary metal industries	371.77	391.78	402.99	419.83	430.98	425.80	429.79	432.37	443.31	436.81	440.08	434.84	442.90	456.75	437.98
Fabricated metal products	278.80	300.98	311.45	317.79	327.81	318.76	316.40	325.21	323.61	332.52	335.78	327.98	333.28	329.04	334.80
Machinery except electrical	305.98	328.00	337.81	346.09	358.70	351.44	349.25	355.14	353.74	360.50	362.09	357.54	360.60	361.89	366.02
Electric and electronic equipment	254.70	276.61	285.76	293.71	302.58	297.14	294.23	300.29	298.90	302.76	305.52	305.29	310.40	308.48	308.87
Transportation equipment	350.58	378.39	400.73	411.58	434.88	407.36	398.19	414.29	415.74	426.40	427.87	421.25	417.15	414.32	424.11
Instruments and related products	251.74	275.40	279.68	286.71	293.76	291.91	291.60	293.54	289.28	294.59	296.54	296.86	305.42	307.44	306.64
Miscellaneous manufacturing	195.16	211.69	216.28	219.74	226.34	224.65	223.87	227.57	228.13	230.68	231.27	230.23	232.83	235.13	237.94
Nondurable goods	236.19	255.84	263.53	268.71	274.91	273.22	271.52	274.09	275.41	280.13	282.03	282.69	285.26	288.17	285.87
Food and kindred products	250.17	272.34	275.92	284.31	287.34	288.40	284.53	285.77	289.64	295.71	295.71	295.81	300.00	301.29	298.65
Tobacco manufactures	253.46	294.51	307.60	315.19	308.61	328.10	329.56	320.29	331.08	348.56	359.21	364.00	350.43	349.27	340.26
Textile mill products	188.26	203.71	210.27	213.99	218.41	213.47	213.47	214.94	211.18	217.62	218.97	218.75	226.40	221.52	225.37
Apparel and other textile products	149.32	161.78	167.92	168.15	172.68	172.13	171.91	176.85	174.59	179.28	182.00	177.84	180.77	177.76	179.93
Paper and allied products	303.74	331.63	341.40	350.10	361.40	353.13	349.42	351.92	354.05	357.85	365.09	370.15	368.48	386.24	369.28
Printing and publishing	260.25	279.36	287.93	289.79	300.23	293.83	293.72	297.54	297.48	302.13	302.44	305.78	310.13	314.63	312.48
Chemicals and allied products	318.44	344.45	354.00	361.20	365.85	363.58	365.20	367.74	371.90	373.98	377.31	380.14	380.47	396.77	384.92
Petroleum and coal products	409.97	421.76	453.61	458.67	449.45	471.16	481.53	478.40	500.46	491.81	491.12	498.62	486.33	505.12	494.42
Rubber and miscellaneous plastics products	241.79	263.06	276.35	282.77	289.95	289.46	283.01	287.75	288.86	295.30	295.71	291.20	295.73	294.52	300.17
Leather and leather products	154.03	168.09	170.19	170.25	174.91	177.39	179.10	180.32	178.96	185.13	189.74	181.54	183.39	183.03	186.58
TRANSPORTATION AND PUBLIC UTILITIES	325.58	351.25	365.76	368.02	372.00	367.60	373.28	371.15	374.92	376.89	383.27	385.66	390.66	390.22	391.39
WHOLESALE AND RETAIL TRADE	164.96	176.46	179.44	181.04	182.65	183.86	185.13	186.62	188.43	188.48	190.25	193.85	194.83	194.17	191.40
WHOLESALE TRADE	247.93	267.96	274.38	276.82	281.25	281.82	282.65	285.67	287.60	289.14	289.89	294.49	296.83	296.84	297.61
RETAIL TRADE	138.62	147.38	149.40	150.60	152.20	152.81	153.92	154.96	156.60	156.38	158.99	161.92	162.53	161.87	157.94
FINANCE, INSURANCE, AND REAL ESTATE	190.77	209.24	214.53	218.53	217.80	222.04	226.04	225.32	225.06	225.26	225.26	227.60	231.23	228.96	232.04
SERVICES	175.27	190.71	195.60	198.53	199.51	201.83	204.40	205.05	205.38	206.73	206.99	209.22	210.89	210.60	212.88

20. Gross and spendable weekly earnings, in current and 1977 dollars, 1961 to date

[Averages for production or nonsupervisory workers on private nonagricultural payrolls]

Year and month	Private nonagricultural workers						Manufacturing workers					
	Gross average weekly earnings		Spendable average weekly earnings				Gross average weekly earnings		Spendable average weekly earnings			
			Worker with no dependents		Married worker with 3 dependents				Worker with no dependents		Married worker with 3 dependents	
	Current dollars	1977 dollars	Current dollars	1977 dollars	Current dollars	1977 dollars	Current dollars	1977 dollars	Current dollars	1977 dollars	Current dollars	1977 dollars
1961	$82.60	$167.21	$67.08	$135.79	$74.48	$150.77	$92.34	$186.92	$74.60	$151.01	$82.18	$166.36
1962	85.91	172.16	69.56	139.40	76.99	154.29	96.56	193.51	77.86	156.03	85.53	171.40
1963	88.46	175.17	71.05	140.69	78.56	155.56	99.23	196.50	79.51	157.45	87.25	172.77
1964	91.33	178.38	75.04	146.56	82.57	161.27	102.97	201.11	84.40	164.84	92.18	180.04
1965	95.45	183.21	79.32	152.25	86.63	166.28	107.53	206.39	89.08	170.98	96.78	185.76
1966	98.82	184.37	81.29	151.66	88.66	165.41	112.19	209.31	91.45	170.62	99.33	185.32
1967	101.84	184.83	83.38	151.32	90.86	164.90	114.49	207.79	92.97	168.73	100.93	183.18
1968	107.73	187.68	86.71	151.06	95.28	165.99	122.51	312.43	97.70	170.21	106.75	185.98
1969	114.61	189.44	90.96	150.35	99.99	165.27	129.51	214.07	101.90	168.43	111.44	184.20
1970	119.83	186.94	96.21	150.09	104.90	163.65	133.33	208.00	106.32	165.87	115.58	180.31
1971	127.31	190.58	103.80	155.39	112.43	168.31	142.44	213.23	114.97	172.11	124.24	185.99
1972	136.90	198.41	112.19	162.59	121.68	176.35	154.71	224.22	125.34	181.65	135.57	196.48
1973	145.39	198.35	117.51	160.31	127.38	173.78	166.46	227.09	132.57	180.86	143.50	195.77
1974	154.76	190.12	124.37	152.79	134.61	165.37	176.80	217.20	140.19	172.22	151.56	186.19
1975	163.53	184.16	132.49	149.20	145.65	164.02	190.79	214.85	151.61	170.73	166.29	187.26
1976	175.45	186.85	143.30	152.61	155.87	166.00	209.32	222.92	167.83	178.73	181.32	193.10
1977	189.00	189.00	155.19	155.19	169.93	169.93	228.90	228.90	183.80	183.80	200.06	200.06
1978	203.70	189.31	165.39	153.71	180.71	167.95	249.27	231.66	197.40	183.46	214.87	199.69
1979	219.91	183.41	178.00	148.46	194.82	162.49	269.34	224.64	212.70	177.40	232.38	193.81
1980	235.10	172.74	188.82	138.74	206.06	151.65	288.62	212.06	225.79	165.90	247.01	181.49
1980: October	241.81	172.72	193.51	138.22	211.49	151.06	298.10	212.93	232.22	165.87	254.20	181.57
November	244.28	172.88	195.24	138.17	213.37	151.00	305.52	216.22	237.26	167.91	259.83	183.89
December	247.06	173.38	197.18	138.37	215.47	151.21	314.16	220.46	242.86	170.43	266.14	186.76
1981: January	246.75	171.83	195.68	136.27	213.96	149.00	308.43	214.78	237.60	165.46	260.36	181.31
February	247.10	170.18	195.92	134.93	214.22	147.53	306.13	210.83	236.08	162.59	258.70	178.17
March	249.92	171.06	197.88	135.44	216.34	148.08	311.22	213.02	239.37	163.84	262.38	179.59
April	250.98	170.73	198.61	135.11	217.14	147.71	312.84	212.82	240.39	163.53	263.55	179.29
May	252.38	170.18	199.59	134.59	218.20	147.13	317.59	214.15	243.40	164.13	266.99	180.03
June	254.88	170.49	201.32	134.66	220.08	147.21	320.39	214.31	245.18	164.00	269.01	179.94
July	257.74	170.35	203.30	134.37	222.24	146.89	317.59	209.91	243.40	160.87	266.99	176.46
August	259.88	170.64	204.79	134.46	223.85	146.98	319.20	209.59	244.42	160.49	268.15	176.07
September[p]	258.65	168.17	203.93	132.59	222.92	144.94	321.53	209.06	245.90	159.88	269.84	175.45
October[p]	259.35	([1])	206.30	([1])	224.39	([1])	321.53	([1])	248.61	([1])	271.35	([1])

[1] Not available.

NOTE: The earnings expressed in 1977 dollars have been adjusted for changes in price level as measured by the Bureau's Consumer Price Index for Urban Wage Earners and Clerical Workers. These series are described in "The Spendable Earnings Series: A Technical Note on its Calculation," **Employment and Earnings and Monthly Report on the Labor Force,** February 1969, pp. 6–13. See also "Spendable Earnings Formulas, 1979–81," **Employment and Earnings,** March 1981, pp. 10–11.

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 records 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.

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.

21. Unemployment insurance and employment service operations

[All items except average benefits amounts are in thousands]

Item	1980				1981								
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
All programs:													
Insured unemployment	3,961	3,661	3,726	4,085	4,621	4,264	3,948	3,453	3,111	2,949	3,012	2,874	2,681
State unemployment insurance program:[1]													
Initial claims[2]	1,702	1,808	1,673	2,544	2,653	1,806	1,684	1,647	1,417	1,741	r2,114	p1,664	....
Insured unemployment (average weekly volume)	3,087	2,903	2,983	3,321	3,844	3,669	3,382	2,988	2,691	2,596	2,743	2,656	2,489
Rate of insured unemployment	3.6	3.3	3.4	3.8	4.4	4.2	3.9	3.4	3.1	3.0	3.1	3.0	2.9
Weeks of unemployment compensated	11,689	11,443	9,524	12,603	14,228	12,882	13,504	11,871	9,790	9,928	r10,494	p14,563	....
Average weekly benefit amount for total unemployment	$99.86	$92.32	$101.96	$101.43	$102.34	$101.89	$105.63	$105.96	$105.49	$99.02	$103.47	p$105.41	....
Total benefits paid	$1,144,885	$1,125,416	$1,055,065	$1,242,957	$1,416,513	$1,313,507	$1,393,612	$1,226,815	$1,006,341	$1,012,764	r$1,061,743	p$987,262	....
Unemployment compensation for ex-servicemen:[3]													
Initial claims[1]	25	23	17	21	19	17	18	16	15	19	22	p19	....
Insured unemployment (average weekly volume)	56	56	54	55	57	54	51	46	43	42	44	44	34
Weeks of unemployment compensated	245	255	216	261	257	221	234	214	183	192	203	p190	....
Total benefits paid	$24,804	$25,880	$21,024	$27,015	$26,646	$22,517	$24,668	$23,048	$19,965	$21,145	$22,762	$21,451	....
Unemployment compensation for Federal civilian employees:[4]													
Initial claims	19	21	14	18	22	13	12	12	11	13	15	p17	....
Insured unemployment (average weekly volume)	29	32	35	37	41	40	36	31	27	25	25	25	29
Weeks of unemployment compensated	105	130	118	150	160	148	156	135	107	105	r105	p93	....
Total benefits paid	$9,699	$11,917	$11,365	$14,184	$15,432	$14,573	$15,561	$13,701	$11,023	$10,705	$10,788	$9,662	....
Railroad unemployment insurance:													
Applications	10	9	7	11	13	5	5	6	6	26	41	13	....
Insured unemployment (average weekly volume)	40	38	38	39	53	50	44	41	35	30	28	29	....
Number of payments	89	84	70	83	118	104	115	94	79	86	32	63	....
Average amount of benefit payment	$211.99	$208.49	$209.00	$212.27	$209.38	$214.56	$214.93	$201.12	$199.43	$201.06	$199.63	$202.53	....
Total benefits paid	$18,809	$17,789	$14,269	$18,046	$20,303	$22,049	$23,233	$19,239	$15,428	$16,206	$11,541	$7,071	....
Employment service:[5]													
New applications and renewals	16,831	....	....	4,476	....	....	r8,778	....	....	12,868	....	....	....
Nonfarm placements	3,896	....	....	871	....	....	r1,595	....	....	2,446	....	....	....

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

[2] Includes interstate claims for the Virgin Islands. Excludes transition claims under State programs.

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

[4] Includes the Virgin islands. Excludes data on claims and payments made jointly with State programs.

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

NOTE: Data for Puerto Rico included. Dashes indicate data not available.

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. One index, a new CPI for All Urban Consumers, covers 80 percent of the total noninstitutional population; and the other index, a revised CPI for Urban Wage Earners and Clerical Workers, covers about half the new index population. The All Urban Consumers index includes, 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, doctor's and dentist's 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. Prices are collected from over 18,000 tenants, 24,000 retail establishments, and 18,000 housing units for property taxes 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 producers 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

Beginning with the May 1978 issue of the *Review*, regional CPI's cross classified by population size, were introduced. These indexes will 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 will be published bimonthly. (See table 24.)

For further details about the new and the revised indexes and a comparison of various aspects of these indexes with the old unrevised CPI, see *Facts About the Revised Consumer Price Index*, a pamphlet in the Consumer Price Index Revision 1978 series. See also *The Consumer Price Index: Concepts and Content Over the Years*, Report 517, revised edition (Bureau of Labor Statistics, May 1978).

For interarea comparisons of living costs at three hypothetical standards of living, see the family budget data published in the *Handbook of Labor Statistics, 1977*, Bulletin 1966 (Bureau of Labor Statistics, 1977), tables 122–133. Additional data and analysis on price changes are provided in the *CPI Detailed Report* and *Producer Prices and Price Indexes*, both monthly publications of the Bureau.

As of January 1976, the Wholesale Price Index (as it was then called) incorporated a revised weighting structure reflecting 1972 values of shipments. From January 1967 through December 1975, 1963 values of shipments were used as weights.

For a discussion of the general method of computing consumer, producer, and industry price indexes, see *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976), chapters 13–15. See also John F. Early, "Improving the measurement of producer price change," *Monthly Labor Review*, April 1978, pp. 7–15. For industry prices, see also Bennett R. Moss, "Industry and Sector Price Indexes," *Monthly Labor Review*, August 1965, pp. 974–82.

22. Consumer Price Index for Urban Wage Earners and Clerical Workers, annual averages and changes, 1967–80

[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	116.8	5.8
1971	121.3	4.3	118.3	3.1	123.4	4.4	119.8	3.2	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	6.0	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	267.2	11.3	203.7	8.5	213.6	8.8

23. 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 (revised)						
	1980	1981						1980	1981					
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
All items	251.7	266.8	269.0	271.3	274.4	276.5	279.3	251.9	266.8	269.1	271.4	274.6	276.5	279.1
Food and beverages	254.2	265.7	265.4	266.5	268.9	270.1	270.7	255.1	266.1	265.9	267.0	269.4	270.6	271.0
Housing	267.7	284.8	288.5	292.2	297.0	299.7	303.7	267.6	284.3	288.1	291.9	297.0	299.6	303.6
Apparel and upkeep	182.2	186.4	186.4	185.8	184.7	187.4	190.7	181.4	186.0	186.2	185.8	185.5	187.9	190.5
Transportation	254.7	275.3	277.8	279.9	282.6	283.7	285.2	255.2	276.3	278.9	281.0	283.9	285.1	286.6
Medical care	270.6	287.0	289.0	291.5	295.6	299.3	301.7	272.2	289.1	290.8	292.9	295.4	298.6	300.9
Entertainment	209.8	219.2	220.3	220.8	221.1	222.3	224.0	208.1	217.0	217.7	218.3	218.7	219.9	221.5
Other goods and services	220.6	229.9	232.2	233.4	234.4	235.6	243.0	219.0	227.9	230.4	231.4	232.4	233.5	239.3
Commodities	239.0	250.8	251.9	253.2	255.0	256.2	257.7	239.2	251.2	252.4	253.8	255.7	256.9	258.2
Commodities less food and beverages	228.4	240.0	241.7	243.1	244.7	245.8	247.6	228.4	240.5	242.3	243.8	245.5	246.7	248.4
Nondurables less food and beverages	244.1	263.8	263.8	263.5	262.9	263.9	265.8	246.0	266.5	266.6	266.3	266.0	266.8	268.5
Durables	215.3	221.1	223.9	226.6	229.6	230.9	232.6	213.5	219.3	222.4	225.2	228.4	229.9	231.5
Services	274.8	295.4	299.6	303.5	308.8	312.2	317.3	275.4	295.9	300.0	303.9	309.6	312.7	317.7
Rent, residential	195.1	204.2	205.9	206.8	207.8	210.3	211.9	194.8	203.9	205.5	206.4	207.4	209.9	211.5
Household services less rent	322.6	353.3	360.4	366.7	374.8	379.9	387.4	325.3	356.2	363.5	370.1	379.4	384.2	392.2
Transportation services	249.4	264.4	266.6	269.6	275.0	275.7	277.7	248.2	263.1	265.5	268.2	273.8	274.3	276.3
Medical care services	292.3	309.8	311.7	314.4	319.2	323.4	326.1	294.3	312.2	313.6	315.8	318.5	322.1	324.7
Other services	225.3	234.4	235.3	236.3	237.6	239.1	245.8	225.4	233.8	234.5	235.6	236.8	238.3	243.6
Special indexes:														
All items less food	248.6	264.2	267.0	269.5	272.7	274.9	278.2	248.7	264.4	267.2	269.7	273.1	275.2	278.2
All items less mortgage interest costs	241.5	253.6	255.2	256.9	259.3	260.9	262.9	242.0	254.2	255.8	257.5	260.0	261.5	263.3
Commodities less food	226.6	238.0	239.6	241.1	242.6	243.8	245.5	226.5	238.6	240.3	241.8	243.5	244.7	246.3
Nondurables less food	239.3	258.1	258.2	258.0	257.5	258.4	260.3	241.1	260.7	260.9	260.7	260.4	261.2	262.9
Nondurables less food and apparel	271.3	297.7	298.0	298.0	297.8	298.0	299.1	273.0	299.9	300.1	300.0	299.8	300.0	301.3
Nondurables	250.2	265.9	265.8	266.2	267.1	268.1	269.5	251.5	267.3	267.2	267.6	268.7	269.7	270.7
Services less rent	289.8	312.8	317.4	321.9	328.1	331.7	337.5	290.7	313.5	318.2	322.6	329.3	332.6	338.3
Services less medical care	271.0	291.8	296.2	300.1	305.4	308.8	314.1	271.4	292.0	296.4	300.4	306.3	309.4	314.6
Domestically produced farm foods	246.2	255.3	254.7	255.9	259.5	260.6	260.8	246.1	255.0	254.2	255.3	259.0	259.9	259.9
Selected beef cuts	278.8	267.7	270.9	271.6	275.3	276.7	277.9	280.8	270.7	273.8	274.3	277.9	277.2	279.7
Energy	370.1	409.8	411.3	414.0	415.7	416.1	417.1	373.1	414.0	414.9	417.3	418.9	418.9	420.1
All items less energy	242.5	255.6	257.9	260.2	263.5	265.6	268.6	242.0	254.7	257.0	259.3	262.7	264.7	267.5
All items less food and energy	236.9	250.1	253.0	255.6	259.0	261.3	264.8	235.9	248.9	251.9	254.5	258.1	260.3	263.6
Commodities less food and energy	207.2	213.5	215.7	217.5	219.4	220.9	222.9	205.7	212.2	214.6	216.6	218.7	220.2	222.1
Energy commodities	401.7	458.4	455.4	453.1	451.3	449.9	449.3	402.7	459.3	456.0	453.7	451.9	450.6	450.0
Services less energy	271.3	292.7	296.5	299.8	304.9	308.3	313.6	271.9	293.2	297.0	300.2	305.7	308.9	314.0
Purchasing power of the consumer dollar, 1967 = $1	$0.397	$0.375	$0.372	$0.369	$0.364	$0.362	$0.358	$0.397	$0.375	$0.372	$0.368	$0.364	$0.362	$0.358

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
FOOD AND BEVERAGES	254.2	265.7	265.4	266.5	268.9	270.1	270.7	255.1	266.1	265.9	267.0	269.4	270.6	271.0
Food	261.1	272.9	272.5	273.6	276.2	277.4	278.0	261.9	273.2	272.9	274.0	276.6	277.7	278.1
Food at home	258.9	268.7	267.7	268.7	271.6	272.8	273.2	258.6	268.2	267.2	268.2	271.1	272.2	272.3
Cereals and bakery products	250.3	268.3	270.0	271.5	272.4	272.6	274.3	251.1	268.0	269.4	270.7	271.5	272.0	273.2
Cereals and cereal products (12/77 = 100)	137.1	145.4	146.8	148.3	149.0	149.5	150.1	137.8	146.9	148.4	150.0	150.6	151.3	151.2
Flour and prepared flour mixes (12/77 = 100)	133.3	137.1	138.8	139.0	139.5	139.6	139.5	134.1	139.2	140.3	141.4	141.9	142.0	141.1
Cereal (12/77 = 100)	138.5	147.8	149.8	152.4	153.4	154.6	155.7	138.6	148.9	151.3	154.0	154.8	156.4	157.2
Rice, pasta, and cornmeal (12/77 = 100)	138.4	149.5	149.8	150.9	151.2	151.4	151.6	140.2	151.4	152.0	152.7	153.2	153.1	152.6
Bakery products (12/77 = 100)	130.9	140.8	141.5	142.1	142.5	142.4	143.5	131.2	140.1	140.6	141.0	141.4	141.5	142.4
White bread	219.6	233.2	235.1	236.0	236.4	235.6	238.2	219.3	232.1	233.2	233.1	233.9	233.0	235.9
Other breads (12/77 = 100)	130.9	139.5	139.3	140.2	140.6	140.8	141.5	134.3	141.2	141.7	142.5	142.9	143.4	143.4
Fresh biscuits, rolls, and muffins (12/77 = 100)	129.2	140.4	141.5	141.7	142.4	143.4	143.3	128.1	138.7	139.6	139.7	141.7	141.0	140.1
Fresh cakes and cupcakes (12/77 = 100)	129.5	142.1	142.3	142.3	142.7	142.7	144.4	129.7	140.8	141.2	141.2	141.4	141.2	142.3
Cookies (12/77 = 100)	129.9	141.2	141.8	143.3	143.0	143.1	143.9	131.7	141.8	142.1	143.3	142.6	144.1	144.6
Crackers and bread and cracker products (12/77 = 100)	124.2	130.9	128.2	130.7	131.6	130.6	132.0	124.5	131.1	128.9	131.5	131.2	130.9	132.2
Fresh sweetrolls, coffeecake, and donuts (12/77 = 100)	131.6	141.7	142.8	142.9	143.9	143.9	144.3	132.0	141.7	142.5	142.3	142.8	143.4	144.8
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	132.1	144.0	147.0	146.1	147.2	147.1	148.0	129.9	139.0	140.1	140.3	140.9	141.5	142.1
Meats, poultry, fish, and eggs	251.8	247.7	247.0	248.7	254.1	255.8	257.7	251.2	247.1	246.3	248.4	254.1	255.5	257.5
Meats, poultry, and fish	257.7	253.0	253.2	255.0	260.7	262.2	263.4	257.1	252.2	252.4	254.5	260.5	261.8	263.2
Meats	257.8	251.0	252.3	254.2	259.6	262.0	263.4	257.2	250.7	251.7	253.9	259.7	261.3	263.3
Beef and veal	277.5	267.4	270.3	271.1	274.5	275.9	277.1	279.1	269.5	272.5	273.0	276.5	275.9	278.3
Ground beef other than canned	276.8	264.8	264.1	264.6	264.5	267.4	270.3	279.9	269.0	267.8	267.9	267.9	269.4	273.8
Chuck roast	287.7	281.4	280.3	281.0	283.5	285.3	289.4	295.4	291.8	290.9	288.9	295.5	295.5	299.9
Round roast	248.0	242.8	246.8	246.2	245.6	247.2	244.1	249.0	247.5	249.4	249.5	249.8	247.3	249.1
Round steak	260.7	252.9	256.0	255.1	258.9	256.0	255.9	261.4	251.3	253.7	253.6	257.0	251.5	252.5
Sirloin steak	280.9	261.5	271.4	274.6	284.3	282.2	281.9	282.2	262.7	275.3	278.7	285.6	279.2	281.9
Other beef and veal (12/77 = 100)	161.8	156.1	159.2	159.9	163.5	164.3	164.9	161.2	154.9	158.5	159.2	162.4	162.6	162.8
Pork	222.7	217.4	217.3	221.2	231.5	235.3	238.1	222.8	216.7	216.3	221.3	232.6	236.5	239.4
Bacon	220.1	209.0	212.7	216.5	228.1	231.1	237.1	223.0	210.0	215.2	220.5	230.5	234.5	241.1
Chops	206.2	209.2	203.7	209.8	221.8	224.1	225.1	205.0	206.3	201.5	209.8	222.4	224.4	224.7
Ham other than canned (12/77 = 100)	102.2	95.2	97.2	98.0	102.0	105.3	106.8	100.7	92.6	93.8	95.1	100.4	103.7	105.6
Sausage	277.9	277.4	277.7	278.9	289.7	297.2	300.7	280.0	280.1	278.5	278.7	293.4	298.6	302.3
Canned ham	225.1	230.1	230.5	229.8	233.0	234.9	239.5	225.9	230.8	231.4	230.1	234.4	238.0	242.9
Other pork (12/77 = 100)	128.6	123.4	122.7	126.7	133.6	135.0	135.4	128.5	123.8	122.4	127.7	134.5	136.3	136.7
Other meats	254.9	255.4	253.9	255.9	258.4	261.4	260.7	251.5	253.4	250.6	253.1	255.6	259.6	258.7
Frankfurters	256.1	253.5	247.6	250.7	251.8	259.8	256.4	254.3	252.8	247.0	249.8	251.9	260.4	259.1
Bologna, liverwurst, and salami (12/77 = 100)	143.5	143.5	143.0	143.9	145.9	147.0	147.5	141.2	142.6	140.6	141.9	144.6	145.7	144.8
Other lunchmeats (12/77 = 100)	125.7	127.9	126.9	127.6	129.1	130.6	131.8	123.5	126.4	124.8	126.0	126.5	128.8	129.5
Lamb and organ meats (12/77 = 100)	143.8	143.1	145.3	146.5	147.6	146.8	144.4	145.0	143.8	145.9	147.1	148.9	148.3	146.0
Poultry	205.2	196.8	194.7	196.8	204.8	202.0	199.7	203.3	194.6	192.5	194.4	203.1	201.2	198.1
Fresh whole chicken	214.0	198.0	190.3	193.8	206.9	201.4	197.3	209.6	194.1	187.0	190.3	202.9	199.6	194.0
Fresh and frozen chicken parts (12/77 = 100)	134.0	127.5	127.5	128.3	133.0	131.8	130.5	134.1	125.8	126.6	127.0	133.3	131.6	130.1
Other poultry (12/77 = 100)	122.9	125.9	128.3	128.9	130.0	129.7	129.9	122.0	126.3	127.5	128.2	129.3	129.9	129.6
Fish and seafood	335.8	359.7	353.2	352.1	356.9	356.8	362.6	333.4	353.7	349.9	349.8	353.5	356.4	358.6
Canned fish and seafood (12/77 = 100)	133.2	138.8	139.2	139.3	140.6	139.8	140.9	131.0	136.6	137.8	137.9	139.0	138.5	139.4
Fresh and frozen fish and seafood (12/77 = 100)	124.8	135.9	131.8	131.0	133.1	133.6	136.5	124.5	133.6	130.5	130.4	131.9	134.1	134.9
Eggs	179.9	184.3	170.5	172.1	174.2	177.6	188.8	178.4	185.5	171.5	173.0	175.0	177.7	189.5
Dairy products	230.6	243.5	243.8	243.8	244.2	243.8	244.3	230.9	243.8	243.9	243.9	243.9	243.9	244.1
Fresh milk and cream (12/77 = 100)	128.0	134.6	134.9	134.8	134.9	134.5	134.7	128.2	134.7	134.7	134.5	134.4	134.3	134.3
Fresh whole milk	209.7	220.4	220.8	220.7	220.7	220.2	220.0	209.8	220.2	220.4	220.0	219.9	219.8	219.4
Other fresh milk and cream (12/77 = 100)	127.7	134.5	134.7	134.6	134.9	134.2	135.4	128.3	135.2	134.8	135.1	134.5	134.4	135.3
Processed dairy products (12/77 = 100)	133.6	142.0	141.9	142.0	142.5	142.5	143.0	134.1	142.6	142.6	142.9	143.1	143.3	143.4
Butter	236.2	244.3	245.2	245.1	245.8	246.2	247.1	238.8	247.7	247.6	248.7	247.7	248.5	249.9
Cheese (12/77 = 100)	132.3	140.6	140.5	140.5	140.7	140.8	140.8	132.7	140.5	140.6	140.9	141.3	141.5	140.9
Ice cream and related products (12/77 = 100)	135.7	146.7	146.2	146.4	147.6	147.9	148.7	135.4	147.8	147.8	147.8	148.0	147.9	149.1
Other dairy products (12/77 = 100)	128.9	135.7	136.1	136.3	136.6	135.6	137.3	129.3	136.1	136.4	136.8	137.2	137.2	137.6
Fruits and vegetables	257.4	281.9	276.8	278.1	284.4	286.1	281.6	255.8	280.0	274.3	275.3	281.7	282.5	276.3
Fresh fruits and vegetables	269.6	296.4	284.4	285.2	294.0	295.8	286.9	267.8	294.5	281.8	281.0	290.2	290.4	278.2
Fresh fruits	286.3	271.6	276.6	278.9	292.1	306.9	306.4	284.9	268.6	271.5	272.1	285.5	298.4	293.7
Apples	295.2	231.1	235.4	239.9	251.9	282.1	262.9	295.3	232.1	232.7	241.0	253.1	284.6	261.8
Bananas	238.0	266.8	266.3	260.5	240.6	245.2	250.7	234.3	262.2	264.2	259.0	233.8	239.9	251.3
Oranges	296.5	287.5	274.1	287.1	327.8	353.7	346.2	284.2	274.3	261.1	274.0	307.0	325.1	314.6
Other fresh fruits (12/77 = 100)	150.8	147.1	154.9	154.4	160.4	163.5	168.4	151.9	147.6	153.3	149.9	158.9	160.5	161.5
Fresh vegetables	253.9	319.6	291.7	291.1	295.9	285.5	268.6	252.4	318.0	291.1	289.0	294.4	283.2	264.4
Potatoes	313.2	378.1	384.4	414.3	414.9	375.1	329.1	309.2	369.8	378.1	402.7	404.2	362.8	316.8
Lettuce	265.9	226.9	252.5	238.7	261.3	290.6	293.5	262.5	231.5	255.6	237.1	259.2	290.0	292.9
Tomatoes	214.2	375.3	200.2	205.2	194.0	209.9	193.9	210.8	370.7	193.8	200.8	195.5	211.0	191.3
Other fresh vegetables (12/77 = 100)	127.1	170.0	158.6	151.8	154.5	143.6	137.9	127.6	170.0	160.1	153.6	155.8	144.1	136.6
Processed fruits and vegetables	246.3	268.5	270.9	272.8	276.4	277.9	278.3	244.6	266.1	268.4	271.4	274.6	276.2	276.7
Processed fruits (12/77 = 100)	127.4	141.0	142.1	142.0	143.1	143.4	143.7	127.6	140.1	141.6	142.1	142.8	143.4	143.7
Frozen fruit and fruit juices (12/77 = 100)	119.3	142.8	144.2	143.4	144.0	143.5	143.6	118.5	140.2	142.0	142.3	142.9	142.8	142.8
Fruit juices other than frozen (12/77 = 100)	130.8	144.5	145.3	145.5	146.8	147.4	147.5	131.0	143.2	145.1	145.8	146.1	147.1	147.8
Canned and dried fruits (12/77 = 100)	130.7	135.6	136.7	137.1	138.4	139.1	139.8	131.5	136.6	137.4	137.9	139.1	139.8	140.1
Processed vegetables (12/77 = 100)	120.1	128.9	130.2	132.1	134.6	135.7	135.9	118.7	128.1	128.9	131.2	133.6	134.6	134.8
Frozen vegetables (12/77 = 100)	119.7	128.3	129.8	130.8	133.2	134.9	135.7	119.4	129.1	129.6	131.9	134.1	135.7	136.6

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	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)	121.4	130.2	131.5	134.6	136.0	137.4	136.8	119.6	129.0	130.1	133.6	134.8	135.4	135.1
Other canned and dried vegetables (12/77 = 100)	119.6	128.7	129.8	131.4	134.6	135.4	135.6	117.9	127.1	128.0	129.7	132.8	133.7	133.8
Other foods at home	309.2	324.7	323.7	323.6	323.3	325.1	325.7	309.1	325.4	324.8	324.5	324.2	326.1	326.2
Sugar and sweets	361.1	375.8	367.1	361.3	360.0	361.3	361.4	361.8	377.8	368.1	363.0	362.8	362.7	363.1
Candy and chewing gum (12/77 = 100)	134.2	144.1	145.1	145.2	145.9	146.1	146.8	134.7	145.1	145.8	146.5	147.3	147.4	147.6
Sugar and artificial sweeteners (12/77 = 100)	200.2	195.5	178.4	168.2	164.6	164.3	163.0	199.7	196.0	179.2	169.3	166.6	165.3	164.9
Other sweets (12/77 = 100)	129.2	139.8	141.4	142.6	142.9	145.0	145.3	127.7	138.7	139.7	140.8	141.8	142.9	143.8
Fats and oils (12/77 = 100)	243.6	270.1	270.7	269.6	269.0	269.2	268.5	244.6	270.4	270.9	269.5	269.0	268.7	267.4
Margarine	249.2	256.1	256.1	256.1	255.9	258.2	256.7	251.8	256.1	256.7	256.0	256.6	255.7	254.5
Nondairy substitutes and peanut butter (12/77 = 100)	125.8	182.4	182.7	181.8	181.0	179.8	178.5	125.8	182.3	181.6	180.5	179.4	178.8	177.2
Other fats, oils, and salad dressings (12/77 = 100)	127.4	129.8	130.4	129.6	129.4	129.4	129.6	127.4	129.7	130.4	129.6	129.4	129.6	129.2
Nonalcoholic beverages	403.9	414.4	412.3	412.8	410.3	413.1	413.7	403.6	415.8	414.6	414.6	411.3	415.2	414.7
Cola drinks, excluding diet cola	276.7	298.0	295.7	297.0	294.7	298.2	298.9	274.9	294.9	293.7	294.1	290.8	296.6	295.6
Carbonated drinks, including diet cola (12/77 = 100)	132.5	141.8	140.6	140.8	139.6	141.5	142.4	130.2	139.8	139.4	139.3	138.3	138.9	140.3
Roasted coffee	426.1	356.7	354.4	353.1	351.4	346.0	345.1	423.1	352.5	350.5	348.5	346.6	342.8	340.5
Freeze dried and instant coffee	376.1	339.5	339.1	335.2	334.3	333.3	330.8	374.8	340.9	340.2	337.1	334.9	333.8	331.4
Other noncarbonated drinks (12/77 = 100)	124.5	133.5	134.0	134.5	134.2	134.9	134.9	123.8	133.5	133.9	134.4	134.0	135.0	134.6
Other prepared foods	235.2	251.2	252.9	254.4	256.3	257.9	259.0	235.6	252.4	254.7	255.8	257.9	259.7	260.5
Canned and packaged soup (12/77 = 100)	123.8	129.3	131.5	132.6	133.2	133.6	134.9	124.7	129.8	132.1	133.5	134.5	134.8	136.4
Frozen prepared foods (12/77 = 100)	133.9	142.3	141.6	142.2	143.7	143.5	144.8	131.6	139.8	139.6	140.8	142.3	142.5	142.7
Snacks (12/77 = 100)	129.8	145.6	145.9	147.2	147.5	148.8	149.6	130.4	148.1	149.1	149.1	150.0	151.5	152.6
Seasonings, olives, pickles, and relish (12/77 = 100)	130.7	139.9	140.0	141.1	142.0	144.4	144.4	129.5	138.7	139.3	140.3	141.4	142.8	142.7
Other condiments (12/77 = 100)	133.0	139.2	141.1	140.8	142.3	142.9	143.3	135.0	141.7	143.6	143.2	144.4	145.6	145.3
Miscellaneous prepared foods (12/77 = 100)	130.6	136.7	138.6	139.3	140.7	142.0	142.3	131.1	137.7	139.6	139.9	141.0	142.1	142.8
Other canned and packaged prepared foods (12/77 = 100)	126.9	135.1	136.6	137.7	139.0	139.5	139.9	127.2	135.9	137.2	138.5	139.8	140.8	141.1
Food away from home	271.4	288.2	289.3	290.6	292.4	293.7	294.8	274.9	290.7	291.9	293.5	295.2	296.4	297.6
Lunch (12/77 = 100)	132.1	140.7	141.0	141.5	142.6	143.2	143.6	132.9	141.4	141.8	142.8	143.6	144.2	144.6
Dinner (12/77 = 100)	131.9	139.4	139.9	140.7	141.3	141.9	142.4	133.8	141.1	141.7	142.6	143.0	143.7	144.3
Other meals and snacks (12/77 = 100)	130.4	138.8	139.9	140.3	141.6	142.1	143.1	133.3	140.1	141.1	141.3	142.7	143.1	143.9
Alcoholic beverages	189.6	197.8	199.1	199.8	200.5	201.4	202.5	191.7	199.4	201.2	202.1	202.8	203.8	204.6
Alcoholic beverages at home (12/77 = 100)	123.6	128.5	129.3	129.7	130.1	130.6	131.4	125.1	130.0	131.1	131.5	131.9	132.4	132.8
Beer and ale	190.8	199.7	201.4	202.0	201.8	202.6	203.6	191.9	199.8	201.8	202.4	202.4	203.2	203.5
Whiskey	137.6	141.3	142.5	143.0	143.7	144.7	145.4	138.5	142.3	143.2	144.0	144.7	145.6	146.2
Wine	214.7	224.7	223.9	224.6	227.5	227.4	229.7	219.8	233.2	234.3	233.4	236.9	235.5	237.6
Other alcoholic beverages (12/77 = 100)	111.7	114.9	115.5	116.1	116.3	117.0	117.5	111.2	114.1	114.6	115.7	155.9	117.0	117.1
Alcoholic beverages away from home (12/77 = 100)	124.5	131.6	132.6	133.1	134.1	134.7	135.4	124.8	130.6	132.0	133.4	134.0	135.4	136.2
HOUSING	267.7	284.8	288.5	292.2	297.0	299.7	303.7	267.6	284.3	288.1	291.9	297.0	299.6	303.6
Shelter	285.3	303.8	308.4	312.6	318.5	322.0	326.9	286.8	304.6	309.4	313.7	320.2	323.6	328.6
Rent, residential	195.1	204.2	205.9	206.8	207.8	210.3	211.9	194.8	203.9	205.5	206.4	207.4	209.9	211.5
Other rental costs	268.9	285.9	286.4	289.5	293.6	298.5	308.1	268.6	285.8	286.1	289.7	293.3	299.0	308.0
Lodging while out of town	287.0	307.5	307.2	311.8	318.3	325.7	326.3	285.6	306.0	305.5	310.6	316.3	324.4	325.3
Tenants' insurance (12/77 = 100)	124.7	131.2	131.9	133.1	133.3	133.9	135.9	125.2	131.6	132.3	133.4	133.7	134.5	136.4
Homeownership	317.6	339.3	345.0	350.4	358.0	361.8	367.8	320.2	341.1	347.1	352.7	361.2	364.8	371.0
Home purchase	261.5	260.7	263.0	266.6	271.4	272.6	274.5	262.1	259.7	262.2	266.2	271.2	272.3	273.8
Financing, taxes, and insurance	393.5	447.1	458.3	467.2	480.0	488.3	501.8	398.9	452.6	464.3	473.8	486.9	495.3	509.0
Property insurance	359.8	378.5	383.7	386.6	387.1	389.0	389.7	362.9	382.5	387.1	388.1	388.3	390.5	391.9
Property taxes	191.2	199.9	199.8	200.3	201.4	205.2	206.2	193.0	201.7	201.7	202.2	203.2	207.1	208.0
Contracted mortgage interest cost	500.9	579.8	596.9	610.4	630.1	641.3	662.0	503.6	580.9	598.6	612.9	632.6	643.8	664.4
Mortgage interest rates	188.9	219.5	224.0	226.4	299.4	232.4	238.2	189.5	220.3	224.9	227.2	230.3	233.3	239.2
Maintenance and repairs	291.6	309.3	312.9	315.5	319.3	320.5	321.6	290.3	304.5	307.3	308.2	316.2	315.8	318.1
Maintenance and repair services	315.9	337.0	341.2	344.4	349.0	350.6	352.5	315.6	334.1	337.6	338.7	350.5	349.5	352.5
Maintenance and repair commodities	234.9	244.4	246.3	247.6	249.3	249.5	248.7	233.9	239.7	241.1	241.5	242.4	243.1	244.1
Paint and wallpaper, supplies, tools, and equipment (12/77 = 100)	135.6	143.4	143.9	145.3	146.7	146.9	146.2	132.7	136.8	137.7	138.4	138.2	139.2	139.1
Lumber, awnings, glass, and masonry (12/77 = 100)	122.2	124.3	125.1	124.7	125.0	124.2	125.0	121.8	123.1	123.7	122.7	123.0	122.0	123.2
Plumbing, electrical, heating, and cooling supplies (12/77 = 100)	123.2	127.9	130.7	131.2	132.7	132.0	131.2	126.1	127.9	128.1	128.5	130.1	130.6	131.7
Miscellaneous supplies and equipment (12/77 = 100)	122.7	126.4	127.6	128.5	129.2	130.5	131.2	125.2	129.9	130.8	131.7	132.5	133.3	134.3
Fuel and other utilities	288.2	310.5	314.9	320.2	325.1	327.8	331.1	288.7	311.4	315.7	321.2	326.4	328.7	332.3
Fuels	364.5	396.5	403.3	411.7	417.2	419.5	422.4	363.8	396.2	402.5	411.2	417.0	418.7	422.2
Fuel oil, coal, and bottled gas	561.5	690.6	685.8	682.0	677.9	674.6	673.4	562.9	693.7	688.6	685.1	681.1	677.9	677.0
Fuel oil	585.4	727.0	720.6	715.7	711.0	707.3	705.7	585.9	729.4	723.1	718.4	713.8	710.2	709.0
Other fuels (6/78 = 100)	142.1	162.5	163.6	164.3	164.0	163.6	163.8	143.8	164.2	164.7	165.5	165.4	165.1	165.3
Gas (piped) and electricity	318.4	330.6	339.6	350.2	357.6	360.8	364.5	317.4	329.6	338.1	349.0	356.7	359.4	363.6
Electricity	269.2	277.3	281.9	296.7	306.2	311.9	309.8	269.6	276.8	281.2	296.6	306.2	312.1	309.9
Utility (piped) gas	380.2	399.4	416.5	416.9	418.6	416.2	431.7	376.1	397.2	413.0	413.2	415.8	411.2	428.5

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
HOUSING Continued														
Fuel and other utilities Continued														
Other utilities and public services	167.1	175.1	176.2	177.1	180.8	183.7	187.4	167.1	175.4	176.6	177.3	181.3	184.3	187.8
Telephone services	137.0	143.4	144.0	143.5	147.2	149.2	152.5	136.9	143.4	144.1	143.6	147.5	149.5	152.7
Local charges (12/77 = 100)	106.0	114.8	115.5	114.9	116.7	117.3	120.5	105.9	114.9	115.7	115.1	116.9	117.6	120.7
Interstate toll calls (12/77 = 100)	102.1	101.8	101.8	101.8	109.1	113.4	114.9	102.1	101.9	101.9	101.9	109.6	113.8	115.1
Intrastate toll calls (12/77 = 100)	100.1	101.4	101.7	101.5	101.5	101.8	103.9	100.0	101.2	101.5	101.3	101.3	101.6	103.7
Water and sewerage maintenance	264.5	278.4	282.3	291.2	294.0	299.2	304.1	265.5	280.3	284.7	292.5	295.8	301.4	306.0
Household furnishings and operations	209.2	219.2	220.1	221.1	222.4	222.9	224.5	206.0	215.9	216.8	217.8	219.1	219.8	221.2
Housefurnishings	177.3	183.9	184.2	185.2	186.0	186.2	187.9	175.0	181.6	182.1	182.8	184.1	184.5	185.7
Textile housefurnishings	194.1	200.5	198.3	202.5	202.9	203.4	207.7	192.5	202.9	202.3	204.4	206.2	207.3	213.0
Household linens (12/77 = 100)	118.4	123.0	122.3	125.1	123.3	124.6	127.7	117.7	125.0	124.7	125.7	126.0	126.8	129.7
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100)	123.6	127.1	125.0	127.4	129.8	129.1	131.4	122.7	128.2	127.7	129.5	131.5	132.1	136.3
Furniture and bedding	195.7	203.7	204.2	204.6	206.0	205.4	207.7	192.0	200.0	200.6	200.1	202.3	201.4	202.7
Bedroom furniture (12/77 = 100)	127.9	134.5	133.4	134.6	135.0	135.9	137.6	124.5	130.7	129.2	129.2	130.7	132.2	132.9
Sofas (12/77 = 100)	112.7	116.5	117.0	116.2	117.6	116.0	118.6	111.1	114.9	115.8	116.0	116.2	115.0	117.4
Living room chairs and tables (12/77 = 100)	114.1	116.6	117.5	116.9	117.9	116.7	116.8	115.1	117.6	119.1	118.2	119.5	116.9	117.2
Other furniture (12/77 = 100)	127.5	133.4	134.7	135.4	136.2	135.9	137.3	123.6	130.1	131.2	130.5	132.9	132.2	132.3
Appliances including TV and sound equipment	142.0	145.3	145.5	146.3	147.1	147.3	147.7	141.2	144.2	144.4	145.6	146.3	146.6	146.7
Television and sound equipment (12/77 = 100)	107.0	108.6	108.3	108.2	108.8	108.6	108.7	105.7	107.1	106.9	107.3	107.7	107.8	107.8
Television	105.0	106.0	105.4	105.3	105.6	105.0	104.6	103.2	104.7	104.4	104.3	104.5	104.2	103.6
Sound equipment (12/77 = 100)	109.8	112.1	112.1	111.9	112.7	112.8	113.4	108.8	110.2	110.1	110.9	111.4	111.9	112.4
Household appliances	165.5	170.4	171.3	173.2	174.2	174.9	175.7	165.2	169.9	170.6	172.6	173.6	174.1	174.4
Refrigerators and home freezers	164.8	170.6	170.9	172.4	174.2	175.8	177.5	169.1	174.7	175.8	177.1	178.1	178.9	180.6
Laundry equipment (12/77 = 100)	120.9	126.1	126.2	128.0	128.1	129.2	129.7	120.0	125.7	125.3	127.1	128.3	129.1	128.8
Other household appliances (12/77 = 100)	114.2	116.6	117.6	118.9	119.6	119.5	119.7	112.5	114.4	115.2	116.6	117.1	117.0	117.1
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100)	111.8	115.8	117.2	118.4	119.2	118.5	118.8	111.8	113.9	115.1	116.5	117.1	116.4	116.0
Office machines, small electric appliances, and air conditioners (12/77 = 100)	117.0	117.4	118.0	119.4	120.1	120.6	120.8	113.4	115.0	115.3	116.7	117.1	117.7	118.3
Other household equipment (12/77 = 100)	123.0	130.0	130.7	131.0	131.2	131.7	133.1	121.6	127.9	129.0	129.3	129.8	131.0	131.6
Floor and window coverings, infants', laundry, cleaning, and outdoor equipment (12/77 = 100)	123.0	131.4	132.2	132.1	132.4	133.4	134.8	116.8	124.4	125.1	125.3	127.1	129.3	129.6
Clocks, lamps, and decor items (12/77 = 100)	120.6	125.6	124.4	124.6	125.0	125.8	128.2	118.2	120.9	120.9	121.9	122.9	122.5	123.8
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100)	128.2	137.1	138.8	139.5	139.5	138.9	140.4	126.3	134.1	136.0	136.0	136.4	137.0	137.8
Lawn equipment, power tools, and other hardware (12/77 = 100)	117.2	121.5	122.5	122.6	122.7	124.0	124.5	120.3	125.9	127.0	127.1	126.7	128.8	129.2
Housekeeping supplies	252.0	266.9	269.0	269.8	271.5	272.0	273.3	249.6	263.4	265.5	266.9	267.9	268.6	270.4
Soaps and detergents	243.7	259.4	262.6	266.0	266.5	267.0	268.9	241.1	256.7	260.2	263.6	263.1	263.6	265.6
Other laundry and cleaning products (12/77 = 100)	125.6	131.0	132.8	133.4	134.8	134.8	135.7	125.0	130.4	131.5	132.3	133.6	134.7	135.8
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100)	133.8	138.4	137.8	137.6	138.8	138.4	139.9	135.8	138.5	137.9	138.2	139.0	138.7	140.4
Stationery, stationery supplies, and gift wrap (12/77 = 100)	118.0	123.1	125.1	125.8	126.6	126.6	127.2	116.9	124.8	126.8	127.2	127.9	128.2	128.7
Miscellaneous household products (12/77 = 100)	129.0	138.1	138.4	139.5	140.5	141.7	142.8	126.6	134.5	135.0	136.1	136.6	136.9	138.1
Lawn and garden supplies (12/77 = 100)	127.1	139.1	140.6	138.4	138.8	139.2	137.8	120.5	131.1	132.4	131.3	131.7	131.8	131.1
Housekeeping services	273.3	289.9	291.6	292.9	295.3	296.9	298.3	270.2	288.6	289.9	291.7	293.4	295.1	296.9
Postage	257.3	308.0	308.0	308.0	308.0	308.0	308.0	257.3	308.1	308.1	308.1	308.1	308.1	308.1
Moving, storage, freight, household laundry, and drycleaning services (12/77 = 100)	132.8	140.7	141.6	141.9	143.1	143.9	144.7	130.3	140.2	140.7	141.8	142.8	143.8	144.9
Appliance and furniture repair (12/77 = 100)	119.8	125.2	125.9	126.3	127.8	128.5	129.0	118.7	124.3	124.6	125.4	126.4	127.2	128.3
APPAREL AND UPKEEP	182.2	186.4	186.4	185.8	184.7	187.4	190.7	181.4	186.0	186.2	185.8	185.5	187.9	190.5
Apparel commodities	174.9	177.6	177.2	176.4	175.1	178.0	181.4	174.4	177.5	177.6	177.0	176.6	179.0	181.6
Apparel commodities less footwear	171.8	174.0	173.3	172.5	171.2	174.3	178.0	171.1	173.9	173.8	173.0	172.8	175.2	178.1
Men's and boys'	171.7	175.6	176.8	176.6	175.6	177.6	181.1	171.6	176.1	177.3	177.2	176.9	178.4	181.4
Men's (12/77 = 100)	108.1	110.5	111.2	111.0	110.3	111.7	114.3	108.3	110.9	111.8	111.6	111.6	112.8	115.0
Suits, sport coats, and jackets (12/77 = 100)	103.2	104.1	104.7	104.3	102.5	105.6	108.8	98.3	98.3	99.3	98.4	97.4	99.7	102.1
Coats and jackets (12/77 = 100)	99.9	98.1	97.9	98.1	96.7	97.7	101.0	100.0	99.6	100.5	101.2	100.8	102.4	106.1
Furnishings and special clothing (12/77 = 100)	120.8	127.5	129.2	129.7	129.6	129.5	132.7	117.5	122.7	123.9	124.1	124.8	125.3	128.5
Shirts (12/77 = 100)	116.9	117.0	118.3	117.9	115.5	117.9	120.6	117.4	119.5	120.3	120.4	118.8	122.1	123.9
Dungarees, jeans, and trousers (12/77 = 100)	101.2	105.4	105.5	105.0	106.5	106.6	107.8	107.1	111.5	112.2	111.8	113.2	112.5	113.5
Boys' (12/77 = 100)	111.4	114.5	115.1	115.4	115.1	115.8	116.4	110.2	113.9	114.2	114.3	113.6	113.8	114.8
Coats, jackets, sweaters, and shirts (12/77 = 100)	108.1	107.2	108.8	108.7	107.0	109.2	111.3	109.6	110.9	111.8	109.8	107.6	109.5	112.3
Furnishings (12/77 = 100)	116.6	121.5	121.4	123.9	124.5	124.3	125.0	113.7	118.2	117.4	119.5	120.6	120.3	120.9
Suits, trousers, sport coats, and jackets (12/77 = 100)	111.9	117.4	117.5	117.3	117.7	117.5	117.0	109.4	114.8	114.8	115.9	115.6	114.7	114.4
Women's and girls'	159.0	158.8	157.2	155.4	153.5	157.8	162.9	159.8	160.7	160.0	158.1	157.9	161.2	164.9
Women's (12/77 = 100)	105.7	105.0	103.9	102.7	101.2	104.4	108.1	107.0	106.7	106.2	104.9	104.5	107.1	109.8
Coats and jackets	168.9	157.6	152.8	149.5	153.9	162.1	170.8	156.8	156.8	155.8	148.9	159.0	168.7	177.8
Dresses	168.5	167.8	164.8	163.7	162.2	166.2	170.8	104.6	159.8	159.7	156.6	154.1	153.4	155.5
Separates and sportswear (12/77 = 100)	102.2	100.2	99.0	98.0	95.1	97.4	101.1	114.8	102.6	101.5	101.0	99.1	101.1	103.3
Underwear, nightwear, and hosiery (12/77 = 100)	114.6	119.3	119.7	119.8	120.0	121.2	122.8	105.7	119.1	119.5	120.0	120.1	121.0	122.7
Suits (12/77 = 100)	95.4	91.6	90.7	86.3	78.6	87.0	95.4	103.3	108.0	106.9	103.6	100.6	109.8	115.0
Girls' (12/77 = 100)	105.8	108.6	107.9	106.4	106.5	107.9	109.7	97.3	107.8	107.1	106.2	106.9	107.6	108.8
Coats, jackets, dresses, and suits (12/77 = 100)	102.1	106.4	104.1	100.4	100.0	101.6	103.3	104.2	101.3	98.8	98.1	98.9	101.5	103.3
Separates and sportswear (12/77 = 100)	105.3	106.8	106.9	105.9	106.1	108.7	111.0	111.3	109.5	109.6	108.1	108.9	108.9	110.0
Underwear, nightwear, hosiery, and accessories (12/77 = 100)	113.0	115.5	116.1	117.2	117.6	117.0	117.9	248.3	115.4	115.9	116.2	116.3	115.1	115.5

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	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														
Infants' and toddlers'	242.4	259.2	256.9	260.0	259.8	263.6	266.4	248.3	269.3	269.9	273.0	272.9	279.3	279.8
Other apparel commodities	210.5	214.1	212.1	212.2	212.4	214.0	213.3	204.4	205.6	204.1	204.8	204.8	206.1	206.0
Sewing materials and notions (12/77 = 100)	110.9	114.8	114.3	114.5	115.3	117.5	118.3	110.7	114.3	113.4	113.2	113.6	115.3	116.4
Jewelry and luggage (12/77 = 100)	146.8	148.4	146.8	146.8	146.6	147.2	146.2	142.0	141.4	140.5	141.2	141.0	141.4	140.9
Footwear	193.2	199.3	201.0	200.4	199.0	200.0	202.4	193.3	198.4	200.0	200.6	199.2	200.8	202.3
Men's (12/77 = 100)	123.6	126.8	127.8	127.7	128.0	128.3	128.8	124.9	128.0	128.7	129.5	129.5	129.8	129.7
Boys' and girls' (12/77 = 100)	123.3	128.2	129.3	129.1	130.1	129.1	129.7	124.6	126.7	127.7	128.6	128.7	130.4	130.7
Women's (12/77 = 100)	117.7	121.3	122.4	121.6	118.7	120.6	123.5	115.1	119.3	120.5	120.2	117.8	118.9	121.2
Apparel services	237.3	254.3	256.4	257.8	258.9	260.2	262.0	234.5	252.7	254.2	255.7	256.3	258.2	260.0
Laundry and drycleaning other than coin operated (12/77 = 100)	140.0	150.9	152.2	153.2	153.8	154.7	155.7	139.1	150.4	151.5	152.5	153.1	153.9	155.0
Other apparel services (12/77 = 100)	126.9	134.5	135.6	136.0	136.7	137.2	138.2	125.1	134.0	134.5	135.0	135.1	136.5	137.4
TRANSPORTATION	254.7	275.3	277.8	279.9	282.6	283.7	285.2	255.2	276.3	278.9	281.0	283.9	285.1	286.6
Private	253.2	273.4	276.0	277.9	279.6	280.5	281.9	254.1	275.1	277.7	279.7	281.6	282.6	284.1
New cars	181.7	186.1	190.9	192.2	192.5	191.9	191.3	182.3	186.2	191.2	192.5	192.9	192.1	191.4
Used cars	214.6	239.1	245.2	252.9	260.3	266.9	272.8	214.6	239.1	245.2	252.9	260.3	266.9	272.8
Gasoline	373.0	419.3	416.5	414.4	412.9	411.7	411.2	373.9	420.8	417.7	415.6	414.0	412.9	412.4
Automobile maintenance and repair	273.8	289.0	290.8	291.9	293.5	295.5	298.7	273.9	289.7	291.3	292.6	293.4	296.1	299.3
Body work (12/77 = 100)	133.8	140.8	141.5	142.3	144.1	145.8	147.4	133.0	140.7	141.3	142.2	143.3	145.4	146.1
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100)	130.9	138.0	138.7	138.9	139.9	140.9	143.1	131.8	140.5	141.2	141.7	141.4	142.6	145.5
Maintenance and servicing (12/77 = 100)	129.4	135.5	136.5	137.1	137.4	137.8	138.9	129.5	135.7	136.4	136.9	137.3	138.2	139.2
Power plant repair (12/77 = 100)	128.7	137.8	138.6	139.2	139.9	141.2	142.6	128.5	136.7	137.7	138.3	139.1	140.5	141.9
Other private transportation	226.0	236.3	238.9	241.0	242.9	243.0	244.2	227.6	239.2	241.9	243.9	246.0	245.6	246.9
Other private transportation commodities	200.9	208.1	208.6	208.5	208.8	212.1	212.6	201.9	210.4	211.7	211.1	210.8	213.4	215.5
Motor oil, coolant, and other products (12/77 = 100)	137.5	143.5	143.1	144.5	144.8	146.8	147.7	135.6	140.5	141.4	142.7	143.4	144.1	145.3
Automobile parts and equipment (12/77 = 100)	128.8	133.2	133.6	133.4	133.6	135.7	136.0	129.8	135.4	136.1	135.5	135.2	137.0	138.4
Tires	178.8	185.8	186.4	186.1	185.6	189.3	189.7	181.5	189.6	191.1	189.9	188.4	191.5	194.1
Other parts and equipment (12/77 = 100)	127.3	130.1	130.4	130.2	131.7	132.4	132.8	125.8	130.8	130.7	130.7	132.2	132.9	133.2
Other private transportation services	234.9	246.2	249.4	252.0	254.3	253.6	255.0	236.7	249.2	252.4	255.0	257.7	256.6	257.7
Automobile insurance	251.3	255.7	256.8	257.4	259.8	260.3	262.0	250.9	255.2	256.3	256.9	259.6	260.1	261.8
Automobile finance charges (12/77 = 100)	148.6	166.5	172.9	178.5	180.9	177.3	178.0	147.5	166.3	172.5	177.2	179.9	176.3	176.5
Automobile rental, registration, and other fees (12/77 = 100)	114.5	118.2	117.7	117.8	118.0	119.5	120.1	115.8	119.3	118.1	118.2	118.4	119.5	119.8
State registration	146.5	146.9	147.5	148.0	147.9	147.9	147.9	146.5	147.0	147.7	148.1	147.9	148.0	148.0
Drivers' licenses (12/77 = 100)	104.9	105.5	105.5	105.8	105.9	106.2	109.6	104.6	105.2	105.2	105.6	105.6	105.9	109.5
Vehicle inspection (12/77 = 100)	122.8	126.0	125.8	125.7	128.6	(1)	(1)	123.5	126.6	126.5	126.5	129.3	(1)	(1)
Other vehicle-related fees (12/77 = 100)	129.8	138.4	136.3	136.3	136.6	140.0	140.9	137.8	147.1	142.8	142.6	143.1	145.8	145.9
Public	271.0	297.2	297.7	303.9	323.1	326.5	329.1	264.4	287.7	288.2	293.6	317.7	320.9	324.5
Airline fare	310.3	348.6	348.8	360.7	367.3	371.4	372.5	308.6	346.6	346.7	359.3	365.6	370.0	371.8
Intercity bus fare	304.7	329.1	333.4	337.6	343.5	347.5	351.4	304.5	329.2	333.0	336.8	343.6	347.3	351.7
Intracity mass transit	234.8	251.7	251.9	253.5	290.7	294.0	298.6	234.4	249.8	249.9	251.5	291.0	293.9	299.2
Taxi fare	266.8	279.9	280.4	281.7	287.1	288.1	288.6	273.6	287.4	287.9	289.2	295.7	296.7	297.1
Intercity train fare	255.5	277.2	296.7	304.1	304.6	304.6	305.0	255.6	277.5	298.5	304.6	304.9	305.0	305.2
MEDICAL CARE	270.6	287.0	289.0	291.5	295.6	299.3	301.7	272.2	289.1	290.8	292.9	295.4	298.6	300.9
Medical care commodities	171.3	182.4	184.7	186.3	187.7	189.4	190.8	171.8	183.4	185.9	187.3	189.2	190.6	191.9
Prescription drugs	157.5	168.5	170.4	172.3	173.7	175.4	176.5	158.5	169.2	171.6	173.5	175.0	176.5	178.0
Anti-infective drugs (12/77 = 100)	122.4	130.2	130.3	132.2	133.9	134.8	136.5	123.4	132.4	132.7	134.3	135.8	137.0	139.2
Tranquilizers and sedatives (12/77 = 100)	126.3	134.4	136.0	137.3	138.4	139.6	140.0	125.4	133.3	135.2	136.5	137.6	138.8	139.7
Circulatories and diuretics (12/77 = 100)	116.9	123.9	124.9	125.5	126.5	127.6	127.8	118.9	125.3	126.1	126.8	127.9	128.6	129.0
Hormones, diabetic drugs, biologicals, and prescription medical supplies (12/77 = 100)	138.9	151.2	154.6	157.2	158.1	160.4	160.6	138.1	150.9	154.5	158.1	158.2	160.3	161.4
Pain and symptom control drugs (12/77 = 100)	125.6	134.5	136.5	137.7	139.1	140.2	141.7	128.1	135.8	138.2	138.9	141.8	142.7	143.8
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100)	120.5	128.6	130.2	131.1	131.8	133.1	134.1	121.8	128.8	131.2	132.0	132.5	133.9	134.6
Nonprescription drugs and medical supplies (12/77 = 100)	123.3	130.9	132.6	133.5	134.5	135.6	136.7	123.6	131.9	133.6	134.4	135.8	136.7	137.4
Eyeglasses (12/77 = 100)	120.5	125.1	125.3	125.3	125.8	126.3	126.9	119.0	123.4	124.1	124.7	125.0	125.3	126.0
Internal and respiratory over-the-counter drugs	191.2	205.9	209.1	211.5	213.1	215.5	217.8	192.4	208.0	211.0	212.6	215.4	217.5	218.9
Nonprescription medical equipment and supplies (12/77 = 100)	120.8	126.2	128.6	128.6	129.9	130.4	131.4	121.2	128.2	130.5	130.7	132.2	132.3	132.6
Medical care services	292.3	309.8	311.7	314.4	319.2	323.4	326.1	294.3	312.2	313.6	315.8	318.5	322.1	324.7
Professional services	257.3	271.7	273.8	275.8	280.4	282.9	284.3	260.4	276.2	278.0	279.4	280.8	282.7	284.5
Physicians' services	274.2	292.2	295.5	297.5	300.7	302.7	304.9	280.5	297.9	300.3	302.4	304.7	306.7	308.6
Dental services	245.8	257.1	257.7	260.2	266.5	269.9	270.8	247.3	262.2	263.3	264.0	264.6	266.6	268.4
Other professional services (12/77 = 100)	126.7	132.6	133.7	134.2	136.8	137.3	137.7	124.5	131.3	132.1	132.6	132.7	133.6	134.3
Other medical care services	334.7	355.9	357.6	361.1	366.1	372.5	376.5	335.6	356.2	357.1	360.3	364.6	370.6	374.1
Hospital and other medical services (12/77 = 100)	137.1	148.1	148.3	149.6	151.7	154.7	156.6	136.4	147.3	147.3	148.6	150.3	153.1	154.8
Hospital room	428.4	465.0	465.1	470.4	478.0	489.4	494.6	427.2	461.4	461.3	467.1	472.2	482.6	488.5
Other hospital and medical care services (12/77 = 100)	137.0	147.3	147.6	148.7	150.4	152.9	155.0	136.0	146.8	146.8	147.6	149.4	151.8	153.4

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
ENTERTAINMENT	209.8	219.2	220.3	220.8	221.1	222.3	224.0	208.1	217.0	217.7	218.3	218.7	219.9	221.5
Entertainment commodities	212.8	223.6	225.0	225.4	225.5	226.5	227.9	208.6	219.4	220.4	220.8	221.1	222.2	224.0
Reading materials (12/77 = 100)	126.1	134.1	135.6	136.2	136.0	136.0	138.1	125.5	134.1	135.6	136.1	135.9	135.9	137.8
Newspapers	242.3	262.5	264.1	264.9	265.0	265.5	266.3	241.5	262.5	264.0	264.8	265.0	265.4	266.2
Magazines, periodicals, and books (12/77 = 100)	129.3	134.8	137.1	137.9	137.3	137.2	141.1	129.3	134.8	137.3	138.2	137.4	137.1	141.2
Sporting goods and equipment (12/77 = 100)	121.1	127.5	127.2	126.8	127.0	127.2	127.3	115.8	120.9	120.8	120.4	120.6	120.8	121.3
Sport vehicles (12/77 = 100)	122.2	130.4	129.5	128.7	129.0	128.6	128.4	113.9	120.0	119.3	118.4	118.5	118.3	118.7
Indoor and warm weather sport equipment (12/77 = 100)	113.8	116.7	117.4	116.9	117.7	118.2	119.1	112.1	115.4	116.4	116.9	117.0	116.7	117.2
Bicycles	184.7	188.3	190.4	191.0	191.0	192.2	193.2	184.9	189.7	191.6	192.0	192.1	193.5	193.9
Other sporting goods and equipment (12/77 = 100)	117.2	122.6	122.4	122.7	122.7	124.1	125.0	117.4	121.1	121.5	122.2	122.9	124.9	125.8
Toys, hobbies, and other entertainment (12/77 = 100)	122.6	127.8	128.8	129.3	129.3	130.5	131.0	121.3	127.2	127.7	128.1	128.5	129.6	130.6
Toys, hobbies, and music equipment (12/77 = 100)	121.4	126.2	127.6	127.9	127.9	129.3	129.4	119.0	124.0	125.0	125.3	125.3	126.6	127.1
Photographic supplies and equipment (12/77 = 100)	123.1	125.4	125.8	126.2	125.7	126.0	126.4	121.8	126.7	126.1	126.5	127.0	127.1	127.7
Pet supplies and expenses (12/77 = 100)	124.4	132.4	133.3	134.2	134.5	136.2	137.2	125.2	133.2	133.6	134.3	135.1	136.6	138.8
Entertainment services	206.1	213.4	214.0	214.7	215.2	216.7	218.9	208.4	213.9	214.2	215.1	215.8	217.0	218.3
Fees for participant sports (12/77 = 100)	124.5	130.7	130.7	131.3	131.6	132.0	134.3	124.7	130.2	130.5	131.4	131.6	132.4	134.0
Admissions (12/77 = 100)	122.6	124.5	125.1	124.9	125.9	128.1	128.0	124.1	124.7	125.0	124.8	125.7	126.9	127.3
Other entertainment services (12/77 = 100)	118.3	121.1	121.7	122.2	121.7	121.7	122.5	120.8	122.4	122.5	123.4	123.2	123.1	122.7
OTHER GOODS AND SERVICES	220.6	229.9	232.2	233.4	234.4	235.6	243.0	219.0	227.9	230.4	231.4	232.4	233.5	239.3
Tobacco products	204.5	213.3	218.2	219.1	219.3	219.9	221.7	204.3	213.2	217.8	218.4	218.4	219.1	220.9
Cigarettes	206.8	215.5	220.8	221.4	221.6	222.2	224.2	206.8	215.5	220.3	220.8	220.7	221.4	223.4
Other tobacco products and smoking accessories (12/77 = 100)	122.8	129.6	130.4	132.3	132.5	132.9	133.1	122.7	130.0	131.3	132.7	133.4	133.9	134.4
Personal care	216.7	228.7	230.5	232.1	233.4	235.1	236.3	216.6	226.4	228.4	229.7	231.2	232.4	233.6
Toilet goods and personal care appliances	210.3	223.9	226.6	228.6	228.7	230.1	231.2	210.4	222.5	225.5	227.2	228.4	229.4	231.1
Products for the hair, hairpieces, and wigs (12/77 = 100)	121.8	131.9	132.4	132.8	133.9	134.1	134.1	123.6	128.8	130.1	130.4	131.7	132.5	133.3
Dental and shaving products (12/77 = 100)	125.3	136.6	138.6	139.4	139.0	140.0	140.0	124.0	135.1	136.1	136.6	137.1	137.6	138.0
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100)	121.3	125.3	127.8	129.0	127.7	128.9	130.7	119.7	124.4	126.2	128.0	128.3	128.9	130.4
Other toilet goods and small personal care appliances (12/77 = 100)	120.8	128.4	129.8	132.0	133.0	133.9	134.2	122.1	131.3	134.0	135.4	135.9	136.4	137.4
Personal care services	223.1	233.7	234.7	236.0	238.4	240.3	241.5	222.9	230.5	231.5	232.5	234.4	235.7	236.3
Beauty parlor services for women	224.5	236.0	236.4	237.7	240.5	241.9	243.0	225.0	231.7	232.0	232.7	235.1	235.7	236.1
Haircuts and other barber shop services for men (12/77 = 100)	124.8	129.9	131.1	131.9	132.7	134.4	135.3	123.9	129.1	130.5	131.3	131.8	133.3	133.9
Personal and educational expenses	249.5	256.2	256.8	257.8	259.2	260.4	281.5	249.8	257.1	257.7	258.5	260.1	261.7	281.8
Schoolbooks and supplies	221.0	230.8	230.8	230.9	231.3	231.4	252.1	224.8	234.6	234.7	234.7	235.2	235.2	255.9
Personal and educational services	256.2	262.4	263.0	264.2	265.8	267.2	288.5	256.1	262.9	263.6	264.6	266.4	268.4	288.5
Tuition and other school fees	131.6	132.8	132.8	132.9	133.5	134.2	147.4	131.8	133.0	133.0	133.1	133.7	134.7	147.7
College tuition (12/77 = 100)	130.7	132.3	132.3	132.4	133.0	133.2	146.3	130.7	132.3	132.3	132.4	132.9	133.1	146.1
Elementary and high school tuition (12/77 = 100)	134.4	134.4	134.4	134.4	135.3	137.8	151.5	134.3	134.4	134.4	134.4	135.4	138.7	152.1
Personal expenses (12/77 = 100)	130.5	141.8	143.6	146.3	147.9	148.7	150.0	129.7	141.1	142.8	144.8	146.6	147.6	148.5
Special indexes:														
Gasoline, motor oil, coolant, and other products	367.9	413.2	410.4	408.4	407.1	405.9	405.4	368.7	414.5	411.5	409.5	408.0	406.9	406.5
Insurance and finance	338.6	378.1	386.6	393.4	402.7	408.1	417.6	339.0	377.6	386.1	393.1	402.4	407.3	416.4
Utilities and public transportation	254.8	267.9	272.4	278.5	286.5	289.7	293.3	253.6	266.1	270.6	276.7	285.6	288.5	292.4
Housekeeping and home maintenance services	303.6	323.1	326.2	328.6	332.3	334.0	335.7	302.3	321.1	323.8	325.1	322.8	333.0	335.5

[1] Not available.

24. 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)		
	1981			1981			1981			1981		
	Apr.	June	Aug.	Apr.	June	Aug.	Apr.	June	Aug.	Apr.	June	Aug.
	Northeast											
EXPENDITURE CATEGORY												
All items	137.3	139.1	142.1	144.4	146.8	150.5	149.8	152.5	155.3	143.4	146.3	147.7
Food and beverages	136.8	137.5	139.4	138.3	139.2	139.9	141.4	141.1	142.3	135.2	136.1	137.6
Housing	139.1	142.1	146.2	149.1	153.2	160.4	161.5	166.0	170.4	149.7	154.0	155.2
Apparel and upkeep	116.9	116.2	117.6	118.2	118.9	118.3	121.7	123.1	123.5	123.3	122.9	125.7
Transportation	149.7	151.5	154.5	157.3	159.1	161.3	154.9	158.4	160.5	153.0	156.6	158.3
Medical care	132.9	134.8	137.6	132.9	134.0	139.2	133.8	137.8	140.8	135.9	137.2	138.9
Entertainment	126.3	127.9	129.3	130.2	129.6	129.1	125.8	125.9	127.8	128.5	130.2	131.7
Other goods and services	124.5	125.9	127.2	130.4	132.1	132.2	132.6	134.1	135.8	127.1	128.8	129.5
COMMODITY AND SERVICE GROUP												
Commodities	137.9	139.0	141.0	145.0	146.5	148.6	147.1	148.1	149.1	143.3	145.0	146.0
Commodities less food and beverages	138.7	139.9	142.0	148.3	150.0	152.7	149.7	151.4	152.3	147.1	149.3	150.0
Services	136.4	139.4	143.5	143.4	147.2	153.6	154.1	159.7	165.4	143.6	148.3	150.5
	North Central region											
EXPENDITURE CATEGORY												
All items	145.9	150.0	152.3	143.5	146.6	148.1	140.2	142.3	145.4	141.1	143.1	145.3
Food and beverages	137.5	138.1	139.4	136.6	137.5	139.2	137.8	139.6	140.8	140.5	140.7	142.4
Housing	155.0	162.9	165.9	147.4	152.6	154.7	140.5	143.5	148.5	142.1	144.0	147.0
Apparel and upkeep	112.3	110.8	112.9	119.8	118.9	120.2	116.4	115.3	116.9	115.6	118.6	121.6
Transportation	153.9	156.4	158.9	154.3	157.3	158.4	155.1	157.0	159.3	152.6	155.9	157.6
Medical care	137.1	139.1	141.3	138.1	139.9	144.5	138.6	140.4	143.9	142.1	144.0	146.9
Entertainment	130.2	130.6	130.9	125.3	124.4	188.4	129.2	129.8	129.8	125.7	126.9	128.1
Other goods and services	127.9	130.1	131.2	134.0	136.0	136.5	127.9	129.3	131.5	131.7	134.3	133.6
COMMODITY AND SERVICE GROUP												
Commodities	141.7	144.4	145.7	140.1	142.5	142.9	138.6	139.9	141.7	136.9	138.0	139.4
Commodities less food and beverages	143.7	147.4	148.7	141.5	144.6	144.5	139.0	140.0	142.1	135.4	136.8	138.1
Services	152.1	158.3	162.1	149.0	153.2	156.4	142.7	146.2	151.6	147.8	151.1	154.8
	South											
EXPENDITURE CATEGORY												
All items	144.1	146.2	148.2	146.7	148.7	151.6	143.7	145.9	148.5	141.8	144.8	147.2
Food and beverages	139.0	138.2	140.2	139.8	139.4	141.7	139.0	138.7	141.6	142.3	141.9	143.9
Housing	148.7	152.3	154.9	153.0	156.4	160.5	148.3	151.9	155.3	142.4	147.5	150.9
Apparel and upkeep	121.1	121.1	121.9	121.3	119.9	120.6	115.5	115.3	115.1	109.4	109.5	108.6
Transportation	155.7	158.1	158.9	155.9	158.3	160.3	153.8	156.6	158.6	154.3	157.7	159.1
Medical care	132.5	135.0	138.3	136.5	138.8	141.6	140.0	142.1	145.6	146.4	148.1	149.9
Entertainment	123.2	124.9	125.3	130.0	130.7	132.2	130.5	132.1	132.1	131.2	133.5	138.6
Other goods and services	131.3	133.1	135.3	132.0	134.1	134.6	129.7	131.5	132.7	131.6	134.1	134.8
COMMODITY AND SERVICE GROUP												
Commodities	141.5	142.1	143.5	142.3	143.2	144.7	140.1	141.3	143.1	140.7	142.1	143.2
Commodities less food and beverages	142.6	143.8	144.9	143.4	144.8	146.0	140.6	142.4	143.8	140.0	142.2	143.0
Services	147.6	152.1	154.9	153.3	157.0	161.9	149.2	153.1	156.9	143.6	149.0	153.1
	West											
EXPENDITURE CATEGORY												
All items	145.7	147.5	152.4	146.7	149.1	151.2	142.1	143.9	146.4	143.6	146.9	147.7
Food and beverages	138.2	138.3	140.3	141.4	142.6	144.6	136.2	137.5	141.2	141.3	143.2	145.2
Housing	151.2	153.2	160.6	151.8	155.1	156.6	144.8	146.7	148.9	142.0	146.1	145.6
Apparel and upkeep	119.9	120.7	121.2	125.2	123.1	124.5	114.9	113.4	114.6	133.7	133.5	134.4
Transportation	154.2	157.4	159.3	154.9	157.5	161.1	155.6	158.7	160.8	156.0	159.3	161.0
Medical care	139.5	141.0	149.2	137.5	141.2	146.1	139.0	141.5	147.0	140.8	146.2	149.9
Entertainment	127.0	127.7	130.2	128.9	128.9	130.1	128.9	130.8	130.8	142.1	143.7	145.4
Other goods and services	131.8	134.8	136.4	133.3	134.7	137.3	128.6	130.2	131.3	133.0	137.8	141.0
COMMODITY AND SERVICE GROUP												
Commodities	139.5	140.5	143.4	142.2	143.4	145.2	139.1	140.2	142.6	141.6	144.7	144.5
Commodities less food and beverages	140.1	141.4	144.7	142.6	143.8	145.5	140.2	141.3	143.2	141.6	145.3	144.2
Services	154.0	156.8	164.3	152.9	156.8	159.4	146.4	149.2	151.7	146.5	150.1	152.5

25. 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)						
	1980	1981						1980	1981					
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
U.S. city average[2]	251.7	266.8	269.0	271.3	274.4	276.5	279.3	251.9	266.8	269.1	271.4	274.6	276.5	279.1
Anchorage, Alaska (10/67 = 100)	230.9	...	244.6	...	246.1	...	250.5	226.7	...	240.1	...	241.7	...	245.9
Atlanta, Ga.	...	265.9	...	269.2	...	276.1	...	...	268.8	...	272.8	...	278.1	...
Baltimore, Md.	255.0	...	269.3	...	272.5	...	279.9	253.2	...	268.6	...	273.7	...	281.6
Boston, Mass.	244.4	...	263.6	...	266.3	...	272.8	244.5	...	263.6	...	266.5	...	273.6
Buffalo, N.Y.	...	254.6	...	257.2	...	260.3	...	...	252.7	...	256.1	...	259.4	...
Chicago, Ill.-Northwestern Ind.	250.1	263.7	264.5	269.1	272.7	275.8	276.9	249.5	263.0	263.9	267.9	271.7	274.6	275.8
Cincinnati, Ohio-Ky.-Ind.	259.9	...	271.7	...	273.3	...	275.2	261.7	...	273.3	...	276.3	...	277.1
Cleveland, Ohio	...	272.0	...	285.3	...	284.4	...	...	272.1	...	283.8	...	283.0	...
Dallas-Ft. Worth, Tex.	...	279.6	...	286.0	...	288.2	...	...	276.9	...	284.0	...	285.1	...
Denver-Boulder, Colo.	267.3	...	288.2	...	294.2	...	298.9	271.6	...	293.4	...	299.9	...	304.2
Detroit, Mich.	259.5	272.4	275.2	280.5	283.1	283.5	284.2	257.7	268.0	271.3	275.9	278.9	279.1	280.2
Honolulu, Hawaii	...	250.0	...	252.8	...	256.6	...	...	250.2	...	253.8	...	256.6	...
Houston, Tex.	...	286.4	...	292.9	...	294.7	...	...	283.1	...	289.4	...	291.8	...
Kansas City, Mo.-Kansas	...	265.4	...	270.5	...	271.3	...	...	264.3	...	269.1	...	270.2	...
Los Angeles-Long Beach, Anaheim, Calif.	249.6	265.5	267.3	267.9	272.2	274.8	279.3	252.0	269.1	270.7	271.7	276.3	278.6	282.9
Miami, Fla. (11/77 = 100)	133.1	...	143.2	...	146.1	...	150.2	134.9	...	144.8	...	143.7	...	151.0
Milwaukee, Wis.	258.4	...	278.5	...	285.6	...	286.9	263.2	...	283.5	...	291.2	...	292.1
Minneapolis-St. Paul, Minn.-Wis.	...	266.5	...	276.1	...	286.6	...	...	267.3	...	276.6	...	287.0	...
New York, N.Y.-Northeastern N.J.	241.8	255.4	256.7	258.6	262.5	264.8	268.8	241.5	254.8	255.9	257.9	262.3	264.0	267.8
Northeast, Pa. (Scranton)	243.1	...	259.9	...	266.0	...	271.5	246.9	...	263.3	...	269.0	...	275.0
Philadelphia, Pa.-N.J.	247.2	261.0	261.9	265.4	267.8	270.5	274.4	248.3	261.5	262.9	265.6	268.5	271.6	274.5
Pittsburgh, Pa.	...	265.7	...	271.3	...	277.7	...	...	267.3	...	273.0	...	278.1	...
Portland, Oreg.-Wash.	256.9	...	278.5	...	280.8	...	291.1	255.4	...	276.1	...	279.2	...	288.8
St. Louis, Mo.-Ill.	252.4	...	268.0	...	269.4	...	273.4	252.7	...	268.4	...	269.2	...	273.0
San Diego, Calif.	271.8	...	297.5	...	305.4	...	313.9	267.7	...	292.5	...	300.5	...	308.0
San Francisco-Oakland, Calif.	...	270.3	...	274.0	...	287.9	...	...	270.9	...	274.3	...	287.2	...
Seattle-Everett, Wash.	258.1	...	274.7	...	282.3	...	288.6	254.6	...	271.5	...	277.8	...	284.3
Washington, D.C.-Md.-Va.	249.2	...	264.7	...	267.1	...	271.8	251.8	...	267.7	...	271.4	...	275.7

[1] The 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.

[2] Average of 85 cities.

26. Producer Price Indexes, by stage of processing

[1967 = 100]

Commodity grouping	Annual average 1980	1980			1981									
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June [1]	July	Aug.	Sept.	Oct.
FINISHED GOODS														
Finished goods	247.0	255.4	256.2	257.2	260.9	263.3	266.0	268.5	269.6	r270.5	271.3	271.2	271.1	274.0
Finished consumer goods	248.9	257.0	257.9	258.9	262.5	265.0	268.2	270.6	271.5	r272.3	272.8	272.6	272.6	274.7
Finished consumer foods	239.5	248.0	248.9	249.3	251.0	251.3	252.6	251.9	252.8	r253.8	256.9	255.5	255.5	253.7
Crude	237.2	237.8	250.5	254.8	257.9	265.6	279.7	279.3	263.1	r258.9	262.4	256.5	253.0	253.3
Processed	237.8	246.9	246.7	246.7	248.4	247.9	248.1	247.4	249.8	r251.3	254.4	253.4	253.7	251.7
Nondurable goods less foods	283.9	291.7	293.9	296.2	302.7	308.4	316.0	320.4	321.0	r322.0	321.2	321.8	323.5	323.8
Durable goods	206.2	214.0	213.1	213.5	214.9	215.1	214.0	216.6	218.1	r218.2	217.9	218.1	215.6	224.3
Consumer nondurable goods less food and energy	191.2	195.6	196.9	197.6	201.9	203.5	204.8	207.3	207.7	r208.4	208.9	209.9	211.0	212.2
Capital equipment	239.8	249.2	250.2	250.9	254.6	256.7	258.1	260.8	262.5	r263.8	265.7	265.9	265.6	271.4
INTERMEDIATE MATERIALS														
Intermediate materials, supplies, and components	280.3	287.7	289.1	291.9	296.1	298.3	302.0	305.8	306.7	r307.2	308.6	309.9	309.6	309.3
Materials and components for manufacturing	265.7	273.3	273.9	275.7	279.6	280.3	281.6	284.1	285.1	285.8	288.0	289.6	290.2	290.3
Materials for food manufacturing	264.4	295.1	299.0	279.6	280.7	273.2	267.5	263.1	259.0	r262.4	262.6	261.7	254.7	252.7
Materials for nondurable manufacturing	259.5	265.0	266.7	268.5	274.0	276.5	279.4	284.3	287.0	r287.7	288.8	290.7	291.2	290.8
Materials for durable manufacturing	301.0	304.7	303.8	304.3	306.9	305.4	306.9	310.6	311.2	r310.7	314.4	316.1	317.4	317.1
Components for manufacturing	231.8	238.4	238.3	246.3	250.3	253.0	254.2	255.4	256.3	r257.3	259.5	261.5	263.4	264.7
Materials and components for construction	268.3	272.4	274.0	276.6	279.2	280.3	282.7	288.0	288.5	r289.6	290.2	290.6	289.9	289.8
Processed fuels and lubricants	503.0	516.2	521.3	539.4	551.9	569.8	598.3	608.5	608.7	605.7	604.3	606.7	600.1	595.1
Manufacturing industries	425.7	440.6	445.2	457.9	469.5	482.8	503.9	509.0	510.7	r505.4	503.7	507.4	499.3	495.6
Nonmanufacturing industries	570.9	583.7	589.3	611.4	624.7	646.7	681.6	696.2	695.2	r694.3	693.1	694.3	689.3	683.1
Containers	254.5	260.1	259.5	260.6	264.6	268.2	270.9	274.3	276.4	277.2	278.2	280.3	280.8	281.1
Supplies	244.5	252.3	255.2	255.0	257.8	257.8	258.9	262.4	264.0	264.6	266.2	266.1	266.1	267.1
Manufacturing industries	231.9	237.5	238.7	239.5	242.5	244.8	246.8	250.6	252.3	253.4	255.3	256.0	256.7	258.9
Nonmanufacturing industries	251.1	259.9	263.8	263.0	265.7	264.6	265.2	268.7	270.2	270.5	272.1	271.5	271.1	271.5
Feeds	229.0	250.3	259.2	251.5	252.0	237.5	231.7	239.2	242.9	r235.4	232.8	228.9	221.7	216.3
Other supplies	253.6	258.8	261.3	262.4	265.6	268.3	270.6	272.9	273.8	r276.3	278.9	279.2	280.6	282.5
CRUDE MATERIALS														
Crude materials for further processing	304.6	322.8	324.6	323.5	328.0	336.5	334.2	336.3	334.4	r335.4	336.2	333.2	327.7	320.3
Foodstuffs and feedstuffs	259.2	279.1	277.3	271.6	270.7	267.1	262.1	263.5	260.6	r264.3	267.0	261.8	253.4	245.6
Nonfood materials	401.0	415.4	424.9	433.8	450.1	484.9	488.4	492.1	492.4	r487.4	484.2	485.9	486.8	480.5
Nonfood materials except fuel	346.1	355.6	363.9	373.3	391.0	427.9	430.9	432.5	428.3	r418.1	413.5	414.2	410.7	405.5
Manufacturing industries	357.4	367.1	376.1	386.5	405.1	445.5	448.6	450.2	445.5	r434.2	429.0	429.7	425.8	420.0
Construction	237.6	245.3	246.5	247.4	254.8	257.2	259.2	261.5	261.7	r262.6	264.7	265.2	265.7	266.7
Crude fuel	615.0	650.9	664.9	670.2	677.4	697.7	703.6	716.6	738.4	r759.2	762.2	768.6	790.6	779.7
Manufacturing industries	690.5	738.1	755.8	762.9	771.9	798.1	805.8	821.9	850.6	r877.2	877.2	885.4	913.8	899.1
Nonmanufacturing industries	567.0	593.8	605.2	608.9	614.9	630.6	635.0	645.8	662.2	r678.5	684.1	689.3	706.3	698.4
SPECIAL GROUPINGS														
Finished goods excluding foods	247.8	256.2	257.0	258.2	262.4	265.5	268.7	272.1	273.3	r274.1	274.1	274.5	274.4	278.7
Finished consumer goods excluding foods	250.8	258.7	259.5	260.9	265.1	268.5	272.5	276.1	277.0	r277.7	277.1	277.5	277.4	281.3
Finished consumer goods less energy	218.0	225.0	225.5	226.0	233.8	229.6	230.2	231.8	232.8	r233.4	234.5	234.5	234.2	236.8
Intermediate materials less foods and feeds	282.3	288.2	289.3	293.5	298.0	301.0	305.4	309.5	310.7	r311.2	312.8	314.3	314.5	314.5
Intermediate materials less energy	265.3	272.2	273.3	274.9	278.3	279.1	280.5	283.7	284.7	r285.5	287.2	288.4	288.7	288.9
Intermediate foods and feeds	252.6	280.3	285.7	270.0	270.9	261.3	255.6	254.9	253.1	r253.2	252.5	250.7	243.7	240.6
Crude materials less agricultural products	446.4	463.2	473.8	482.8	504.0	547.6	551.8	556.0	557.5	r551.3	546.9	549.9	552.4	544.3
Crude materials less energy	256.1	272.4	271.7	267.5	266.0	262.6	259.6	261.1	257.9	r259.7	261.8	258.1	250.5	243.6

[1] Data for June 1981 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.

[2] Not available.

r = revised.

NOTE: Figures in this table may differ from those previously reported because stage-of-processing indexes from January 1976 through December 1980 have been revised to reflect 1972 input-output relationships.

27. Producer Price Indexes, by commodity groupings

[1967=100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1980	1980			1981									
			Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June [1]	July	Aug.	Sept.	Oct.
	All commodities	268.8	277.8	279.1	280.8	264.8	287.6	290.3	293.4	294.1	r294.8	296.0	296.2	295.5	296.0
	All commodities (1957-59 = 100)	285.2	294.7	296.1	297.9	302.2	305.1	308.0	311.3	312.0	r312.8	314.1	314.3	313.5	314.1
	Farm products and processed foods and feeds	244.7	259.4	260.5	257.0	257.9	255.1	253.5	253.8	252.9	r254.3	256.6	253.9	250.0	246.1
	Industrial commodities	274.8	282.0	283.4	286.6	291.5	295.7	299.6	303.5	304.7	r305.1	306.0	307.0	307.2	308.8
	FARM PRODUCTS AND PROCESSED FOODS AND FEEDS														
01	Farm products	249.4	263.6	264.9	265.3	264.5	262.4	260.7	263.3	259.6	r260.7	263.1	257.8	251.0	243.3
01-1	Fresh and dried fruits and vegetables	238.6	240.9	246.6	245.1	258.7	271.5	292.8	286.1	275.3	r263.3	265.0	257.3	251.9	247.9
01-2	Grains	239.0	269.2	270.9	265.2	277.7	267.5	261.8	264.7	257.7	257.1	257.4	242.7	227.0	227.6
01-3	Livestock	252.7	263.0	254.8	251.4	244.3	244.6	239.3	246.6	251.8	263.0	266.5	262.0	257.3	244.4
01-4	Live poultry	202.1	222.9	221.0	218.9	213.1	220.8	213.5	195.4	207.2	210.0	215.3	210.3	196.7	185.7
01-5	Plant and animal fibers	271.1	278.5	287.2	294.1	284.1	268.4	270.1	274.2	258.3	259.6	251.3	232.5	206.5	211.7
01-6	Fluid milk	271.2	280.9	284.7	290.5	288.4	289.5	289.5	287.2	283.6	285.0	284	285.0	287.3	294.3
01-7	Eggs	171.0	175.2	194.0	217.5	185.7	184.8	180.4	196.2	165.0	174.6	185.1	180.7	193.2	193.8
01-8	Hay, hayseeds, and oilseeds	247.1	284.4	298.3	310.2	311.8	295.0	289.5	296.3	299.0	285.3	288.3	284.3	267.2	230.4
01-9	Other farm products	299.0	285.8	296.6	296.0	296.1	295.1	295.9	295.9	259.7	242.7	250.2	263.9	268.9	267.8
02	Processed foods and feeds	241.2	256.1	257.2	251.5	253.3	250.2	248.5	247.6	248.2	r249.9	252.1	250.7	248.4	246.6
02-1	Cereal and bakery products	236.0	241.5	245.3	248.7	251.5	252.1	252.2	253.9	256.3	r256.4	257.2	256.6	258.0	256.6
02-2	Meats, poultry, and fish	243.1	256.0	250.9	248.1	248.1	243.6	242.0	239.1	245.2	r248.6	257.1	254.2	253.3	246.6
02-3	Dairy products	230.6	238.0	240.2	242.3	244.7	245.0	245.1	245.4	244.6	r245.2	245.5	245.6	246.0	247.4
02-4	Processed fruits and vegetables	228.7	233.8	234.7	236.6	238.4	243.7	255.2	258.0	259.4	r262.5	266.5	267.6	270.3	271.3
02-5	Sugar and confectionery	322.5	404.7	409.0	339.8	344.6	323.7	302.0	284.5	262.8	r274.8	269.8	269.1	246.8	250.0
02-6	Beverages and beverage materials	233.0	239.5	240.6	240.5	243.0	244.8	245.4	246.0	247.6	r248.1	246.3	246.3	245.6	248.3
02-7	Fats and oils	226.8	231.0	238.0	234.1	230.2	228.2	229.8	232.4	228.2	r227.3	235.1	228.4	224.6	223.6
02-8	Miscellaneous processed foods	227.2	230.6	235.0	240.5	244.2	248.0	249.2	249.9	251.1	251.5	252.2	252.0	253.0	249.8
02-9	Manufactured animal feeds	226.8	246.9	254.5	247.1	248.9	235.9	231.1	237.7	241.0	r234.3	232.2	228.8	223.2	218.4
	INDUSTRIAL COMMODITIES														
03	Textile products and apparel	183.5	188.1	189.6	190.4	193.1	193.9	195.2	197.6	199.2	r200.1	200.5	201.4	202.5	203.0
03-1	Synthetic fibers (12/75 = 100)	134.7	140.2	140.7	140.8	146.5	147.1	148.9	151.5	156.4	r157.9	158.6	162.0	162.3	163.5
03-2	Processed yarns and threads (12/75 = 100)	122.5	125.1	125.8	128.2	129.8	130.3	134.6	135.0	138.6	r139.3	139.0	139.3	141.8	142.0
03-3	Gray fabrics (12/75 = 100)	138.1	143.5	145.0	144.0	143.6	144.0	144.7	146.6	145.8	r147.4	147.4	148.2	148.1	147.8
03-4	Finished fabrics (12/75 = 100)	115.7	118.3	119.1	120.1	122.2	122.9	123.2	124.9	125.7	r125.6	125.2	125.9	126.2	126.1
03-81	Apparel	172.4	176.2	176.8	177.5	179.9	180.7	181.4	184.3	185.2	r186.2	186.2	186.5	187.2	187.9
03-82	Textile housefurnishings	206.9	213.8	213.8	214.3	219.8	221.3	221.3	222.1	224.0	r223.9	231.6	231.6	236.6	237.4
04	Hides, skins, leather, and related products	248.9	251.2	255.4	256.9	258.2	257.7	261.2	263.5	263.7	r261.6	262.1	261.7	263.0	262.7
04-1	Hides and skins	370.9	381.5	409.1	392.8	377.5	367.4	([2])	([2])	([2])	([2])	([2])	([2])	([2])	([2])
04-2	Leather	310.6	301.9	317.3	332.4	332.6	310.0	322.5	337.8	330.0	321.0	317.4	312.2	311.7	312.1
04-3	Footwear	233.1	236.6	237.5	236.9	238.4	240.7	240.4	241.1	241.4	r241.5	241.9	242.3	242.0	241.6
04-4	Other leather and related products	218.3	221.8	222.6	225.3	230.1	236.9	238.4	238.5	244.2	r244.3	247.8	247.8	250.1	250.1
05	Fuels and related products and power	574.0	592.9	600.2	615.7	634.6	667.5	696.5	707.2	709.0	r707.6	703.4	704.1	703.2	697.2
05-1	Coal	467.3	470.7	475.4	475.3	477.8	480.8	481.1	486.1	487.3	r491.7	505.7	507.3	510.6	511.1
05-2	Coke	430.6	430.6	430.6	430.1	430.1	430.1	430.1	430.1	467.9	r469.7	470.3	470.3	470.3	470.3
05-3	Gas fuels [3]	760.7	802.2	825.5	844.3	857.1	881.6	889.9	907.8	933.9	r954.6	946.6	952.4	979.7	964.7
05-4	Electric power	321.6	337.4	333.8	337.6	341.4	346.2	351.2	355.5	360.4	r366.6	374.9	383.6	382.0	375.9
05-61	Crude petroleum [4]	556.4	579.6	600.6	632.8	704.4	842.7	842.8	842.5	839.9	r815.9	799.0	797.0	797.0	788.4
05-7	Petroleum products, refined [5]	674.7	690.4	697.6	717.0	736.9	769.6	825.5	840.9	835.3	r828.1	818.4	813.4	805.7	802.0
06	Chemicals and allied products	260.3	264.8	266.7	268.1	274.3	277.6	280.4	286.0	288.6	r290.5	291.4	293.2	293.3	292.8
06-1	Industrial chemicals [6]	324.0	330.0	332.7	334.6	344.5	352.1	354.5	362.4	368.5	r369.7	370.4	371.9	372.0	369.4
06-21	Prepared paint	235.3	239.3	241.4	241.4	242.9	246.6	246.6	248.1	250.0	r250.0	251.0	251.0	251.0	251.0
06-22	Paint materials	273.9	279.6	279.8	281.0	284.0	287.0	290.5	295.4	300.3	300.8	304.4	308.4	307.8	308.0
06-3	Drugs and pharmaceuticals	174.5	178.4	181.1	182.6	184.7	187.3	189.3	191.0	192.4	193.2	195.4	195.6	197.1	198.1
06-4	Fats and oils, inedible	298.0	302.0	308.2	317.1	310.7	289.7	295.7	312.7	312.1	303.1	290.9	305.6	285.6	277.7
06-5	Agricultural chemicals and chemical products	257.1	260.6	261.1	263.3	267.6	271.6	275.8	277.8	279.1	288.9	288.9	293.8	292.3	292.3
06-6	Plastic resins and materials	279.2	276.1	276.2	274.1	214.7	276.1	279.4	285.1	287.9	r290.0	295.9	295.6	298.5	297.6
06-7	Other chemicals and allied products	224.5	230.9	232.4	234.1	244.4	245.1	248.3	255.3	254.8	r256.3	254.8	256.7	257.0	258.0
07	Rubber and plastic products	217.4	222.8	223.4	223.3	224.8	226.4	228.4	230.8	231.8	r233.4	233.5	234.4	236.0	237.7
07-1	Rubber and rubber products	237.5	244.6	245.0	244.9	246.2	248.5	252.1	253.0	254.4	r256.8	258.0	258.4	261.3	264.3
07-11	Crude rubber	264.3	271.7	271.0	268.5	279.1	281.9	281.2	279.8	283.2	r285.2	283.8	282.0	280.6	280.5
07-12	Tires and tubes	236.9	245.2	245.2	245.2	240.9	243.5	248.6	250.7	251.2	r251.2	251.0	251.0	256.5	257.7
07-13	Miscellaneous rubber products	226.6	232.0	233.3	234.0	238.6	240.4	243.5	243.8	245.7	r250.9	254.7	256.4	257.1	263.4
07-2	Plastic products (6/78 = 100)	121.1	123.6	124.0	123.9	125.0	125.5	126.0	128.2	128.6	r129.1	128.5	129.3	129.6	130.0
08	Lumber and wood products	288.9	289.0	293.4	299.4	296.5	294.7	294.4	299.4	r298.4	r298.1	295.5	294.3	289.1	284.4
08-1	Lumber	325.8	320.6	324.9	333.0	331.3	326.9	326.2	333.6	r336.3	r335.8	330.1	329.2	319.7	312.0
08-2	Millwork	260.4	264.5	270.0	273.3	273.6	273.8	275.7	276.5	274.8	r272.2	273.6	272.4	271.3	271.2
08-3	Plywood	246.5	252.9	256.6	263.5	251.1	251.2	248.8	256.0	r248.3	r251.5	248.1	245.9	241.2	234.4
08-4	Other wood products	239.1	236.7	236.6	236.2	238.5	238.1	236.9	238.3	r238.2	r239.8	240.5	239.9	240.6	240.0

See footnotes at end of table.

27. Continued—Producer Price Indexes, by commodity groupings

[1967=100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1980	1980			1981									
			Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June [1]	July	Aug.	Sept	Oct.
	INDUSTRIAL COMMODITIES Continued														
09	Pulp, paper, and allied products	249.2	254.3	255.0	256.7	264.4	267.2	r269.0	271.4	272.1	r272.9	273.8	275.7	276.9	279.1
09-1	Pulp, paper, and products, excluding building paper and board	250.6	255.6	256.2	257.9	260.9	264.5	266.8	268.6	269.9	r271.2	272.5	274.3	275.5	276.5
09-11	Woodpulp	380.3	389.6	390.2	390.2	390.2	390.2	390.2	394.1	394.2	r394.2	396.6	396.6	396.6	404.7
09-12	Wastepaper	208.7	193.5	192.3	191.5	191.5	186.1	185.1	184.2	182.7	182.9	182.1	182.1	178.5	165.1
09-13	Paper	256.8	262.1	264.1	269.4	271.7	272.9	273.8	275.2	275.9	r278.5	280.0	283.8	287.1	288.6
09-14	Paperboard	234.6	239.9	241.7	239.6	250.2	252.8	255.1	255.7	258.8	r259.2	261.4	261.2	262.5	262.6
09-15	Converted paper and paperboard products	238.5	243.7	243.5	244.7	246.9	252.1	255.3	257.3	258.8	r259.9	260.8	262.5	263.0	263.9
09-2	Building paper and board	206.2	212.7	216.5	219.7	219.7	225.7	227.9	232.5	237.3	r237.4	234.6	233.8	233.7	232.5
10	Metals and metal products	286.4	291.9	291.1	290.6	294.0	294.0	296.4	298.8	299.1	r298.4	302.5	304.3	305.1	305.5
10-1	Iron and steel	305.2	310.5	312.7	316.4	323.0	323.2	328.2	331.0	330.4	r330.1	338.7	339.7	339.7	341.5
10-13	Steel mill products	302.7	307.5	309.4	313.7	322.6	322.9	328.7	331.8	331.8	r332.2	344.9	344.9	345.3	348.7
10-2	Nonferrous metals	305.0	309.4	302.1	293.4	292.1	287.4	286.5	288.4	287.7	r284.5	283.3	287.7	290.0	286.8
10-3	Metal containers	298.6	304.4	303.3	303.3	311.4	313.8	314.1	314.1	314.1	314.1	315.7	319.4	319.6	319.0
10-4	Hardware	240.5	246.6	249.6	251.7	254.5	258.0	258.6	258.5	259.4	r259.7	261.7	263.2	265.7	267.5
10-5	Plumbing fixtures and brass fittings	246.7	250.6	252.3	254.9	256.7	259.2	259.5	265.3	266.2	r268.9	270.3	271.0	271.4	272.8
10-6	Heating equipment	206.5	210.6	212.0	214.0	216.6	217.6	219.5	219.8	222.3	r223.5	225.7	227.2	227.9	228.4
10-7	Fabricated structural metal products	270.5	276.9	278.0	279.3	283.1	285.4	289.4	293.1	294.0	r295.0	298.3	300.0	300.5	302.2
10-8	Miscellaneous metal products	250.0	256.3	256.9	257.6	260.5	263.1	264.7	267.2	269.7	r269.4	275.0	273.8	274.5	276.2
11	Machinery and equipment	239.8	246.8	248.3	249.8	253.3	255.3	257.5	259.6	260.7	r262.1	264.5	266.0	267.8	268.8
11-1	Agricultural machinery and equipment	259.2	265.4	271.6	272.9	276.4	278.4	279.8	282.5	285.7	r286.8	287.3	289.3	292.0	292.1
11-2	Construction machinery and equipment	289.4	299.1	300.1	301.4	305.9	310.0	312.8	317.0	318.4	r320.1	324.0	324.9	326.6	329.0
11-3	Metalworking machinery and equipment	274.4	282.5	283.9	285.7	289.7	291.6	294.9	298.7	299.9	r301.3	303.0	303.6	305.3	306.5
11-4	General purpose machinery and equipment	264.6	272.5	274.3	275.6	278.6	280.2	282.3	284.4	285.9	r287.0	290.0	291.7	293.5	294.4
11-6	Special industry machinery and equipment	275.8	286.0	287.7	290.9	295.6	299.2	301.0	303.2	307.2	r308.8	311.0	310.5	312.7	314.7
11-7	Electrical machinery and equipment	201.7	207.0	207.5	208.9	211.9	213.7	216.0	217.4	217.5	r219.2	221.0	222.8	224.1	225.0
11-9	Miscellaneous machinery	229.9	236.5	238.5	239.6	243.3	245.2	247.0	248.5	248.8	r250.1	253.2	255.3	257.8	258.3
12	Furniture and household durables	187.7	190.9	191.5	193.1	194.0	195.2	195.8	196.4	197.4	r197.3	198.9	199.5	200.7	201.4
12-1	Household furniture	204.8	209.8	210.9	212.1	212.9	213.8	214.5	216.5	216.4	r218.6	220.4	221.4	223.3	224.1
12-2	Commercial furniture	236.0	241.4	242.2	242.4	246.7	251.6	253.4	254.5	257.7	r257.9	259.1	259.2	261.5	262.5
12-3	Floor coverings	163.0	164.4	165.5	170.7	172.3	171.9	174.1	175.3	179.5	r180.7	182.8	182.3	181.5	181.5
12-4	Household appliances	174.2	177.5	178.5	179.5	182.2	183.5	184.2	185.1	185.5	r186.1	187.5	187.7	188.3	189.5
12-5	Home electronic equipment	91.4	91.5	91.2	91.0	91.0	91.3	91.4	90.9	90.8	r86.7	87.1	87.5	87.8	88.3
12-6	Other household durable goods	278.6	281.8	281.2	285.7	278.9	280.8	278.1	275.3	276.7	r276.4	279.1	282.0	285.4	285.3
13	Nonmetallic mineral products	283.0	288.6	288.7	291.2	296.6	297.9	300.9	310.8	312.0	r313.6	313.9	314.0	313.1	313.1
13-11	Flat glass	196.5	200.7	203.1	203.0	203.9	204.3	204.8	210.2	210.2	r210.3	216.2	218.8	218.8	218.5
13-2	Concrete ingredients	274.0	279.0	279.1	279.7	290.0	291.4	292.6	297.4	297.5	r297.5	298.1	298.4	298.4	298.3
13-3	Concrete products	273.9	277.5	277.7	277.6	286.1	286.6	286.9	289.9	291.2	r293.5	293.0	293.0	292.9	293.3
13-4	Structural clay products excluding refractories	231.5	233.3	233.5	233.6	239.5	239.8	244.6	246.0	250.1	r250.7	250.3	250.4	254.8	255.6
13-5	Refractories	264.6	273.2	273.2	273.2	282.6	293.5	296.1	296.4	304.0	r307.1	308.0	308.0	308.0	308.8
13-6	Asphalt roofing	396.8	408.5	397.1	394.6	394.8	389.5	390.5	415.9	407.4	r428.5	420.3	419.2	400.0	401.3
13-7	Gypsum products	256.3	249.5	253.3	252.7	259.6	257.3	257.6	256.8	261.1	260.7	259.7	255.3	252.9	252.4
13-8	Glass containers	292.7	306.2	306.2	311.4	311.4	311.4	311.4	326.7	335.3	r335.3	334.7	334.8	334.8	334.8
13-9	Other nonmetallic minerals	394.6	402.7	403.3	418.9	418.7	424.7	441.7	479.1	477.6	476.8	476.3	475.2	474.2	473.2
14	Transportation equipment (12/68 = 100)	207.0	217.4	217.8	224.3	227.4	229.1	228.1	231.9	233.6	r234.3	235.3	235.8	231.7	244.4
14-1	Motor vehicles and equipment	208.8	218.2	218.6	226.2	228.9	230.9	229.5	233.9	236.0	r236.7	237.5	238.1	232.6	247.5
14-4	Railroad equipment	313.1	323.3	323.6	323.9	332.5	332.5	333.9	335.7	331.2	r331.4	344.3	345.0	345.0	345.0
15	Miscellaneous products	258.8	266.0	263.6	265.3	264.3	264.9	264.0	266.0	266.9	r266.3	262.8	262.6	266.7	268.0
15-1	Toys, sporting goods, small arms, ammunition	198.6	202.7	202.8	205.7	208.4	210.5	211.1	211.3	211.4	r211.2	213.8	214.0	215.1	213.7
15-2	Tobacco products	245.7	249.4	254.4	254.8	254.8	256.1	256.3	268.7	268.7	r268.7	268.5	268.6	274.2	278.0
15-3	Notions	217.2	224.0	224.1	225.0	227.2	247.3	247.3	248.4	267.8	268.0	267.5	267.7	267.8	267.3
15-4	Photographic equipment and supplies	202.9	200.8	206.7	206.6	207.4	209.6	211.2	212.4	212.5	r212.5	211.7	207.4	209.0	209.1
15-5	Mobile homes (12/74 = 100)	150.2	153.2	152.7	153.0	153.0	153.1	155.0	([2])	([2])	([2])	155.8	157.7	158.1	158.6
15-9	Other miscellaneous products	363.4	383.4	367.0	370.5	363.3	358.1	351.3	349.0	349.4	r346.9	332.3	333.9	343.4	346.7

[1] Data for June 1981 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.

[2] Not available.

[3] Prices for natural gas are lagged 1 month.

[4] Includes only domestic production.

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

[6] Some prices for industrial chemicals are lagged 1 month.

r=revised.

28. Producer Price Indexes, for special commodity groupings

[1967 = 100 unless otherwise specified]

Commodity grouping	Annual average 1980	1980			1981									
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June [1]	July	Aug.	Sept.	Oct.
All commodities less farm products	269.6	278.1	279.4	281.2	285.4	288.8	291.9	295.0	296.1	r296.7	297.7	298.5	298.3	299.4
All foods	244.7	258.8	259.7	254.3	255.8	253.7	253.4	251.4	250.3	252.2	255.5	253.7	251.7	249.4
Processed foods	246.6	261.7	261.9	255.5	257.0	253.9	252.3	250.3	250.5	r253.1	256.3	254.9	252.8	250.6
Industrial commodities less fuels	243.5	249.6	250.3	252.3	255.4	257.2	258.6	261.8	262.9	r263.5	264.8	266.0	266.3	268.6
Selected textile mill products (Dec. 1975 = 100)	124.3	127.5	128.1	129.3	131.8	132.5	132.2	134.5	135.7	r135.9	136.9	137.2	138.2	138.5
Hosiery	123.2	126.2	126.7	126.4	129.5	130.3	130.5	134.2	134.6	r135.7	135.7	135.3	135.5	136.5
Underwear and nightwear	185.4	189.7	190.3	190.6	199.2	200.9	202.0	202.1	202.3	203.5	205.0	205.0	205.0	205.0
Chemicals and allied products, including synthetic rubber and manmade fibers and yarns	250.7	255.4	257.0	258.2	264.8	268.3	271.0	276.1	279.0	r281.2	282.1	283.9	284.4	284.2
Pharmaceutical preparations	167.1	170.8	173.7	174.6	177.1	179.7	182.1	184.0	185.7	r186.6	188.7	189.1	190.8	192.7
Lumber and wood products, excluding millwork and other wood products	304.0	302.3	306.5	314.2	309.2	306.0	304.8	312.3	311.5	r312.2	307.2	305.9	297.9	290.3
Special metals and metal products	258.5	265.7	265.7	268.6	271.8	272.7	273.5	276.8	277.9	r277.9	280.5	281.8	280.1	286.6
Fabricated metal products	258.2	264.3	265.2	266.3	269.9	272.5	274.7	277.0	278.5	r279.0	282.7	283.4	284.2	285.6
Copper and copper products	222.0	216.5	215.7	210.8	207.4	205.0	204.8	207.7	206.6	r203.7	203.0	206.3	205.4	203.8
Machinery and motive products	230.4	239.2	240.2	244.1	247.4	249.4	250.2	253.1	254.4	r255.6	257.4	258.4	257.6	264.0
Machinery and equipment, except electrical	263.0	273.0	275.1	276.7	277.3	279.7	281.9	284.3	285.9	r287.3	289.9	291.3	293.4	294.4
Agricultural machinery, including tractors	267.3	274.8	280.9	281.4	285.0	287.3	288.3	289.6	293.7	r294.8	294.3	296.9	300.5	300.4
Metalworking machinery	299.4	309.6	311.2	314.1	318.9	320.5	323.5	325.9	327.1	r328.3	329.9	330.8	333.7	335.6
Numerically controlled machine tools (Dec. 1971 = 100)	225.6	231.7	232.1	230.6	234.6	235.0	235.7	235.7	237.3	r241.4	242.1	242.1	242.1	242.1
Total tractors	287.3	298.3	299.9	301.2	305.8	311.1	311.8	316.8	322.0	r322.5	325.4	327.3	330.5	332.9
Agricultural machinery and equipment less parts	261.2	268.3	273.7	274.3	278.0	280.2	281.5	283.2	286.7	r287.9	287.6	290.0	293.0	293.1
Farm and garden tractors less parts	268.8	278.0	282.4	282.4	284.4	287.2	287.6	289.3	297.7	r298.0	297.2	300.6	305.0	305.0
Agricultural machinery excluding tractors less parts	266.5	272.5	279.9	280.9	285.7	287.7	289.1	290.2	290.8	r292.5	292.3	294.1	297.1	297.0
Industrial valves	287.8	294.6	296.0	297.8	300.7	305.5	310.1	314.0	314.3	r315.3	314.1	316.4	319.3	319.0
Industrial fittings	291.8	298.6	298.6	298.6	298.6	296.0	298.9	302.7	303.0	303.0	303.0	303.0	304.3	304.1
Abrasive grinding wheels	([2])	263.4	273.0	273.8	([2])	([2])	([2])	([2])	([2])	([2])	([2])	([2])	([2])	([2])
Construction materials	266.4	269.9	271.9	274.1	276.7	277.2	279.0	283.9	284.2	r285.0	285.4	285.6	284.4	284.5

[1] Data for June 1981 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.

[2] Not available.

r = revised.

29. Producer Price Indexes, by durability of product

[1967 = 100]

Commodity grouping	Annual average 1980	1980			1981									
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June [1]	July	Aug.	Sept.	Oct.
Total durable goods	251.5	258.4	258.6	261.0	262.7	263.8	264.9	267.8	268.6	r269.1	270.7	271.8	271.7	274.9
Total nondurable goods	282.4	293.0	295.2	296.3	302.6	306.8	310.9	314.2	314.8	r315.7	316.3	315.9	314.6	312.7
Total manufactures	261.5	269.6	270.5	272.0	277.3	279.3	282.3	285.3	286.2	r286.9	288.0	288.4	288.1	289.7
Durable	250.8	257.8	257.9	260.4	262.3	263.4	264.4	267.2	268.2	r268.9	270.6	271.6	271.6	274.9
Nondurable	273.0	282.1	284.0	284.3	293.5	296.4	301.7	304.9	305.7	r306.4	306.8	306.6	305.9	305.4
Total raw or slightly processed goods	305.7	319.6	322.9	326.2	322.9	330.3	331.2	334.6	334.2	r335.4	336.6	335.6	332.7	326.2
Durable	278.2	282.7	285.6	284.0	275.9	275.5	281.7	286.0	280.4	r272.4	271.9	276.6	271.1	264.3
Nondurable	306.7	321.3	324.6	328.2	325.3	333.3	333.8	337.1	337.1	r338.9	340.3	338.9	336.2	329.7

[1] Data for June 1981 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.

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

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1980	1980			1981									
			Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June [1]	July	Aug.	Sept.	Oct.
	MINING														
1011	Iron ores (12/75 = 100)	152.9	155.8	155.8	155.8	155.8	168.1	168.1	168.1	168.1	168.1	168.1	168.1	168.1	168.1
1092	Mercury ores (12/75 = 100)	331.2	338.7	343.7	325.0	297.9	324.5	335.4	354.1	347.9	352.0	358.3	365.4	364.5	354.1
1211	Bituminous coal and lignite	466.7	469.7	474.2	473.9	476.1	478.1	478.5	483.5	484.5	r488.4	502.5	503.8	506.3	506.6
1311	Crude petroleum and natural gas	643.8	681.8	704.6	731.7	786.5	897.9	901.7	908.6	919.7	r713.7	898.9	901.4	914.6	901.0
1442	Construction sand and gravel	252.7	261.8	263.2	264.3	270.1	272.3	275.2	278.0	278.4	r278.4	278.5	278.3	279.4	279.6
1455	Kaolin and ball clay (6/76 = 100)	136.0	137.2	132.1	133.7	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	143.4
	MANUFACTURING														
2011	Meatpacking plants	244.0	258.0	251.4	249.0	244.7	237.2	236.1	237.8	243.6	r245.9	252.6	250.7	252.9	244.3
2013	Sausages and other prepared meats	220.1	247.0	249.5	247.4	235.3	232.9	230.4	227.5	230.4	r238.1	245.5	252.7	253.7	252.0
2016	Poultry dressing plants	191.9	211.3	205.9	201.8	201.9	208.3	203.9	186.7	196.2	198.3	203.6	201.2	188.8	175.5
2021	Creamery butter	258.5	273.2	273.3	274.8	273.6	273.5	273.6	273.4	273.4	r273.5	273.8	273.7	275.0	279.2

See footnotes at end of table.

30. Continued—Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1980	1980			1981									
			Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June [1]	July	Aug.	Sept.	Oct.
	MANUFACTURING Continued														
2022	Cheese, natural and processed (12/72 = 100)	204.4	213.7	214.9	216.1	215.9	215.6	215.7	216.2	216.2	r216.1	217.1	216.0	217.0	215.6
2024	Ice cream and frozen desserts (12/72 = 100)	193.3	199.5	199.8	207.5	210.1	210.6	210.6	211.4	212.4	212.4	212.7	212.7	212.7	212.5
2033	Canned fruits and vegetables	221.4	227.6	231.1	232.0	233.3	237.4	241.5	244.0	245.9	r248.9	252.4	253.8	255.6	256.1
2034	Dehydrated food products (12/73 = 100)	160.2	162.6	168.6	170.4	174.1	171.3	172.9	174.2	175.3	r175.0	180.5	178.7	183.4	182.3
2041	Flour mills (12/71 = 100)	189.1	201.5	205.1	199.5	203.8	198.4	195.1	201.5	199.4	199.3	196.5	191.0	194.8	190.6
2044	Rice milling	243.4	237.2	265.8	287.2	289.6	289.6	298.0	300.9	300.3	300.3	297.4	284.3	268.2	247.3
2048	Prepared foods, n.e.c. (12/75 = 100)	124.2	129.2	133.3	133.9	132.6	129.3	126.6	128.5	129.8	r127.5	125.9	124.9	120.0	117.5
2061	Raw cane sugar	414.1	588.2	563.8	402.9	418.0	367.1	318.8	275.7	224.8	263.3	272.2	254.6	212.3	219.9
2063	Beet sugar	358.0	460.1	512.2	423.3	414.5	398.1	370.7	350.5	334.4	r339.7	299.3	299.3	271.0	272.2
2067	Chewing gum	290.7	322.4	322.9	322.9	323.0	323.0	323.1	323.1	303.1	303.1	303.2	303.2	303.2	303.2
2074	Cottonseed oil mills	192.9	218.7	231.8	228.0	221.2	193.7	204.4	218.4	216.6	212.3	212.0	206.0	182.3	172.0
2075	Soybean oil mills	244.3	279.2	290.5	270.5	272.0	252.5	253.2	259.1	258.1	r248.4	253.6	245.6	234.6	230.1
2077	Animal and marine fats and oils	290.2	311.0	317.2	311.8	310.8	287.2	284.2	301.7	304.3	291.3	288.8	294.1	281.4	274.1
2083	Malt	249.9	267.4	267.4	267.4	286.1	286.1	286.1	286.1	286.1	286.1	286.1	286.1	275.4	275.4
2085	Distilled liquor, except brandy (12/75 = 100)	123.0	127.9	128.5	129.2	129.2	133.9	133.9	133.9	134.3	134.6	134.6	135.5	135.5	135.5
2091	Canned and cured seafoods (12/73 = 100)	174.0	180.0	183.1	183.4	187.3	187.1	187.6	187.7	187.3	187.5	187.4	188.5	188.8	188.2
2092	Fresh or frozen packaged fish	366.9	353.8	353.3	353.9	374.9	366.7	385.2	393.5	378.2	r375.5	369.2	348.6	355.0	358.4
2095	Roasted coffee (12/72 = 100)	269.3	257.0	252.5	248.5	238.2	238.3	238.3	238.5	238.6	238.6	236.6	236.0	235.6	238.6
2098	Macaroni and spaghetti	233.8	243.6	243.6	243.6	243.6	243.6	243.6	243.6	246.6	246.6	259.5	259.5	259.5	259.5
2111	Cigarettes	254.6	257.8	263.5	263.6	263.6	264.1	264.2	278.3	278.3	278.3	278.3	278.3	284.2	288.4
2121	Cigars	158.6	163.7	164.0	165.1	165.1	165.3	167.0	168.5	168.5	r168.5	166.8	166.8	171.6	171.6
2131	Chewing and smoking tobacco	279.8	295.0	295.0	298.8	298.7	320.7	320.7	320.8	320.8	320.8	320.8	321.1	325.2	327.6
2211	Weaving mills, cotton (12/72 = 100)	215.8	223.4	224.2	225.0	227.9	230.9	232.3	235.3	233.5	r234.3	234.9	236.9	235.5	236.1
2221	Weaving mills, synthetic (12/77 = 100)	124.8	130.7	133.0	132.5	131.9	132.3	133.3	134.9	135.7	r137.1	137.0	137.5	138.4	139.1
2251	Women's hosiery, except socks (12/75 = 100)	106.3	108.7	109.0	108.6	109.1	109.2	108.9	114.1	114.2	r115.6	115.6	115.0	115.1	115.2
2254	Knit underwear mills	190.1	194.2	194.7	195.0	205.6	208.7	209.7	209.8	210.0	r210.0	210.5	210.7	210.8	210.8
2257	Circular knit fabric mills (6/76 = 100)	104.6	106.7	107.1	107.5	109.3	109.6	109.1	110.8	110.5	r110.4	109.6	110.5	111.0	112.3
2261	Finishing plants, cotton (6/76 = 100)	135.1	139.1	139.3	140.2	142.4	144.5	144.6	146.9	147.0	r146.2	146.2	146.1	145.3	144.9
2262	Finishing plants, synthetics, silk (6/76 = 100)	113.6	117.3	117.9	120.5	121.7	123.1	124.3	125.2	126.6	r126.6	127.0	127.7	129.0	129.0
2272	Tufted carpets and rugs	138.1	138.8	140.0	145.7	148.1	147.8	150.2	151.5	154.5	r155.6	159.2	158.7	157.9	157.9
2281	Yarn mills, except wool (12/71 = 100)	203.5	207.9	209.9	215.1	216.9	218.1	220.7	220.9	224.1	r225.8	225.1	225.3	223.9	222.3
2282	Throwing and winding mills (6/76 = 100)	115.5	118.2	118.4	120.1	123.2	123.2	131.3	131.5	139.1	r139.3	139.0	139.5	146.7	148.0
2284	Thread mills (6/76 = 100)	139.1	143.8	143.9	143.9	144.1	144.3	148.4	150.8	150.9	151.1	151.1	151.1	154.8	157.0
2298	Cordage and twine (12/77 = 100)	123.6	127.1	129.2	129.3	129.3	129.3	130.9	132.7	134.3	134.3	134.3	134.3	139.3	139.3
2311	Men's and boys' suits and coats	212.6	216.2	216.3	216.1	218.2	219.7	220.1	220.3	220.4	r224.6	223.1	224.1	226.1	227.0
2321	Men's and boys' shirts and nightwear	204.4	208.0	208.6	209.5	206.3	207.3	207.1	207.6	207.1	r207.5	208.6	208.7	209.6	210.2
2322	Men's and boys' underwear	208.0	212.8	212.8	212.9	224.9	229.1	231.0	231.0	231.0	r230.7	230.7	230.7	230.7	230.8
2323	Men's and boys' neckwear (12/75 = 100)	112.6	112.4	112.4	115.4	115.4	115.4	115.4	115.4	115.4	115.4	113.9	113.9	113.9	113.9
2327	Men's and boys' separate trousers	175.3	180.2	180.2	180.3	185.3	185.3	185.3	186.0	186.1	r186.1	186.3	186.4	186.4	186.6
2328	Men's and boys' work clothing	240.5	244.3	244.3	244.4	242.2	242.2	242.3	247.0	248.2	r248.3	250.7	251.3	251.4	252.4
2331	Women's and misses' blouses and waists (6/78 = 100)	110.3	114.0	114.0	115.4	116.3	116.3	116.4	118.3	118.4	r118.5	119.7	119.8	120.1	123.6
2335	Women's and misses' dresses (12/77 = 100)	114.7	116.3	116.3	116.3	116.5	116.9	118.5	118.4	122.3	r122.5	121.4	121.5	122.5	122.5
2341	Women's and children's underwear (12/72 = 100)	154.4	156.0	157.1	158.1	165.5	167.5	168.8	169.0	169.2	r170.5	171.2	171.2	171.2	171.2
2342	Brassieres and allied garments (12/75 = 100)	126.5	129.0	129.1	129.1	131.7	132.8	134.9	135.0	135.0	r136.9	139.2	139.2	139.2	139.2
2361	Children's dresses and blouses (12/77 = 100)	109.9	112.7	115.1	117.4	118.1	118.9	119.2	120.7	120.5	r120.5	120.5	120.5	120.5	120.9
2381	Fabric dress and work gloves	268.6	271.1	272.1	272.1	284.9	289.1	289.1	289.1	292.1	292.1	289.2	289.2	289.2	289.2
2394	Canvas and related products (12/77 = 100)	123.8	125.1	125.1	126.1	126.8	126.8	127.8	129.3	130.0	r130.1	130.6	133.7	135.2	138.1
2396	Automotive and apparel trimmings (12/77 = 100)	122.4	122.3	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0
2421	Sawmills and planing mills (12/71 = 100)	227.7	223.2	226.8	233.5	232.3	229.6	228.6	233.3	234.8	r234.8	231.6	231.0	224.9	219.7
2436	Softwood veneer and plywood (12/75 = 100)	144.6	149.1	152.3	158.2	149.8	149.3	147.2	152.6	145.7	r148.1	144.0	139.9	135.7	129.4
2439	Structural wood members, n.e.c. (12/75 = 100)	155.6	156.2	157.0	157.1	157.1	157.0	157.1	158.3	158.2	158.2	157.5	157.1	156.2	154.6
2448	Wood pallets and skids (12/75 = 100)	160.1	154.6	154.7	154.1	153.8	152.8	152.7	153.1	153.1	153.0	153.0	152.8	152.7	152.0
2451	Mobile homes (12/74 = 100)	150.3	153.2	152.7	153.1	153.1	153.2	155.0	155.8	155.9	r156.1	155.9	157.7	158.1	159.1
2492	Particleboard (12/75 = 100)	161.5	159.8	163.6	165.9	163.9	170.3	172.3	180.9	184.5	r182.3	178.3	172.3	169.3	166.8
2511	Wood household furniture (12/71 = 100)	183.8	188.1	189.1	190.0	210.1	192.1	193.3	195.4	196.2	r197.5	198.3	199.1	200.8	201.6
2512	Upholstered household furniture (12/71 = 100)	163.6	167.7	168.6	170.5	169.9	170.1	170.1	171.8	169.7	r173.9	176.4	176.4	177.7	178.3
2515	Mattresses and bedsprings	179.1	186.5	186.5	186.5	186.3	188.3	189.5	190.5	190.4	r190.5	195.4	198.7	199.4	199.4
2521	Wood office furniture	235.2	239.7	239.7	240.9	244.1	250.4	253.5	254.5	255.4	r254.6	255.7	255.7	258.1	258.1
2611	Pulp mills (12/73 = 100)	240.0	246.1	246.8	246.8	246.9	246.9	246.9	251.2	251.3	r251.3	253.5	253.5	253.5	257.2
2621	Paper mills, except building (12/74 = 100)	145.5	148.2	149.2	150.7	152.0	152.6	153.3	153.9	154.3	r155.7	157.6	158.3	159.6	159.8
2631	Paperboard mills (12/74 = 100)	139.0	142.3	143.2	142.4	148.2	149.2	150.8	151.0	152.1	r152.3	152.7	152.6	153.6	153.7
2647	Sanitary paper products	322.0	332.6	334.7	338.2	338.3	342.5	343.0	343.2	344.3	r344.4	345.3	345.3	345.3	345.3
2654	Sanitary food containers	216.0	222.3	222.3	225.3	232.0	235.2	237.9	239.2	239.2	r242.2	245.5	254.2	254.5	254.8
2655	Fiber cans, drums, and similar products (12/75 = 100)	150.6	155.5	155.5	155.0	157.7	160.6	160.7	160.8	160.9	160.9	163.2	163.2	163.2	167.8
2812	Alkalies and chlorine (12/73 = 100)	247.5	257.9	265.1	262.3	277.9	299.2	295.6	294.4	302.2	r309.3	302.6	309.1	313.1	314.5
2821	Plastics materials and resins (6/76 = 100)	143.0	141.5	141.5	140.9	142.4	143.5	144.8	148.1	149.7	r150.7	155.0	154.6	156.9	155.5
2822	Synthetic rubber	255.8	260.9	260.4	262.5	275.9	280.7	283.9	288.1	293.3	r296.3	296.1	296.1	296.3	299.9
2824	Organic fiber, noncellulosic	132.5	138.0	138.7	138.9	144.0	144.7	147.4	149.9	156.2	r156.8	158.2	160.5	161.6	163.6
2873	Nitrogenous fertilizers (12/75 = 100)	124.4	130.3	130.0	131.8	135.0	138.1	141.7	147.1	148.5	r143.4	147.2	144.5	142.7	143.1
2874	Phosphatic fertilizers	237.3	239.3	239.6	245.4	247.9	248.2	253.5	251.6	251.5	250.9	249.9	261.0	258.8	259.0
2875	Fertilizers, mixing only	246.9	250.6	252.9	252.2	255.8	266.8	270.0	271.1	273.6	r273.1	274.2	273.1	272.5	271.2
2892	Explosives	269.7	273.5	272.9	282.8	288.8	295.4	303.9	324.8	314.5	r312.6	315.7	316.7	316.4	318.3
2911	Petroleum refining (6/76 = 100)	248.6	254.6	256.3	261.4	268.3	279.5	299.0	306.0	304.1	302.6	299.3	297.5	295.8	294.5
2951	Paving mixtures and blocks (12/75 = 100)	171.4	176.2	176.2	181.5	183.1	185.4	189.1	198.1	198.8	198.4	197.4	196.2	195.8	196.1
2952	Asphalt felts and coatings (12/75 = 100)	173.4	178.6	173.5	172.5	172.4	170.0	169.7	180.4	176.3	r185.7	182.2	181.7	173.7	174.2
3011	Tires and inner tubes (12/73 = 100)	203.1	209.9	209.9	210.1	207.0	209.3	213.8	215.5	216.2	r216.2	216.1	216.2	220.5	221.3

30. Continued—Producer Price Indexes for the output of selected SIC industries

[1967=100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1980	1980			1981									
			Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June [1]	July	Aug.	Sept.	Oct.
3021	Rubber and plastic footwear (12/71 = 100)	177.9	182.0	182.4	182.3	182.8	183.4	183.6	183.6	184.0	184.1	184.7	185.3	185.2	185.0
3031	Reclaimed rubber (12/73 = 100)	184.7	184.0	184.1	186.7	190.4	190.4	187.6	187.7	187.7	r187.7	190.8	198.1	198.1	198.1
3079	Miscellaneous plastic products (6/78 = 100)	121.7	124.2	124.6	124.5	125.4	125.4	126.3	128.7	129.1	r129.6	129.0	129.7	130.0	130.5
3111	Leather tanning and finishing (12/77 = 100)	146.6	(2)	149.3	156.6	157.0	145.5	151.4	158.6	154.7	150.7	150.6	147.8	147.6	147.5
3142	House slippers (12/75 = 100)	149.1	153.5	158.2	154.9	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
3143	Men's footwear, except athletic (12/75 = 100)	159.8	161.6	162.4	162.4	164.8	166.5	167.6	168.7	168.9	r169.6	169.7	170.4	169.8	169.6
3144	Women's footwear, except athletic	213.5	217.1	217.1	217.1	217.8	220.2	218.7	218.7	219.3	r218.5	218.9	219.2	217.8	217.0
3171	Women's handbags and purses (12/75 = 100)	137.9	140.9	140.9	140.9	149.5	149.5	149.7	149.7	158.4	158.4	158.4	158.4	158.4	158.4
3211	Flat glass (12/71 = 100)	161.3	163.8	166.4	166.3	167.1	167.5	168.1	174.5	174.5	r174.6	177.1	180.2	180.2	180.1
3221	Glass containers	292.6	306.1	306.1	311.4	311.4	311.4	311.4	326.6	335.2	r335.2	334.6	334.7	334.7	334.7
3241	Cement, hydraulic	310.8	311.8	310.5	310.5	324.3	324.3	r324.4	332.4	332.3	r331.0	329.5	329.5	328.9	327.2
3251	Brick and structural clay tile	277.3	282.6	282.9	282.9	286.6	286.1	295.3	296.0	297.4	r298.5	299.8	299.9	300.9	300.8
3253	Ceramic wall and floor tile (12/75 = 100)	122.5	120.1	120.1	120.1	127.1	127.1	127.1	129.6	132.1	r132.1	129.6	129.6	137.7	137.7
3255	Clay refractories	273.6	280.2	280.7	280.7	291.5	305.2	308.1	308.6	311.0	r312.2	314.0	314.0	314.2	315.7
3259	Structural clay products, n.e.c.	202.7	204.9	205.0	205.1	209.5	212.8	213.0	212.7	223.9	r223.9	224.3	224.4	227.9	232.2
3261	Vitreous plumbing fixtures	234.8	241.5	242.6	245.0	244.7	248.9	249.4	252.0	252.5	255.6	258.7	259.5	258.9	258.9
3262	Vitreous china food utensils	317.3	327.4	327.4	327.4	327.4	327.4	328.0	328.2	336.6	336.6	336.6	336.6	336.8	336.8
3263	Fine earthenware food utensils	295.5	297.9	297.9	297.9	298.6	298.6	307.9	308.2	309.6	r309.6	309.1	309.1	313.3	313.3
3269	Pottery products, n.e.c. (12/75 = 100)	152.6	155.4	155.5	155.5	155.5	155.5	158.5	158.6	160.6	r160.7	160.6	160.6	161.7	161.7
3271	Concrete block and brick	257.3	259.4	259.4	259.4	264.1	265.0	263.2	267.4	271.2	271.2	271.3	274.0	274.2	274.0
3273	Ready-mixed concrete	279.9	282.7	282.8	282.9	294.8	295.4	296.0	298.5	299.4	301.7	300.5	299.9	299.5	299.7
3274	Lime (12/75 = 100)	157.7	160.8	160.8	161.8	165.7	171.7	172.6	172.4	172.6	r173.0	173.4	174.2	173.9	173.9
3275	Gypsum products	256.7	250.0	253.6	253.1	259.9	257.6	257.9	257.1	261.4	260.9	261.8	258.9	257.0	251.5
3291	Abrasive products (12/71 = 100)	212.6	218.8	220.2	220.6	222.8	221.7	223.1	232.7	233.2	r234.1	234.9	234.9	235.6	237.5
3297	Nonclay refractories (12/74 = 100)	161.1	167.8	167.5	167.6	172.4	177.5	178.9	178.9	186.6	r189.7	189.7	189.8	189.8	189.8
3312	Blast furnaces and steel mills	310.5	314.8	316.6	320.7	328.7	328.9	334.0	336.7	337.3	r338.2	349.6	349.5	350.3	353.1
3313	Electrometallurgical products (12/75 = 100)	117.7	117.3	117.3	117.3	119.9	120.0	120.0	120.8	120.6	120.7	121.2	121.5	121.4	125.4
3316	Cold finishing of steel shapes	284.0	288.1	288.8	293.3	302.8	303.1	306.1	308.2	308.2	r309.5	325.1	325.7	326.2	326.4
3317	Steel pipes and tubes	290.9	294.2	302.4	308.4	315.5	316.3	326.1	333.1	334.1	336.3	348.2	350.7	350.6	362.0
3321	Gray iron foundries (12/68 = 100)	282.5	289.7	290.1	290.7	295.2	296.1	295.6	297.0	298.4	r298.4	299.4	299.4	301.9	304.6
3333	Primary zinc	270.5	269.9	282.0	288.7	300.3	300.0	299.7	311.9	332.7	r335.1	331.3	349.5	351.5	332.9
3334	Primary aluminum	297.9	325.6	328.5	328.0	331.7	332.3	332.2	332.8	334.2	r332.5	336.2	336.5	336.4	335.8
3351	Copper rolling and drawing	227.5	222.0	222.9	222.8	218.7	215.3	211.8	213.1	212.6	r210.6	209.5	210.9	213.7	212.9
3353	Aluminum sheet plate and foil (12/75 = 100)	158.2	161.5	163.3	165.1	169.3	170.7	172.1	173.8	174.4	r176.1	178.2	178.2	178.7	180.7
3354	Aluminum extruded products (12/75 = 100)	167.7	173.2	176.3	176.4	176.8	177.1	177.3	180.6	180.7	180.8	181.1	181.3	181.2	181.3
3355	Aluminum rolling, drawing, n.e.c. (12/75 = 100)	146.2	150.7	151.2	151.1	155.3	157.1	157.2	157.3	157.4	r157.3	157.6	157.6	158.1	163.3
3411	Metal cans	291.6	297.9	297.2	297.3	302.1	303.0	304.7	304.7	304.7	304.7	305.6	306.9	307.4	307.2
3425	Hand saws and saw blades (12/72 = 100)	182.1	186.8	187.2	190.5	195.4	196.3	198.0	198.1	200.2	r200.2	302.8	203.8	204.2	204.5
3431	Metal sanitary ware	248.3	251.5	252.2	253.8	256.0	256.4	258.5	262.8	264.8	r265.2	266.9	267.1	267.5	267.7
3465	Automotive stampings (12/75 = 100)	136.9	140.2	140.9	141.2	143.0	143.9	144.2	145.0	145.0	r145.2	146.6	146.8	147.2	147.7
3482	Small arms ammunition (12/75 = 100)	145.6	145.8	146.3	160.9	157.9	157.8	157.2	157.8	157.8	r157.8	163.2	165.3	165.3	165.3
3493	Steel springs, except wire	230.3	233.0	233.3	234.3	238.4	239.2	239.5	241.2	241.7	r241.9	244.2	244.3	249.5	249.6
3494	Valves and pipe fittings (12/71 = 100)	230.0	235.8	236.9	238.3	240.2	242.1	244.8	247.6	247.9	r248.5	248.5	249.5	251.2	251.4
3498	Fabricated pipe and fittings	315.5	325.0	329.9	329.9	335.7	335.7	338.5	358.8	359.9	361.6	365.9	371.3	374.7	379.1
3519	Internal combustion engines, n.e.c.	275.4	285.2	289.1	289.9	298.2	299.4	302.6	306.0	306.2	r307.2	311.5	313.6	320.9	321.6
3531	Construction machinery (12/76 = 100)	141.1	146.0	146.6	147.5	150.0	151.4	152.6	154.4	155.3	r156.9	159.0	159.5	160.0	161.5
3532	Mining machinery (12/72 = 100)	258.5	266.0	268.0	270.0	272.5	273.5	276.2	279.5	280.0	r280.8	282.3	283.5	286.0	288.7
3533	Oilfield machinery and equipment	338.1	352.9	358.4	360.9	367.0	374.2	378.2	382.2	384.6	r390.3	393.3	403.1	408.7	413.3
3534	Elevators and moving stairways	239.3	248.3	248.8	249.5	250.3	250.3	250.3	251.2	251.2	251.2	251.3	252.9	254.6	257.1
3542	Machine tools, metal forming types (12/71 = 100)	279.5	286.8	287.4	292.0	297.5	298.0	301.9	303.0	304.5	r305.7	307.3	307.7	312.0	312.3
3546	Power driven hand tools (12/76 = 100)	132.2	136.6	136.7	137.9	142.6	144.9	145.2	146.4	147.0	147.1	148.1	148.5	148.6	148.8
3552	Textile machinery (12/69 = 100)	216.6	223.8	224.5	226.0	235.7	235.0	240.0	240.4	241.2	r244.4	245.0	245.3	247.0	248.1
3553	Woodworking machinery (12/72 = 100)	212.5	217.0	217.7	221.5	222.5	223.1	224.7	225.5	219.1	r219.7	233.6	224.2	225.3	226.9
3576	Scales and balances, excluding laboratory	215.0	226.3	226.9	217.9	220.5	221.1	224.2	230.2	230.2	r230.3	226.5	226.8	226.1	226.1
3592	Carburetors, pistons, rings, valves (6/76 = 100)	156.6	164.9	165.2	167.6	168.9	170.9	171.5	172.0	172.0	r176.5	180.6	181.1	181.9	185.2
3612	Transformers	184.9	193.9	193.0	193.3	194.9	197.1	204.3	206.0	207.8	209.6	212.6	215.3	215.9	216.2
3623	Welding apparatus, electric (12/72 = 100)	209.9	214.4	214.9	215.8	218.9	220.9	222.1	224.3	225.9	r227.2	227.4	228.8	230.8	231.8
3631	Household cooking equipment (12/75 = 100)	133.1	134.8	135.8	137.5	140.1	141.0	141.1	140.5	140.7	r141.0	140.4	141.1	141.2	141.6
3632	Household refrigerators, freezers (6/76 = 100)	121.4	124.1	125.1	125.1	127.5	127.5	127.6	129.4	129.5	r130.8	134.0	134.1	135.0	136.4
3633	Household laundry equipment (12/73 = 100)	162.0	166.1	166.6	167.4	169.8	170.2	170.9	173.5	173.9	r173.6	174.1	174.1	176.0	176.8
3635	Household vacuum cleaners	154.4	158.8	158.8	159.1	159.1	156.3	158.5	158.4	158.5	r158.6	152.0	152.2	152.2	154.5
3636	Sewing machines (12/75 = 100)	129.1	130.3	130.3	130.3	130.3	130.3	131.9	131.8	153.8	r153.8	153.1	153.1	153.1	155.4
3641	Electric lamps	260.3	268.7	270.2	266.2	265.8	271.2	272.6	275.5	275.1	r276.5	275.3	280.1	283.2	285.9
3644	Noncurrent-carrying wiring devices (12/72 = 100)	219.7	221.8	223.7	229.2	233.1	236.3	240.6	242.6	242.8	r251.5	254.7	256.2	261.0	261.2
3646	Commercial lighting fixtures (12/75 = 100)	139.3	142.8	143.1	144.7	145.1	148.0	151.4	156.1	156.2	r156.2	154.9	155.8	157.2	156.8
3648	Lighting equipment, n.e.c. (12/75 = 100)	139.9	143.3	144.7	145.0	146.3	146.8	152.7	153.2	153.3	153.7	153.8	161.3	161.5	161.4
3671	Electron tubes receiving type	251.8	264.6	264.8	272.7	284.3	284.4	285.0	285.0	285.1	r312.5	327.3	327.5	327.5	327.6
3674	Semiconductors and related devices	90.7	91.8	91.2	91.6	91.1	90.8	91.3	91.2	90.6	r90.3	90.0	89.6	89.5	89.2
3675	Electronic capacitors (12/75 = 100)	162.7	170.1	170.2	170.3	170.3	171.1	173.2	168.7	168.5	r171.2	168.6	168.0	168.9	172.4
3676	Electronic resistors (12/75 = 100)	134.2	137.7	137.8	137.8	139.0	139.9	139.9	140.0	140.8	141.2	141.9	142.2	142.6	142.6
3678	Electronic connectors (12/75 = 100)	148.1	149.7	149.7	149.7	152.2	153.5	154.5	154.4	153.7	r154.3	154.5	155.1	155.3	156.3
3692	Primary batteries, dry and wet	176.5	176.9	177.0	176.9	179.0	183.3	184.2	182.6	181.0	181.0	181.6	182.7	183.4	182.7
3711	Motor vehicles and car bodies (12/75 = 100)	136.7	144.5	144.6	144.0	145.3	145.7	144.2	148.4	149.6	r150.3	150.5	149.7	143.2	158.3
3942	Dolls (12/75 = 100)	127.4	128.3	128.3	128.3	130.7	132.3	132.4	132.4	130.9	r130.9	130.6	130.6	130.6	130.6
3944	Games, toys, and children's vehicles	205.2	207.0	207.0	207.1	213.9	220.2	221.2	221.2	221.8	r221.9	219.9	219.9	220.1	220.1
3955	Carbon paper and inked ribbons (12/75 = 100)	132.8	135.0	135.0	135.0	133.0	136.4	136.4	136.9	136.9	140.4	140.4	140.6	140.6	140.6
3995	Burial caskets (6/76 = 100)	131.2	132.9	132.9	135.0	135.0	135.0	138.0	138.1	138.3	138.3	138.3	140.6	143.4	143.4
3996	Hard surface floor coverings (12/75 = 100)	143.7	146.6	146.6	146.6	148.6	148.6	148.7	151.5	151.5	151.5	153.3	153.6	153.7	153.7

[1] Data for June 1981 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.

[2] Not available.

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.

The use of the term "man hours" to identify the labor component of productivity and costs, in tables 31 through 34, has been discontinued. **Hours of all persons** is now used to describe the labor input of payroll workers, self-employed persons, and unpaid family workers. **Output per all-employee hour** is now used to describe labor productivity in nonfinancial corporations where there are no self-employed.

Notes on the data

In the private 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.

Beginning with the September 1976 issue of the *Review,* tables 31–34 were revised to reflect changeover to the new series—private business sector and nonfarm business sector—which differ from the previously published total private economy and nonfarm sector in that output imputed for owner-occupied dwellings and the household and institutions sectors, as well as the statistical discrepancy, are omitted. For a detailed explanation, see J. R. Norsworthy and L. J. Fulco, "New sector definitions for productivity series," *Monthly Labor Review,* October 1976, pages 40–42.

31. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years, 1950–80

[1977=100]

Item	1950	1955	1960	1965	1970	1973	1974	1975	1976	1977	1978	1979	1980
Private business sector:													
Output per hour of all persons	50.3	58.2	65.1	78.2	86.1	94.8	92.7	94.8	97.9	100.0	99.8	99.5	99.3
Compensation per hour	20.0	26.3	33.9	41.7	58.2	71.3	78.0	85.5	92.9	100.0	108.4	119.3	r131.5
Real compensation per hour	50.4	59.6	69.4	80.0	90.8	97.3	95.9	96.3	98.8	100.0	100.7	99.6	r96.7
Unit labor cost	39.8	45.2	52.1	53.3	67.6	75.2	84.2	90.2	94.8	100.0	108.6	119.9	r132.4
Unit nonlabor payments	43.5	47.8	50.8	57.8	63.4	75.6	78.9	90.7	94.4	100.0	105.1	110.9	r118.3
Implicit price deflator	41.0	46.1	51.7	54.8	66.2	75.3	82.4	90.4	94.7	100.0	107.4	116.9	127.6
Nonfarm business sector:													
Output per hour of all persons	56.2	62.7	68.2	80.4	86.7	95.3	93.1	95.0	98.1	100.0	99.8	99.1	98.8
Compensation per hour	21.8	28.3	35.6	42.8	58.6	71.7	78.4	86.0	93.0	100.0	108.5	119.0	130.8
Real compensation per hour	55.0	63.9	73.0	82.2	91.5	97.7	96.4	96.8	99.0	100.0	100.7	99.3	96.2
Unit labor cost	38.8	45.1	52.3	53.2	67.6	75.2	84.3	90.5	94.8	100.0	108.7	120.0	132.4
Unit nonlabor payments	42.8	47.9	50.5	58.2	64.0	71.9	76.1	88.9	94.0	100.0	103.6	108.5	r117.6
Implicit price deflator	40.2	46.0	51.7	54.9	66.4	74.1	81.6	89.9	94.5	100.0	107.0	116.2	127.4
Nonfinancial corporations:													
Output per hour of all employees	(1)	(1)	66.3	79.9	85.4	94.5	91.3	94.4	97.4	100.0	100.4	100.4	101.0
Compensation per hour	(1)	(1)	36.3	43.0	58.3	70.8	77.6	85.5	92.5	100.0	108.2	118.7	130.7
Real compensation per hour	(1)	(1)	74.2	82.6	91.0	96.5	95.4	96.3	98.5	100.0	100.5	99.1	96.2
Unit labor cost	(1)	(1)	54.7	53.8	68.3	74.9	85.1	90.6	95.0	100.0	107.8	118.2	129.4
Unit nonlabor payments	(1)	(1)	54.6	60.8	63.1	70.7	75.7	90.9	95.0	100.0	103.8	108.3	117.3
Implicit price deflator	(1)	(1)	54.7	56.2	66.5	73.4	81.8	90.7	95.0	100.0	106.4	114.8	125.2
Manufacturing:													
Output per hour of all persons	49.5	56.5	60.1	74.6	79.2	93.1	90.9	93.5	97.7	100.0	100.9	102.0	101.7
Compensation per hour	21.5	28.8	36.7	42.9	57.6	69.1	76.4	85.5	92.4	100.0	108.2	118.8	131.6
Real compensation per hour	54.1	65.2	75.1	82.3	89.9	94.2	93.9	96.3	98.3	100.0	100.5	99.2	r96.7
Unit labor cost	43.4	51.0	61.1	57.4	72.7	74.2	84.1	91.4	94.6	100.0	107.3	116.5	129.4
Unit nonlabor payments	55.1	59.4	62.0	70.3	66.0	71.6	70.4	88.5	95.1	100.0	104.7	105.7	r108.7
Implicit price deflator	46.8	53.4	61.3	61.2	70.7	73.4	80.1	90.6	94.7	100.0	106.5	113.4	123.4

[1] Not available.

r = revised.

32. Annual changes in productivity, hourly compensation, unit costs, and prices, 1970–80

Item	Year											Annual rate of change	
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1950-80	1960-80
Private business sector:													
Output per hour of all persons	0.9	3.6	3.5	2.7	2.3	2.3	3.3	2.1	0.2	0.3	0.2	2.5	2.2
Compensation per hour	7.4	6.6	6.5	8.0	9.4	9.6	8.6	7.7	8.4	10.1	r10.2	6.0	7.1
Real compensation per hour	1.4	2.2	3.1	1.7	1.4	0.4	2.7	1.2	0.7	1.1	3.0	2.4	1.9
Unit labor cost	6.4	2.9	2.9	5.2	11.9	7.2	5.1	5.5	8.6	10.4	r10.4	3.5	4.8
Unit nonlabor payments	0.7	7.6	4.5	5.9	4.4	15.0	4.1	5.9	5.1	5.5	r6.6	3.2	4.4
Implicit price deflator	4.5	4.4	3.4	5.4	9.4	9.7	4.7	5.6	7.4	8.8	9.2	3.4	4.7
Nonfarm business sector:													
Output per hour of all persons	0.3	3.3	3.7	2.5	−2.4	2.1	3.2	2.0	0.2	0.7	−0.3	2.1	1.9
Compensation per hour	7.0	6.6	6.7	7.6	9.4	9.6	8.1	7.6	8.5	9.7	9.9	5.7	6.8
Real compensation per hour	1.0	2.2	3.3	1.3	−1.4	0.4	2.2	1.0	0.7	1.4	−3.2	2.1	1.6
Unit labor cost	6.6	3.1	2.8	4.9	12.1	7.4	4.7	5.5	8.7	10.4	10.3	3.5	4.8
Unit nonlabor payments	1.1	7.4	3.2	1.3	5.9	16.7	5.7	6.4	3.6	4.8	r8.4	3.1	4.2
Implicit price deflator	4.8	4.5	3.0	3.7	10.1	10.3	5.1	5.8	7.0	8.6	9.7	3.4	4.6
Nonfinancial corporations:													
Output per hour of all employees	0.4	4.8	3.0	2.6	−3.4	3.4	3.2	2.7	0.4	0.0	0.6	(1)	2.1
Compensation per hour	6.8	6.5	5.8	7.7	9.7	10.1	8.2	8.1	8.2	9.7	10.1	(1)	6.7
Real compensation per hour	0.8	2.1	2.5	1.4	−1.1	0.9	2.3	1.5	0.5	−1.4	−3.0	(1)	1.5
Unit labor cost	6.3	1.6	2.8	4.9	13.6	6.5	4.9	5.3	7.8	9.7	9.5	(1)	4.6
Unit nonlabor payments	0.5	7.4	2.7	1.5	7.1	20.1	4.6	5.2	3.8	4.4	8.3	(1)	3.8
Implicit price deflator	4.4	3.5	2.8	3.8	11.4	10.9	4.8	5.2	6.4	7.9	9.1	(1)	4.3
Manufacturing:													
Output per hour of all persons	−0.2	6.1	5.0	5.4	−2.4	2.9	4.4	2.4	0.9	1.1	0.3	2.6	2.7
Compensation per hour	6.8	6.1	5.4	7.2	10.6	11.9	8.0	8.3	8.2	9.8	10.7	5.6	6.7
Real compensation per hour	0.8	1.8	2.0	0.9	−0.3	2.5	2.1	1.7	0.5	1.3	−2.5	2.0	1.5
Unit labor cost	7.0	0.0	0.3	1.7	13.3	8.8	3.4	5.7	7.3	8.6	r11.0	2.9	3.8
Unit nonlabor payments	−2.5	11.2	0.8	−3.3	−1.8	25.9	7.4	5.2	4.7	0.9	r2.9	r2.1	r2.7
Implicit price deflator	4.3	3.1	0.5	0.3	9.0	13.1	4.6	5.6	6.5	6.4	8.8	r2.7	r3.5

[1] Not available.

r = revised.

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

[1977 = 100]

Item	Annual average		Quarterly indexes										
			1979				1980				1981		
	1979	1980	I	II	III	IV	I	II	III	IV	I	II	III
Private business sector:													
Output per hour of all persons	99.5	99.3	99.7	99.7	99.4	99.1	99.5	99.1	99.4	99.1	100.3	r101.1	p100.7
Compensation per hour	119.3	r131.5	115.0	118.1	120.7	123.2	126.4	130.1	133.1	135.9	139.7	143.2	p146.4
Real compensation per hour	99.6	r96.7	100.6	100.3	99.2	98.0	96.7	96.5	96.9	96.0	96.1	96.8	p96.3
Unit labor cost	119.9	r132.4	115.4	118.5	121.4	124.3	127.0	131.3	133.9	137.0	139.4	r141.6	p145.5
Unit nonlabor payments	110.9	r118.3	109.6	110.4	111.5	112.2	115.2	116.0	119.7	122.7	127.6	r129.3	p131.5
Implicit price deflator	116.9	127.6	113.4	115.8	118.1	120.2	123.0	126.1	129.1	132.2	135.4	r137.5	p140.7
Nonfarm business sector:													
Output per hour of all persons	99.1	98.8	99.5	99.1	98.9	98.8	98.9	98.2	99.0	99.0	100.0	r100.4	p99.8
Compensation per hour	119.0	130.8	114.9	117.7	120.2	123.0	126.0	129.4	132.3	135.4	139.1	142.4	p145.6
Real compensation per hour	99.3	96.2	100.4	100.0	98.8	97.8	96.4	96.0	96.3	95.6	95.7	96.3	p95.7
Unit labor cost	120.0	132.4	115.4	118.7	121.5	124.4	127.4	131.8	133.6	136.8	139.1	r141.9	p145.9
Unit nonlabor payments	108.5	r117.6	107.1	107.7	109.2	110.1	113.9	115.1	119.2	122.0	127.8	r128.7	p131.3
Implicit price deflator	116.2	127.4	112.6	115.1	117.4	119.7	122.9	126.3	128.8	131.9	135.3	r137.5	p141.1
Nonfinancial corporations:													
Output per hour of all employees	100.4	101.0	100.6	100.7	100.5	99.9	100.2	100.1	101.8	101.8	103.3	r103.9	(1)
Compensation per hour	118.7	130.7	114.5	117.6	120.1	122.7	125.7	129.3	132.5	135.5	139.2	142.3	(1)
Real compensation per hour	99.1	96.2	100.1	99.9	98.7	97.5	96.2	95.9	96.5	95.7	95.7	96.2	(1)
Total unit costs	116.8	129.7	112.2	115.3	118.2	121.3	124.2	129.2	131.1	134.1	136.0	r138.7	(1)
Unit labor cost	118.2	129.4	113.8	116.8	119.5	122.8	125.4	129.1	130.2	133.1	134.7	r137.0	(1)
Unit nonlabor costs	112.7	130.2	107.8	111.2	114.6	117.2	120.9	129.3	133.8	136.9	139.5	r143.6	(1)
Unit profits	99.0	90.2	105.6	100.7	97.5	92.2	95.5	83.4	89.1	92.4	106.8	101.2	(1)
Implicit price deflator	114.8	125.2	111.5	113.7	115.9	118.1	121.0	124.1	126.4	129.5	132.7	r134.7	(1)
Manufacturing:													
Output per hour of all persons	102.0	101.7	101.5	102.3	102.0	102.1	102.0	r100.7	r100.7	r103.2	r104.1	r105.1	p105.5
Compensation per hour	118.8	131.6	114.5	118.6	119.8	122.3	125.4	130.0	133.9	137.3	140.9	r144.6	p148.1
Real compensation per hour	99.2	r96.7	100.2	100.7	98.5	97.2	95.9	96.4	97.5	97.0	96.9	r97.8	p97.3
Unit labor cost	116.5	129.4	112.9	115.9	117.5	119.8	122.9	r129.1	r133.0	r133.0	r135.4	r137.5	p140.3

[1] Not available.

r = revised.

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

[1977=100]

Item	Quarterly percent change at annual rate						Percent change from same quarter a year ago					
	I 1980 to II 1980	II 1980 to III 1980	III 1980 to IV 1980	IV 1980 to I 1981	I 1981 to II 1981	II 1981 to III 1981	II 1979 to II 1980	III 1979 to III 1980	IV 1979 to IV 1980	I 1980 to I 1981	II 1980 to II 1981	III 1980 to III 1981
Private business sector:												
Output per hour of all persons	−1.8	1.3	−1.1	4.6	r3.5	p−1.9	−0.6	0.0	−0.0	0.7	r2.1	p1.3
Compensation per hour	12.3	9.5	8.6	11.8	10.4	p9.3	10.1	10.3	10.3	10.5	10.1	p10.0
Real compensation per hour	−0.7	1.6	−3.8	0.4	r3.2	p−2.4	−3.8	−2.3	−2.0	−0.7	0.3	p−0.7
Unit labor costs	14.4	8.1	9.8	6.9	r6.6	p11.4	10.8	10.3	10.3	9.7	r7.8	p8.6
Unit nonlabor payments	2.6	13.7	10.2	17.2	r5.3	p6.8	5.1	7.4	9.3	10.8	r11.5	p9.8
Implicit price deflator	10.5	9.8	9.9	10.0	r6.2	p9.9	9.0	9.4	10.0	10.1	r9.0	p9.0
Nonfarm business sector:												
Output per hour of all persons	−2.9	3.6	−0.2	4.3	r1.4	p−2.2	−1.0	0.1	−0.1	1.1	r2.2	p0.8
Compensation per hour	11.3	9.0	9.8	11.6	9.6	p9.4	9.9	10.1	10.1	10.4	10.0	p10.1
Real compensation per hour	−1.6	1.2	−2.7	−0.2	2.4	p−2.2	−4.0	−2.5	−2.2	−0.8	0.2	p−0.6
Unit labor costs	14.6	5.3	10.1	7.0	r8.1	p11.9	11.0	9.9	9.9	9.2	r7.6	p9.3
Unit nonlabor payments	4.2	15.0	9.9	20.3	r3.0	p8.5	6.9	9.1	10.8	12.2	11.8	p10.2
Implicit price deflator	11.3	8.2	10.0	11.0	r6.5	p10.8	9.7	9.6	10.2	10.1	r8.9	p9.6
Nonfinancial corporations:												
Output per hour of all employees	−0.5	6.7	−0.0	6.3	r2.2	(1)	−0.5	1.3	1.9	3.1	r3.8	(1)
Compensation per hour	12.0	10.2	9.4	11.4	r9.3	(1)	9.9	10.3	10.4	10.8	10.1	(1)
Real compensation per hour	−1.0	2.2	−3.1	−0.0	2.1	(1)	−3.9	−2.2	−1.9	−0.5	0.3	(1)
Total unit costs	17.0	6.2	9.4	5.6	r8.4	(1)	12.0	11.0	10.5	9.5	r7.4	(1)
Unit labor costs	12.6	3.2	9.4	4.8	r7.0	(1)	10.5	8.9	8.4	7.4	r6.1	(1)
Unit nonlabor costs	30.6	14.7	9.5	7.9	r12.3	(1)	16.3	16.8	16.8	15.4	r11.1	(1)
Unit profits	−41.9	30.3	15.7	77.9	−13.9	(1)	−17.2	−8.6	0.3	11.8	r23.3	(1)
Implicit price deflator	10.5	7.9	9.9	10.4	r6.2	(1)	9.1	9.1	9.6	9.7	r8.6	(1)
Manufacturing:												
Output per hour of all persons	r−4.9	r0.0	r10.4	r3.3	r4.1	p1.4	r−1.6	r−1.3	r1.1	r2.1	r4.4	p4.8
Compensation per hour	15.5	12.7	10.5	11.1	r10.8	p10.0	9.6	11.7	12.2	12.4	r11.3	p10.6
Real compensation per hour	2.1	4.5	−2.2	−0.3	r3.5	p−1.7	−4.3	r−1.0	−0.3	1.0	r1.4	p−0.2
Unit labor costs	r21.4	r2.7	r0.1	r7.5	r6.4	p8.4	11.3	13.2	r11.0	r10.2	r6.6	p5.5

[1] Not available.

r = revised.

LABOR-MANAGEMENT DATA

MAJOR COLLECTIVE BARGAINING DATA are obtained from contracts on file at the Bureau of Labor Statistics, direct contact with the parties, and from secondary sources. Additional detail is published in *Current Wage Developments,* a monthly periodical of the Bureau. Data on work stoppages are based on confidential responses to questionnaires mailed by the Bureau of Labor Statistics to parties involved in work stoppages. Stoppages initially come to the attention of the Bureau from reports of Federal and State mediation agencies, newspapers, and union and industry publications.

Definitions

Data on wage changes apply to private nonfarm industry agreements covering 1,000 workers or more. Data on wage and benefit changes *combined* apply only to those agreements covering 5,000 workers or more. **First-year wage settlements** refer to pay changes going into effect within the first 12 months after the effective date of the agreement. **Changes over the life of the agreement** refer to total agreed upon settlements (exclusive of potential cost-of-living escalator adjustments) expressed at an average annual rate. **Wage-rate changes** are expressed as a percent of straight-time hourly earnings, while **wage and benefit changes** are expressed as a percent of total compensation.

Effective wage-rate adjustments going into effect in major bargaining units measure changes actually placed into effect during the reference period, whether the result of a newly negotiated increase, a deferred increase negotiated in an earlier year, or as a result of a cost-of-living escalator adjustment. Average adjustments are affected by workers receiving no adjustment, as well as by those receiving increases or decreases.

Work stoppages include all known strikes or lockouts involving six workers or more and lasting a full shift or longer. Data 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.

35. Wage and benefit settlements in major collective bargaining units, 1976 to date

[In percent]

Sector and measure	Annual average					Quarterly average								
	1976	1977	1978	1979	1980	1979		1980				1981 p		
						III	IV	I	II	III	IV	I r	II r	III
Wage and benefit settlements, all industries:														
First-year settlements	8.5	9.6	8.3	9.0	10.4	9.0	8.5	8.8	10.2	11.4	8.5	10.3	11.9	12.8
Annual rate over life of contract	6.6	6.2	6.3	6.6	7.1	6.1	6.0	6.7	7.4	7.2	6.1	7.6	10.9	9.3
Wage rate settlements, all industries:														
First-year settlements	8.4	7.8	7.6	7.4	9.5	6.8	6.3	8.2	9.1	10.5	8.3	9.2	11.9	12.1
Annual rate over life of contract	6.4	5.8	6.4	6.0	7.1	5.1	5.3	6.5	7.3	7.4	6.5	7.8	9.7	9.4
Manufacturing:														
First-year settlements	8.9	8.4	8.3	6.9	7.4	6.3	5.6	7.2	6.7	8.4	7.8	9.4	8.0	9.8
Annual rate over life of contract	6.0	5.5	6.6	5.4	5.4	4.7	4.2	5.7	5.1	5.6	5.8	7.0	6.5	7.6
Nonmanufacturing (excluding construction):														
First-year settlements	8.6	8.0	8.0	7.6	9.5	9.4	7.8	9.4	10.3	9.5	8.2	8.6	11.8	10.4
Annual rate over life of contract	7.2	5.9	6.5	6.2	6.6	6.5	7.4	7.6	8.5	5.9	6.8	7.8	9.1	8.5
Construction:														
First-year settlements	6.1	6.3	6.5	8.8	13.6	9.7	7.5	10.8	12.2	15.4	14.3	11.4	13.2	17.6
Annual rate over life of contract	6.2	6.3	6.2	8.3	11.5	8.5	7.6	9.1	10.4	13.0	12.0	10.3	11.1	12.8

r = revised.

36. Effective wage adjustments going into effect in major collective bargaining units, 1976 to date

[In percent]

Sector and measure	Average annual changes					Average quarterly changes								
	1976	1977	1978	1979	1980	1979		1980				1981 p		
						III	IV	I	II	III	IV	I	II	III
Total effective wage rate adjustment, all industries	8.1	8.0	8.2	9.1	9.9	3.3	1.6	1.6	3.3	3.5	1.3	1.2	2.8	3.0
Change resulting from—														
Current settlement	3.2	3.0	2.0	3.0	3.6	1.0	.5	.4	1.0	1.7	.5	.1	r1.0	.5
Prior settlement	3.2	3.2	3.7	3.0	3.5	1.0	.4	.5	1.4	1.2	.3	.6	r1.3	1.5
Escalator provision	1.6	1.7	2.4	3.1	2.8	1.2	.7	.7	.8	.7	.6	.6	r.6	1.0
Manufacturing	8.5	8.4	8.6	9.6	10.2	3.2	2.4	2.0	3.4	2.9	1.7	r1.5	r1.8	2.6
Nonmanufacturing	7.7	7.6	7.9	8.8	9.7	3.4	1.0	1.3	3.2	4.0	1.1	r1.0	r3.6	3.3

NOTE: Because of rounding and compounding, the sums of individual items may not equal totals. r = revised.

37. Work stoppages, 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 (thousands)	In effect during month (thousands)	Number (thousands)	Percent of estimated working time
1947	3,693		2,170		34,600	.30
1948	3,419		1,960		34,100	.28
1949	3,606		3,030		50,500	.44
1950	4,843		2,410		38,800	.33
1951	4,737		2,220		22,900	.18
1952	5,117		3,540		59,100	.48
1953	5,091		2,400		28,300	.22
1954	3,468		1,530		22,600	.18
1955	4,320		2,650		28,200	.22
1956	3,825		1,900		33,100	.24
1957	3,673		1,390		16,500	.12
1958	3,694		2,060		23,900	.18
1959	3,708		1,880		69,000	.50
1960	3,333		1,320		19,100	.14
1961	3,367		1,450		16,300	.11
1962	3,614		1,230		18,600	.13
1963	3,362		941		16,100	.11
1964	3,655		1,640		22,900	.15
1965	3,963		1,550		23,300	.15
1966	4,405		1,960		25,400	.15
1967	4,595		2,870		42,100	.25
1968	5,045		2,649		49,018	.28
1969	5,700		2,481		42,869	.24
1970	5,716		3,305		66,414	.37
1971	5,138		3,280		47,589	.26
1972	5,010		1,714		27,066	.15
1973	5,353		2,251		27,948	.14
1974	6,074		2,778		47,991	.24
1975	5,031		1,746		31,237	.16
1976	5,648		2,420		37,859	.19
1977	5,506		2,040		35,822	.17
1978	4,230		1,623		36,922	.17
1979	4,827		1,727		34,754	.15
1980: September	436	813	153	289	3,576	.18
October	349	722	90	224	2,530	.12
November	205	532	53	126	1,440	.09
December	90	380	19	77	1,228	.06
1981 [P]: January	253	297	50	68	614	.03
February	347	517	90	136	647	.04
March	314	545	271	336	1,419	.07
April	371	560	101	273	5,117	.25
May	473	688	152	383	5,857	.31
June	421	682	186	499	3,891	.19
July	391	659	127	190	2,015	.10
August	310	596	[r] 72	[r] 148	[r] 1,775	[r] .09
September	358	565	47	109	1,468	.07

r = revised

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INDEX OF VOLUME 104

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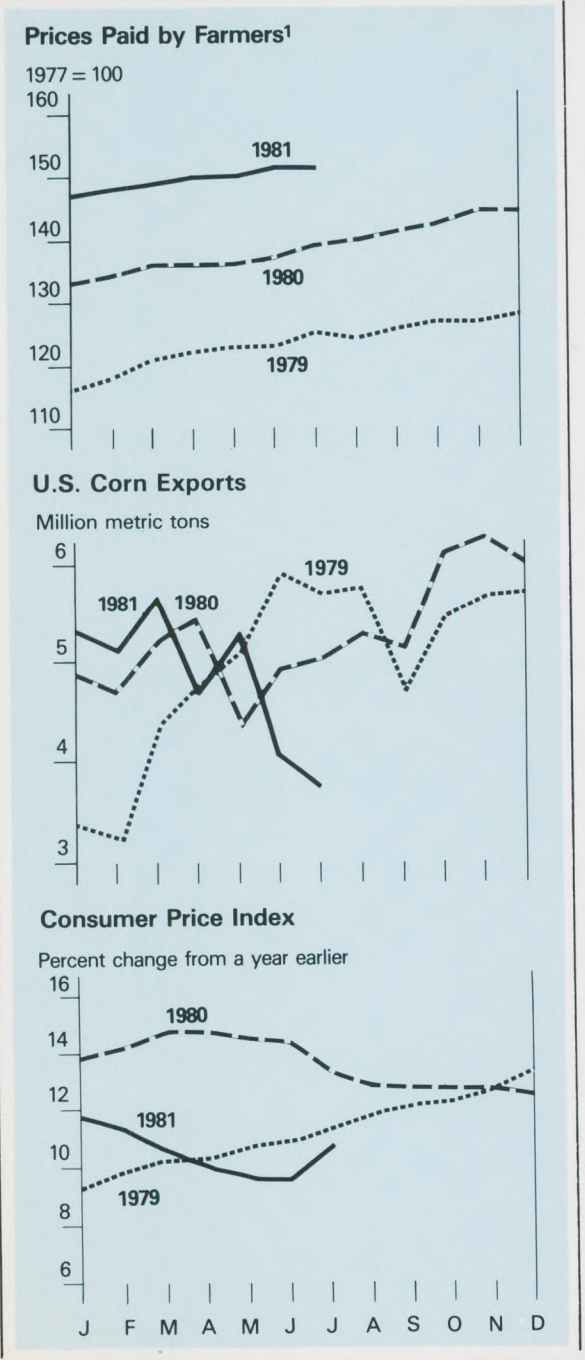

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