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In this issue:
Job creation in industry,
Automation and the future.





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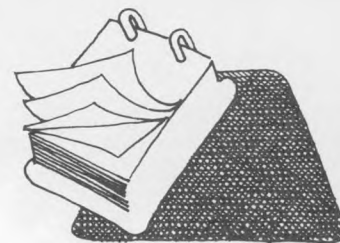
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Labor Month In Review



JOBS FOR COLLEGE GRADS. The Bureau of Labor Statistics published a report on the job outlook for college graduates in the 1980's. Here are excerpts from the article by Jon Sargent in the summer issue of *Occupational Outlook Quarterly*.

Supply. The number of bachelor's degrees awarded increased from 502,000 during the 1964-65 school year to 929,000 during the 1979-80 school year, an increase of more than 85 percent. The number of bachelor's degrees awarded annually is expected to increase slowly during the early 1980's, but as the baby-boom cohort passes out of the typical ages of college attendance, the number of degrees granted annually is expected to fall. This decline should be softened, however, by continued increases in college attendance by older workers. By 1990, the number of bachelor's degrees awarded will settle back to about the 1980 level. On the average, however, slightly more bachelor's degrees will be awarded annually during the 1980-90 period than in 1980.

Women college graduates were increasingly likely to be members of the labor force during the 1970's. The proportion of women with college degrees who were either employed or looking for work climbed from 59.6 percent in 1970 to 68.4 percent in 1980, continuing a long-term trend. This increase primarily stemmed from the growing tendency of married women graduates between the ages of 25 and 44 to combine work with family responsibilities. The proportion of this group in the labor force grew from 49 percent in 1970 to 69 percent in 1980; the proportions of other women graduates in the labor force increased only slightly over the period. The growing labor force commitment of women college graduates increased the impact of the baby-boom generation on the labor force. Their numbers were unprecedented, as was the propor-

tion who sought jobs.

During the 1980's, the upward trend in the labor force participation rate of women is expected to continue, offsetting somewhat the impact of fewer people entering their twenties. Labor force growth will nevertheless slow. Women will account for about two-thirds of the labor force growth between 1980 and 1990.

Demand. During the 1970's, employment in professional and technical, managerial, and nonretail sales jobs—occupations generally requiring substantial proportions of workers with a degree—increased 40 percent, compared to about 28-percent growth for all workers. Between 1980 and 1990, employment in these occupations is projected to grow more slowly. They are expected to increase between 18 and 25 percent, depending on varying assumptions about growth in the economy, about as fast as the average for all occupations in the 1980's.

Educational upgrading was projected to occur in professional and technical, managerial and administrative, and nonretail sales occupations, continuing the trend toward greater complexity and skill requirements for many of these jobs, as well as employers' responses to a greater supply. A constant, but small, proportion of the jobs in other occupations was projected to require a college degree.

Outlook. A surplus of between 2 and 3 million college graduates is expected to enter the labor force during the 1980's. If the economy grows as slowly as it did during the 1970's, the surplus would be the higher figure, an average annual surplus of about 300,000 college graduates—about 1 graduate in 5, just as in the 1970's. If the economy grows more rapidly than it did in the 1970's, the average surplus would be about 200,000 college graduates—

about 1 in 7—each year.

Even with more rapid growth, however, the job market experienced by college graduates in the 1980's is unlikely to be more favorable than in the 1970's. In 1980, a surplus of college graduates estimated at 3.8 million was already in the labor force, either employed in jobs that did not require their level of education or unemployed. Of course, many of these have since begun satisfying careers in occupations that do not require 4 years of college education. Others, however, can be expected to compete for jobs that more fully utilize their education. The job market will be more competitive to the extent that this pool of underemployed 1970's entrants competes with 1980's entrants for job openings requiring a college degree.

Like college graduates in the 1970's, future college graduates cannot be assured that they will find jobs in the occupations of their choice. Many may experience periods of unemployment, have to relocate to other areas of the country, or job-hop before finding one that satisfies them. As in the 1970's, some may have to compete with nongraduates for the more desirable jobs not previously filled by graduates, but in many cases, their additional education will prove to be an advantage. Even though a college degree may not be required, many employers prefer to hire the best educated candidate who is qualified for a job. In many cases, a college graduate will also have an advantage in gaining promotion in non-college careers over those without degrees. Many graduates who are forced to start work in jobs for which they are overqualified nevertheless may gain useful experience that will be an advantage in competing later for more challenging jobs.

The summer *Occupational Outlook Quarterly* is available from BLS regional offices (see inside front cover) at \$2.75 per copy. □

Tracking job growth in private industry

Small, young firms are very important to the process of job generation, according to three recent studies of the behavior of individual employers

RICHARD GREENE

The job generation process has been one of the most heavily debated public policy issues of recent years. Governments at the Federal, State, and local levels have invested heavily in programs designed to create jobs—including urban and general economic development plans, tax credits and incentives, and public sector employment programs—and to improve the ability of individuals to compete effectively in the labor market by providing basic education and training in new and expanding fields. Much current interest centers on the problem of matching unemployed workers from declining industries to opportunities in areas with expanding manpower needs, such as high technology and defense-related activities. An interesting legislative approach, the Small Business Research Innovation Act,¹ is a proposal to set aside Federal research money for small businesses in order to spur technological innovation and create new jobs. The success of efforts to increase employment through economic policy hinges on the ability to understand the job creation process, identify the job creators, and develop policy initiatives that enhance their potential.

Aggregate data on employment levels and changes by industry and geographic area provide meaningful information on overall labor market trends, but are limited for the study of job creation in that they essentially portray net results. The employment changes reported

monthly by the Bureau of Labor Statistics are the result of many thousands of production-function decisions made by individual employers, based on the relationship between their particular output and labor requirements. To understand the process of job creation, it is necessary to go beyond the aggregated data, and examine the multitude of business decisions at the establishment level.

This article summarizes the findings and methodology of some of the recent innovative labor market studies of this type in the private sector. Emphasis is placed on the microdata-based study of the job creation process under the direction of David Birch, director of the Massachusetts Institute of Technology (MIT) Program on Neighborhood and Regional Change.² Similar studies by the Institute of Urban and Regional Development of the University of California at Berkeley, under the direction of Michael B. Teitz,³ and by the Brookings Institution⁴ will also be summarized. These efforts, with appropriate refinement and extension, have the potential to improve significantly the body of labor market information used to guide the development of economic policy in this country.

The MIT program

David Birch of MIT has developed a theoretically simple approach to the analysis of the job creation process, based on the employment histories of nearly 6 million individual employers. Each firm in the MIT data base is characterized on the basis of location, size of employment, parent company affiliation, industry, and

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age. By comparing changes in these characteristics over time, Birch was able to trace in some detail the path of economic transformation of individual firms. By aggregating the changes in these characteristics for all establishments in a given sector or area, he was able to describe the overall labor market changes in that sector or area and, most importantly, how these changes occurred.

Some highlights:

- Overall employment change in a private-sector labor market is the result of:
 - Births of new firms
 - Expansions of existing firms
 - Firms going out of business
 - Firms reducing their work forces
 - Firms moving their places of business
- The sum of the flows causing job losses (concerns going out of business or reducing their work forces) is nearly the same in all areas. The job loss rate averages about 8 percent annually.
- The job loss rate is quite high. Every area loses about 50 percent of its jobs every 5 years.
- Differences in net employment growth are largely the result of differences in the rates at which job losses are replaced. This replacement rate varies greatly from area to area.
- There are significant differences in the rates at which net new jobs are generated in various parts of the country.
- The establishments generating new jobs tend to be:
 - *Small*. About two-thirds of all net new jobs between 1969 and 1976 were created by firms with 20 or fewer employees.
 - *Young*. About 80 percent of all "replacement" jobs between 1969 and 1976 were generated by establishments in business 4 years or less.
 - *Volatile*. Job generators tend to move through periods of expansion and retrenchment as they grow.
- Virtually none of the difference in the job generation capability of labor markets is due to firms moving their staffs and physical plants to different areas. Few businesses relocate, and when they do, they move short distances.

The MIT studies are basically a longitudinal analysis of the individual establishment data collected by Dun and Bradstreet (D&B). The D&B files are based on establishment reports of all businesses with commercial credit ratings. The data are used by D&B for its credit rating operation, but are commercially available to other enterprises for market research, mailing list preparation, billing, and associated activities. D&B collects many useful economic observations, including the year the estab-

lishment started, location, employment, sales, major industry, and any branch or subsidiary relationships. The information is collected by a full-time staff of 1,700 reporters, assisted by 500 part-time employees.

Files containing all D&B establishments for the years 1969, 1972, 1974, and 1976 were used by the MIT project group to build a data base. A micro history of each employer was developed by matching the firms from year to year by the unique identifying number assigned by D&B. (That number stays the same as long as the establishment is in the file, regardless of any change in location, size, or industry.) This economic history then allows a detailed analysis of changes in employment, location, corporate affiliation, and life cycles. When the data are aggregated on the basis of various characteristics, it is possible to identify the types of firms that created the greatest number of jobs.

Any review of the MIT findings must be tempered by an understanding of both the nature of the D&B files and the techniques used by MIT staff to build the data base. It should be emphasized that the D&B file was not designed as a time series or census of activity in a particular area or industry. As a result, a number of problems arise when the data are used for longitudinal analysis.

A major problem with the MIT model is that births of firms tend to be underreported for the years covered by the study. D&B makes no effort to enter historical data for each newly reported firm in its files. This means, for example, that a firm appearing on the 1975 D&B file for the first time might actually have started operations in 1972. Consequently, the MIT model treats any newly reported firm which is known to have been established before the period being studied as a new listing, rather than a birth. These new listings are excluded from any aggregate analysis of economic change during the current and previous periods. They are, however, incorporated into the base-period employment for the analysis of future periods.

A second problem is attributable to the 2- and 3-year intervals between the observations forming the model's history. A large number of firms, particularly smaller firms, are formed and go out of business within a year or two. Because the MIT studies use data gathered at intervals greater than the life cycles of these firms, any aggregate measure of employment change will understate the actual number of business births and deaths occurring during an interval.

A third problem involves D&B's treatment of branch establishments. Employment in branches is often understated or even unreported because branches do not usually receive separate credit ratings. And, because D&B does not report the year that branch offices are started, the MIT model assumes that all new branch listings are births. However, because a 1976 D&B study of 1,000

firms indicated that nondisaggregated headquarters employed only 16 percent of all employees in headquarters and branch establishments, the MIT team did not consider the nondisaggregation of branch data to be a major problem.

The D&B file also has the same general problems of other large-scale employer data bases regarding geographical and industrial coding, clerical errors, and employer reporting mistakes. Errors of this type are extremely difficult to identify or measure without the use of costly employer validation visits. The MIT team developed an elaborate editing process which attempts to account for most of these deficiencies. However, an evaluation of the results of the MIT studies should take into account the nature of the D&B file and the problems inherent in constructing a history of nearly 6 million employers.

Components of change. The extent to which an area's job pool expands or contracts over time depends on the balance between those changes increasing the job pool—business births, expansions, and immigration—and those decreasing the job pool—business deaths, contractions, and outmigration. All of these events are occurring simultaneously in every labor market. For employment to increase over time, births, expansions, and immigration must be greater than those components causing employment decreases.

The following tabulation summarizes the percentage employment changes resulting from the different components of employment change. Data are averaged for all States during three periods. (The MIT project also produced similar data by neighborhood, city, Standard Metropolitan Statistical Area, region, and for individual States.)

	1969-72	1972-74	1974-76
Births	5.6	5.5	6.7
Deaths	5.2	4.5	5.7
Expansions	4.7	5.3	4.4
Contractions	2.9	2.6	3.4
Immigration . . . . .	.1	.1	.1
Outmigration . . . . .	.03	.05	.01

This tabulation reveals several important characteristics of the employment change process. As noted, relocation is not significant, contrary to popularly held opinions. At the city level, migration of firms becomes more important, but its net effect on total employment remains insignificant when compared to the other factors. When firms move, they usually move short distances, as from an inner city to a suburb. Most of the observed firm outmigrations during 1969-76 were from New York City and Washington, D.C., to the surrounding suburbs.

The rates of job loss from business deaths and contractions are roughly the same from year to year. The

business death rates varied about 1 percent with the direction of the business cycle during the period of this study. This trend also holds at the State and city levels. The following tabulation compares the rates of employment loss and gain during the 1972-76 period for 10 metropolitan areas selected to demonstrate a variety of overall growth rates:

Area	Percent gain	Percent loss	Overall percent change
Houston	62.7	35.7	27.0
Charlotte	48.0	40.4	7.5
Dayton	36.4	31.4	5.1
Rochester	33.7	29.3	4.5
Boston	37.4	33.7	3.8
Baltimore	36.5	32.9	3.5
Hartford	36.6	35.5	1.1
Worcester	24.6	25.1	.5
New Haven	27.0	29.5	-2.6
Greenville	26.9	35.1	-8.4

Perhaps even more important than the relatively small range in employment loss rates is the fact that the job loss rates were generally greater in areas with the highest growth rates (that is, Houston and Charlotte). It is also interesting to note that the employment loss rate averages about 8 percent per year in most of the areas. Compounding that employment loss rate means that an area must replace about 50 percent of its jobs every 5 years to maintain its employment base.

Among the 10 metropolitan areas, the range of employment gain rates is almost 2½ times greater than the range of employment loss rates. The employment gain rates were, as might be expected, highest in the fast-growth areas. Generally, differences in employment growth rates are the result of variations in the employment gains from new firms starting up and existing firms expanding operations, rather than differences in employment losses resulting from layoffs, or from firms going out of business or migrating to other areas.

The Birch study indicates that an area must replace an average of 8 percent of its jobs every year to maintain a constant employment level. And, to expand its employment base, an area must obviously generate additional jobs. In Phoenix, for example, nonagricultural employment increased 2.9 percent, or from 613,000 to 631,000, in 1980. To attain that growth rate, the Phoenix economy actually had to generate approximately 66,700 jobs, of which almost 75 percent replaced job losses.

Firm size and location. Two-thirds of all net new jobs were created by firms with 20 employees or fewer, and about four-fifths were created by firms with 100 employees or fewer, according to the MIT model of 5.6 million businesses between 1969 and 1976. The results here are consistent with other research which found that,

Table 1. Percent of net new jobs created and percent of total employment by firm size and region, 1972-76

Region	Firm size				
	20 or fewer workers	21 to 50 workers	51 to 100 workers	101 to 500 workers	More than 500 workers
Northeast:					
Percent of net jobs created	177.1	6.5	-17.4	-33.3	-32.9
Percent of total employment	21.7	12.8	10.5	23.4	31.7
North Central:					
Percent of net jobs created	67.2	12.0	5.2	3.1	12.4
Percent of total employment	20.5	12.7	10.2	22.9	33.8
South:					
Percent of net jobs created	53.5	11.2	5.5	9.4	20.4
Percent of total employment	22.0	12.6	10.0	23.1	32.3
West:					
Percent of net jobs created	59.5	11.6	6.3	9.3	13.3
Percent of total employment	23.3	13.6	10.8	22.2	30.0

SOURCE: David Birch, *The Job Generation Process*, mimeo (MIT Program on Neighborhood and Regional Change, February 1979).

over the last 10 years, small businesses created 3 million jobs, while the 1,000 largest firms recorded virtually no net gains in employment.⁵

In 1976, small firms accounted for only about 24 percent of the private-sector employment in the country, while registering 66 percent of the employment growth. Firms with over 500 employees account for about 27 percent of employment but only 13.3 percent of job generation. Firms in the middle range generated the least employment growth. The relatively strong job generating capacity of small firms must be interpreted in relationship to the behavior of larger firms, for growth in their proportion of total employment may indicate either an increase in employment in small firms or a decrease in employment in larger firms.

Table 1 shows that another important pattern of job generation is that the slower growth areas rely more heavily on smaller businesses to generate new jobs; larger firms generate a greater percentage of net jobs in the faster growth areas. Across regional lines, small firms are the major creators of new jobs. Between 1972 and 1976, firms with 50 or fewer employees generated basically all net new jobs in the Northeast, almost 80 percent in the North Central, and about two-thirds of the new jobs in the South and West. The distribution of overall employment by size of firm was roughly the same from region to region, but there were wide disparities in the percentage of jobs generated by size class. In the Northeast, all but the small establishments were actually net job losers during 1972-76.

Age of firm. Another distinguishing characteristic of job generators is their youth. According to the MIT model, about 80 percent of the replacement jobs are created by establishments which have been operating less than 4 years. This proportion is remarkably similar among regions.

Percent of jobs created

Years in business	North			
	Northwest	Central	South	West
Less than 4	75.5	80.8	80.4	80.9
5 to 8	10.4	8.4	9.9	8.8
9 to 12	7.5	6.0	5.1	5.5
13 or more	6.6	4.8	4.6	4.8

The correlation between age and employment growth was also found in a California study of additions to employer payroll during the 1976-77 period.⁶ This study concluded that small firms less than a year old had much higher rates of payroll accession than other firms, accounting for 4.4 percent of total employment and more than 11 percent of the total payroll accessions.

The use of age of business as a variable to study employment growth patterns is a characteristic unique to the D&B files. No other major employer data base contains the year that a business was started. (The California study compared unemployment insurance employer records over 5 calendar quarters to identify new firms and to track their subsequent movements.)

Industry developments. As would be expected, service-producing industries generated most of the new jobs. In fact, the service sector was responsible for virtually all of the employment growth during the 1972-76 period, increasing its share of total nonfarm employment from 67.9 percent to 70.6 percent. (This employment shift to service industries is also reflected in aggregate BLS data, shown in table 2.) Manufacturing firms in the MIT model actually generated no net new jobs, although certain high-technology industries showed strong employment growth. Service industries kept employment bases rela-

Table 2. Employment of industry divisions characterized by large and by small establishments, and changes, 1974-80

Industry	Employment (in thousands)			Average size of establish- ment, 1980	Percentage of total growth	Percentage employment change
	March 1980	March 1974	Change, 1974-80			
Total, private sector	73,720	63,089	10,631	17	100.0	16.9
Small-establishment industries:						
Trade	20,068	16,537	3,531	13	...	21.4
Finance, insurance, and real estate	5,090	4,107	983	13	...	23.9
Services	17,636	13,191	4,445	13	...	33.7
Construction	4,087	3,878	209	18	...	5.4
Total . . . . .	...	...	9,168	12	86.2	...
Large-establishment industries:						
Manufacturing	20,722	20,027	695	62	...	3.3
Mining	990	665	325	32	...	32.8
Transportation and public utilities	5,127	4,684	443	27	...	9.5
Total . . . . .	...	...	1,463	49	13.8	...

SOURCE: U.S. Bureau of Labor Statistics.

tively stable in many areas where manufacturing industries were incurring severe losses.

Job generation is a cheaper, simpler process in the less capital-intensive service industries. There are few barriers to entry by new firms in most of this sector. Because many of the industries provide "custom designed" products, their production tends to be quite labor-intensive. The demand for business, health, and personal services has risen dramatically and is reflected in the number of new jobs.

Corporate structure. Job creation patterns are strongly affected by the corporate structure of the generating firms. Job creation resulting from the birth of new establishments increasingly reflects the branching activities of existing firms. The share of employment created by branching activity increased from approximately 50 percent to over 70 percent in all regions between 1974 and 1976. However, after having established branches, corporations are less likely to expand them. The majority of expansion growth is accounted for by independent firms, that is, firms having no branches or subsidiaries. The following tabulation shows percentage employment gains by region and type of establishment during 1974-76:

	Births			
	Independent	Headquarters	Subsidiary	Branch
Northeast	23.6	2.0	1.4	72.0
North Central . .	19.9	1.4	1.1	77.6
South	25.2	1.6	1.4	71.7
West	24.0	1.7	1.1	72.2

	Expansions			
	Independent	Headquarters	Subsidiary	Branch
Northeast	58.2	21.1	6.7	14.0
North Central . .	54.5	20.9	5.0	19.6
South	54.2	17.4	5.7	22.7
West	56.9	22.2	4.6	16.3

Independent firms accounted for about 20 to 25 percent of the employment gained by births of new firms and 50 to 60 percent of the employment gained by expansion of existing firms between 1974 and 1976. Overall, independent firms accounted for about one-half of the total jobs created during the 1974-1976 period. These trends in job generation by corporate structure are quite consistent from region to region but do vary by industry. Independents play a more important role in trade and services—the growing sectors of the economy. Branching tends to be more important in manufacturing industries. It is also noteworthy that more than 65 percent of all manufacturing jobs generated in the South were in branches controlled by corporations headquartered in other parts of the country, mainly the Northeast and North Central sections. By 1976, branches accounted for roughly 40 percent of all job re-

placement activities in the South, and an even greater share in manufacturing.

The Brookings Microdata Project

The Brookings Institution used the United States Establishment and Enterprise Microdata files, developed by the U.S. Small Business Administration, to examine the components of employment change between 1978 and 1980. These files are basically updates of the D&B files used by Birch. The major conclusions from the Brookings project:

- Between 1978 and 1980, 55 percent of the net employment growth was in establishments with fewer than 20 employees. About 78 percent of the net 1978-80 growth was in establishments with under 100 workers.
- Approximately one half of this employment growth represents branching or establishment of subsidiaries by large firms.
- Small independent firms generate new jobs at a rate about equal to their proportion of total employment.
- The proportion of employment growth accounted for by these small firms increases in regions and industries with declining employment, and decreases in regions and industries with expanding employment.

The Brookings analysis of employment growth between 1978 and 1980 both differs from and confirms some of Birch's major hypotheses regarding the behavior of small business. Both studies confirm the turbulent job generating behavior of establishments with fewer than 100 employees. However, it should be noted that the studies differ as to how to classify small branches of larger firms. The Brookings project, for the most part, excludes these establishments from the discussion of small business behavior.

Like the MIT study, the Brookings project also emphasizes the importance of examining small business behavior relative to the performance of larger firms. Finally, the Brookings project introduces a more recent data source for the study of the job generation process—the 1978 and 1980 United States Establishment and Enterprise Microdata files.

The University of California study

The study by the University of California Institute of Urban and Regional Development used individual employer records from the mandatory unemployment insurance system to analyze the job generation process. The study, directed by Michael Teitz, was based on records for a sample of just over 25,000 California employers from the 1975-79 period. The Teitz study differed from the MIT project in terms of sample size, geographic coverage, reference period, and data source. However, the results are remarkably similar to those noted by Birch.

- During 1975–79, establishments with fewer than 20 employees accounted for 56 percent of the net gains in employment. (Birch estimated that such firms contributed about two-thirds of the net job gains.)
- Firms less than 2 years old accounted for a much greater share of the net employment growth than older firms.
- More than 90 percent of the net new jobs in the young, small firms were in the nonmanufacturing sector.
- Job losses resulting from layoffs and from firms going out of business or undergoing ownership changes varied by size class. Teitz found that at least 7 percent of jobs existing in companies with fewer than 10 workers at the beginning of their second year of business had disappeared by the third year. This is in line with Birch's estimated overall job loss rate of about 8 percent per year. In general, Teitz noted an even greater degree of volatility—alternating periods of expansion and retrenchment—in the job generation process than did Birch.

The Teitz study provides some other interesting observations on the job generation process. In particular, Teitz found that, while small new firms dominated the job creating process, most of the new employment growth was concentrated in a small percentage of these firms. He also concluded that, in the California manufacturing sector, larger firms are the major generators of net new jobs.

The Teitz study is important in several respects. First, it introduces another data source—the administrative records of the unemployment insurance system—which may be used to build a history of individual employers. While these data are affected by the same general types of problems faced by users of the D&B file, Teitz's discussion and treatment of these problems should help other analysts of the unemployment insurance micro data. Secondly, the study tends to confirm some of the provocative conclusions of the Birch study regarding the nature of the job generation process. Perhaps just as importantly, Teitz's study provides more documentation on how the quality of labor market information can be improved by examining the individual employer data. Finally, Teitz introduces an interesting concept regarding the concentration of employment growth in a relatively few small firms. Further study of this characterization of the job generation process should be an important part of any effort to develop improved job generation strategies.

The future of micro research

In coming years, at least three major sources of individual establishment data will be available to the policy analyst: the D&B data base; unemployment insurance rec-

ords; and the U.S. Department of Commerce's Standard Statistical Establishment List. Each source has its respective strengths and limitations for breaking down and analyzing macro labor force movements. Each of these important data bases is the byproduct of an administrative record keeping system which was not designed for time series analysis. The characteristics of the D&B file, the basis for the MIT and Brookings studies, were described above in conjunction with the discussion of the MIT project.

The second major employer micro file is administered at the State level by the State Employment Security Agencies, and at the national level by BLS. The State agencies maintain micro files of all employers covered by unemployment insurance (UI) laws. (The California UI micro file was the basis for the Teitz study.) For the first calendar quarter of the year, each State Employment Security Agency submits to BLS a tape containing the name, account number, address, SIC code, 3 months of employment data, and total quarterly wages of each UI-covered establishment. This information serves as the sampling frame for most of the major BLS surveys. The UI universe file, in contrast to the D&B file, represents an almost complete census of nonagricultural firms and is updated on an annual basis.⁷

As previously indicated, the analytical use of the D&B file currently is limited by its noncomprehensive nature, a weakness in accounting for new births, the quality of the SIC coding, and the irregular updates of employer information. The D&B file has also been subject to irregular changes in file maintenance procedures which makes the development of a longitudinal data base even more difficult. These problems are, for the most part, handled better by the UI universe file. The major weaknesses of the UI file for micro analysis involve the difficulties in maintaining series continuity, determining employer affiliations, and identifying and breaking out the employment of multi-establishment firms.

A third major employer file, the Commerce Department's Standard Statistical Establishment List (SSEL), is currently being developed from various Census Bureau, Internal Revenue Service, and Social Security Administration records. The SSEL, when complete, will include all known multi- and single-establishment employers. Most data will be updated on an annual basis. The SSEL will be particularly strong in the breakout of multi-establishment employment.

Preliminary indications are that improvements in economic analysis could be achieved by coordinating the efforts of the MIT and Brookings project, and from the continued refinement and development of the UI and SSEL files. At the moment, however, most reconciliation work is hindered by the need to maintain confidentiality of employer responses to government surveys. Legislation is currently being developed by the U.S. Depart-

ment of Labor to permit sharing of statistical information among data bases under procedures which would safeguard the confidentiality of responses, when this sharing is feasible. Each file could then serve, at a minimum, as a quality control check for the other files in

terms of employer location, size, and industrial activity. Eventually, the attributes of these files might be combined to build an employer data base that would significantly improve the ability to trace the process of job creation. □

—FOOTNOTES—

ACKNOWLEDGMENT: The author would like to thank Carmen Cruz of the Office of Employment Structure and Trends, Bureau of Labor Statistics, for her assistance in the preparation of this article.

¹ This legislation was passed by Congress on July 12, 1982, and is awaiting Presidential signature. See, "A Battle over R&D Funding," *The Washington Post*, Feb. 18, 1982, p. A22.

² Various aspects of the MIT project are discussed in David Birch, *The Job Generation Process*, mimeo (MIT Program on Neighborhood and Regional Change, February 1979); *Choosing a Place to Grow: Business Location Decisions in the 1970's*, mimeo (January 1981); *Corporate Evolution: A Micro-Based Analysis*, mimeo (January 1981); and David Birch, "Who Creates Jobs," *Public Interest*, Fall 1981, pp. 3-14.

³ Michael B. Teitz, *Small Business and Employment Growth in Cali-*

fornia, mimeo (Berkeley, Calif., Institute of Urban and Regional Development, University of California, March 1981).

⁴ Catherine Armington and Marjorie Odle, *Sources of Employment Growth 1978-1980*, mimeo (Washington, Business Microdata Project, The Brookings Institution, March 1981).

⁵ Stanley Pratt, editor of *Venture Capital Journal*, in "Striking It Rich," *Time*, Feb. 15, 1982, p. 36.

⁶ State of California Employment Development Department, *Employment Service Potential, Volume I, The Dimensions of Labor Turnover* (September 1979), p. 111.

⁷ BLS is initiating a comprehensive evaluation of the UI name and address files that will yield significant improvements in their utility for economic analysis.

A note on communications

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The future of work: does it belong to us or to the robots?

As the silicon chip helps chip away many factory and office functions, prospects are bright for both robots and microprocessors, but investment and other constraints seem to assure no revolutionary loss of employment

SAR A. LEVITAN AND CLIFFORD M. JOHNSON

Today, futurists are discussing the onset of a sweeping technological revolution, one which would rival or surpass the Industrial Revolution of the 19th century in importance. This envisioned social order has been given many names—"postindustrial," "technetronic," or "information" society. At the center of this flurry of interest in technological change is the microprocessor. While computerized automation has been theoretically feasible for more than a decade, large and expensive computer systems could produce cost savings only in the most massive industrial settings, and automated machinery could not be easily adapted to serve various production functions. Now, with the development of the microprocessor, these obstacles have been overcome and the potential uses of computerized machinery at the workplace have dramatically increased.

Microprocessor technology is best symbolized by the silicon chip, a miniaturized system of integrated circuits which can direct electrical current and, thereby, generate vast computational power. A silicon chip the size of one square centimeter can perform millions of multiplications per second, and has the capacity to store the texts of the Declaration of Independence, the Constitu-

tion, and a few chapters of the Federalist Papers. Technological advances are expected to result in at least a fourfold expansion of these capabilities within a decade, so that the microprocessors of the future will be extremely powerful computers on a single silicon chip or combination of chips. The reduction in size is astounding—today's hand-held programmable calculators have more computational power than the first full-scale computers built during World War II, computers which could have been "hand held" only by juggling 18,000 different vacuum tubes.

This miniaturization of computer technology is particularly important because it has been accompanied by dramatic cost reductions, making microprocessors economically competitive in a wide range of industrial applications. Once designed, silicon chips can be mass produced at a very low cost, and even further price declines are anticipated as volumes rise. As a result, a calculation which cost 80 cents to perform in the early 1950's costs less than one cent today, after adjusting for inflation. The combined reductions in size and cost of microprocessor technology have triggered renewed interest in prospects for automation and in the broader possibility of a wholesale transformation of modern society driven by these new technological capabilities.

The silicon chip is particularly important to economic automation because it provides the basis for fully integrating computer and machine. In industrial set-

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tings, the microprocessor makes possible the development of manufacturing machinery with unique adaptability. The great majority—at least 75 percent—of all manufactured goods fall into the category of shorter, lower-volume production runs, with only the most basic industries continuing to fit the mass-production stereotype. Technological advances in microelectronics, therefore, were an essential precondition to widespread automation, and the expanding use of reprogrammable machinery has triggered today's intense debate regarding the future of industrialized societies.

The potential impact of microprocessors is heightened by their seemingly endless number of applications. This new technology promises to alter not only the factory, but the office as well. Sophisticated word processors and computerized information storage and retrieval systems are becoming increasingly cost-effective, and because this new technology does not require knowledge of specialized computer languages, their growing use may raise traditionally low productivity among office workers. These office innovations are considered qualitatively different from previous office equipment which "mechanized" or "automated" routine tasks. While memory typewriters made an office worker's tasks easier, emerging computer technologies may change the means by which information is transcribed and made available to others. Again, only with the silicon chip has this decentralized use of computer technology at an affordable cost become possible.

'Robot revolution' coming

The use of the microprocessor to automate production functions is epitomized by the development of the robot. Prior to the last decade, robots were confined to the domain of children's stories and science fiction—their practical and efficient application in work settings was virtually inconceivable given the state of computer technology. The silicon chip has thrust robots from fantasy to reality, and the technology is being pursued with remarkable speed and vigor. A number of top computer companies are now considering entry into the robot market, and several large U.S. corporations have made commitments to purchase robots which are already available. The use of robots in manufacturing has nearly quadrupled between 1979 and 1981, and most analysts expect the sales curve to shoot higher during the next few years.¹ Most importantly, microprocessors seem to be in a prime position for the implementation of "learning curve pricing" strategies in which firms lower prices in anticipation of rising volumes and declining unit costs. The entry of large computer companies into the robot market could ensure this aggressive marketing stance and trigger a sharp rise in robot sales by 1990.

Today's robots bear little resemblance to the cre-

ations of screenplay writers and science fiction authors. Rather than some form of mechanical humanoid, industrial robots are characterized by mechanical arms linked to reprogrammable computers. An exact definition of a robot, as distinct from other automated machinery, eludes even industry representatives. The Robot Institute of America, an industrial trade group, stresses that it is the "reprogrammable and multifunctional" character of robots which is unique, allowing them to perform a variety of tasks.² And the emerging versions of robots are varied—the more extravagant include a "bureaucratic robot" which stamps signatures on letters, a robot "nurse" to assist handicapped persons in wheelchairs, a robot "janitor and guard dog" for the home, and "talking robots" which would advertise products or give job training to illiterates. Microprocessors are revolutionizing design methods for the development of new manufactured goods, and have become an integral part of nearly all modern research equipment so as to expedite lengthy data analysis.³ Innovations such as voice-sensitive computers which can directly transcribe dictation into written text may be marketable within just a few years. It is this diversity of applications for microprocessor technology which distinguishes it from less significant innovations, and which has led futurists to predict a societal transformation "comparable with the agricultural revolution that began about 10,000 years ago, and with the industrial revolution."⁴

How far . . .

There is little consensus as to where the "robot revolution" is heading and how far it will go. The technology itself may be refined to such an extent that most factory work could be carried out by robots and automated machinery. For example, a study conducted at Carnegie-Mellon University asserts that the current generation of robots has the technical capability to perform nearly 7 million existing factory jobs—one-third of all manufacturing employment—and that sometime after 1990, it will become technically possible to replace all manufacturing operatives in the automotive, electrical-equipment, machinery, and fabricated-metals industries.⁵ Yet these theoretical estimates of the potential for automation, which reach as high as 65 to 75 percent of the factory work force, do not reflect the rate at which the new technology will actually be introduced to the workplace. The pace of innovation will depend on the relative costs of labor and computerized technologies, as well as on broader levels of supply and demand for goods and services. Predictions of this nature are infinitely more difficult than abstract assessments of future technological capabilities.

The automobile industry offers an interesting case study, because it is probably the first manufacturing industry to aggressively pursue the use of robots in auto-

mated processes. The push toward automation in the auto industry is a response to both rising labor costs and growing concerns for quality control and competitiveness in international markets. Auto manufacturers already find it possible to operate robots for \$6 per hour, well below the \$20 per hour required for the pay and benefits of a skilled worker in 1981.⁶ General Motors, aware of the growing use of robots by Japanese auto makers, predicts that by 1987, 90 percent of all its new capital investments will be in computer-controlled machines.⁷ A 1980 survey conducted by the American Society of Manufacturing Engineers predicted that robots will replace 20 percent of existing jobs in the auto industry by 1985, and that 50 percent of automobile assembly will be done by automated machines (including robots) by 1995.⁸ Even the United Auto Workers anticipates a 20-percent decline in membership by 1990 and has successfully obtained advance notice and retraining rights from auto manufacturers in a growing effort to gain protection from sweeping automation. Yet, few of these estimates include any consideration of the extent to which capital shortages confronting robot manufacturers and purchasers may limit the speed with which the new technology is adopted.

Projections of the impact of microprocessors on office employment are even more problematic, with analysts more frequently predicting the number of office jobs "affected" rather than eliminated by automation. The Carnegie-Mellon study argued that 38 million of 50 million existing white-collar jobs would eventually be affected by automation, while a vice president for strategic planning for Xerox Corp. offered the more conservative guess of 20 to 30 million jobs affected by 1990.⁹ There is general agreement that office technologies will be changing rapidly, but little indication of whether the result will be reduced office employment, shifts in future employment growth, or simply higher levels of productivity in white-collar settings.

A 1982 study prepared for the International Labour Office found that microelectronic technology has not caused widespread displacement of office workers, but perhaps only because of the impact of poor economic conditions on the rate of diffusion of the new technology in office settings. Selected case studies of the banking and insurance industries suggested that new job opportunities were being created, but the skills made redundant by new technologies were generally inappropriate for those emerging opportunities. The report stressed that this trend poses special threats to employment prospects for women, and called for additional education and training efforts to close the "skill gap" caused by the use of microprocessors in office jobs.¹⁰

Perhaps the greatest fears that automation will lead to widespread unemployment have been voiced, not in the United States, but in Western Europe. For example,

two British authors have predicted nothing short of the collapse of work as a social institution in an era of microprocessors:¹¹

It is impossible to overdramatize the forthcoming crisis as it potentially strikes a blow at the very core of industrialized societies—the work ethic. We have based our social structures on this ethic and now it would appear that it is to become redundant along with millions of other people.

In West Germany, studies of the impact of automation on future employment levels commissioned by the Bonn government projected that the number of jobs in 1990 will at best be marginally above 1977 levels—a pessimistic view in light of anticipated population growth. The issue of technologically induced unemployment increasingly is capturing the attention of West European leaders, and unions in Italy, Germany, and elsewhere are responding with demands for shorter workweeks to protect employment levels. Perennial fears that machines would replace workers have never been fulfilled, but European futurists insist that it will be different this time.

... and how fast?

While the impact of automation in the past has been offset by the emergence of new industries and by growth in the service sector of the economy, these avenues for employment growth may indeed be less open in an era of microprocessors. The electronics industry, which supports this computerized technology, certainly will experience rapid growth in the coming decade, but a 1979 survey of the world electronics industry prepared for the Organization for Economic Cooperation and Development revealed that the internal use of its own technology will keep employment growth in this sector to a minimum.¹² It is this "reproductive" potential of computerized technology—the prospect of robots building robots—which challenges traditional patterns of employment growth through new industries. And to the extent that the microprocessor will affect service as well as manufacturing industries, even the recent trend of expanding service employment may fail to provide jobs.

In spite of these relatively unique characteristics of microprocessor applications, predictions of immediate and massive job losses tend to ignore the market forces which slow the pace of technological change. As stressed in recent research by the Bureau of Labor Statistics, many factors limit the speed of diffusion of technological change and thereby mitigate possible employment implications. The size of required investment, the rate of capacity utilization and the institutional arrangements within industries all can act as "economic governors" which slow the adoption of automated technologies.¹³

Virtually all capital-intensive industries have a massive investment in existing plant facilities, and they cannot afford to squander these resources through the wholesale replacement of working machinery. More importantly, the financial constraints on capital formation necessarily limit the rate at which new technologies are introduced. In this context, Joseph Engleberger, president of Unimation, Inc. (the Nation's largest robot manufacturer), has dismissed predictions of galloping automation, noting that even the replacement of 5 percent of all blue-collar workers in Western industrialized nations would require investments totaling \$3 billion in each of the next 40 years.¹⁴ While microprocessor technology may be promising in its flexibility and potential efficiency, industries must be able to afford the new acquisitions in order to use them.

A less tangible but perhaps equally important force limiting the expansion of computer technology lies in the attitudes of both workers and consumers. While a computer may be able to diagnose medical problems, its bedside manner may be less than comforting. Similarly, word processors and telephone answering systems may alter clerical roles, but most executives will not want to forgo the convenience offered by their personal secretaries. People can hear the best music in the comfort of their homes, but flock to concert halls to hear lesser performances. Even on the assembly line, where robots may be perfectly suited for production processes, the aversion of managers and workers to such unfamiliar companions may hamper their smooth and rapid assimilation at the workplace. These psychological barriers cannot be factored into equations of economic efficiency, but they are likely to slow the pace of technological change nonetheless.

Will workers become obsolete?

The picture which emerges when the functioning of capital markets and work organizations are considered is one of evolutionary rather than revolutionary change. With annual sales of robots well below 10,000 in a labor force of more than 100 million, it will be some time before computerized technologies make a major dent in aggregate employment levels. This perspective is emphasized by Robotics International, a professional group which polled 100 users and manufacturers of robots. Based on the responses, the group concluded that robots are likely to replace 440,000 rather than a million workers by 1990, and that all but 5 percent of the dis-

placed workers would be retrained rather than dismissed.¹⁵ The relative lack of union concern in the United States over aggregate job losses through automation also stems from this belief that the pace of innovation has been exaggerated. William Winpisinger, president of the International Association of Machinists, has argued that the replacement of human skills with computerized machinery will occur slowly and that a shortage of skilled workers will remain our most pressing manpower problem.¹⁶ No doubt, unions will continue to seek guarantees of job security in some industries, and collective bargaining may gradually extend to include management investment decisions.

In the more distant future, no one can be sure where new employment growth will occur. Expectations of a workless society still linger; as described in one forecast:¹⁷

Earning a living may no longer be a necessity but a privilege; services may have to be protected from automation, and given certain social status; leisure time activities may have to be invented in order to give new meaning to a mode of life that may have become economically useless for a majority of the populace.

The literature in recent decades has been replete with speculations on how people would cope with the loss of meaningful work roles, or how society would allocate and distribute wealth in the absence of strong ties between work and income.¹⁸ Even for those who reject such forebodings, the belief in continued employment growth admittedly contains as much faith as foresight.

Still, there seems little likelihood that the worker will become obsolete in the foreseeable future. In one sense, past waves of automation have created dislocations, but it has been distributed throughout the labor force in the form of benefits and social progress—shorter workweeks, more vacation time, longer training and education, earlier retirement, child labor laws, and welfare and unemployment payments. We can expect this trend to continue, particularly as labor seeks assurances of job security. Assuming a healthy rate of economic growth during a period of innovation and increasing automation, it is also likely that levels of aggregate demand will support the emergence of new goods and services. Rising expectations alone will cause Americans to translate productivity gains into higher standards of living instead of less work, a pattern which has held for centuries. The period of adjustment which lies ahead may not be painless, but it seems that work is here to stay. □

— FOOTNOTES —

¹ "Robots Join the Labor Force," *Business Week*, June 9, 1980, p. 62; and Joann S. Lublin, "As Robot Age Arrives . . ." *The Wall Street Journal*, Oct. 26, 1981, p. 1.

² Otto Friedrich, "The Robot Revolution," *Time*, Dec. 8, 1980, p. 75.

³ Gene Bylinsky, "A New Industrial Revolution is on the Way," *Fortune*, Oct. 5, 1981, pp. 106-14; and Barnaby J. Feder, "The Automated Research Lab," *The New York Times*, Oct. 27, 1981, p. D1.

⁴ Herman Kahn, William Brown, and Leon Martel, *The Next 200 Years* (New York, Morrow, 1976), pp. 8; 20-24.

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⁶ *Congressional Record* (daily edition), Dec. 10, 1981, p. S14908.

⁷ Harley Shaiken, "Detroit Downsizes U.S. Jobs," *The Nation*, Oct. 11, 1980.

⁸ Fred Reed, "The Robots Are Coming, The Robots Are Coming," *Next*, May/June 1980, p. 32.

⁹ "The Speedup in Automation."

¹⁰ Diane Werneke, "Microelectronics and Office Jobs: The Impact of the Chip on Women's Employment," report prepared for the International Labour Office, 1982, pp. 115-24.

¹¹ Clive Jenkins and Barrie Sherman, *The Collapse of Work* (London, Eyre Methuen, 1979), p. 182.

¹² Mich McLean, "Sector Report: The Electronics Industry," background study prepared for the Organization for Economic Cooperation

and Development, in *Technical Change and Economic Policy* (Paris, OECD, 1980).

¹³ Richard W. Riche, "Impact of new electronic technology," *Monthly Labor Review*, March 1982, p. 39.

¹⁴ Reed, "The Robots Are Coming."

¹⁵ Lublin, "As Robot Age Arrives . . ."

¹⁶ William W. Winpisinger, "Correcting the Shortage of Skilled Workers," *The AFL-CIO American Federationist*, June 1980, p. 21.

¹⁷ Theodore J. Gordon and Olaf Helmer, "Report on a Long-Range Forecasting Study," in *Social Technology* (New York, Basic Books, 1966), pp. 81-82.

¹⁸ James S. Albus, *People's Capitalism: The Economics of the Robot Revolution* (Md., New World Books, 1976); and Colin Hines and Graham Searle, *Automatic Unemployment* (London, Earth Resources Research Ltd., 1979).

Smoothing the transition

Union resistance to labor-saving technical change within an industry can often be moderated by careful management of change, which will minimize its effect in creating unemployment. This is much more difficult in the case of interindustry effects, since an enterprise in one industry is unlikely to be concerned with the effects of its decisions on employment in another industry. Technical change often produces losses for investors who have invested in equipment and skills that are made obsolete. Where the investment is embodied in people rather than in machines, the human problems it causes are more severe and less tractable. Those outside the union movement cannot condone a position that blocks technical progress, but they can approve one that uses some of the fruits of progress to give reasonable compensation to workers for the loss of their livelihood.

—ALBERT REES

The Economics of Work and Pay
(New York, Harper & Row, Publishers,
Inc., 1973), p. 137.

Helping labor and management see and solve problems

A mediator can help improve an unhealthy labor-management relationship by recognizing the symptoms, making an accurate diagnosis, and carefully prescribing appropriate remedies

JOHN R. STEPP, ROBERT P. BAKER,
AND JEROME T. BARRETT

The Federal Mediation and Conciliation Service has recognized that the effective promotion of labor-management peace requires more than just an "eleventh-hour" appearance at the bargaining table by its mediators. Like most other professional organizations that respond to human emergencies, the service has learned that by blending prevention with treatment its resources are used more efficiently.

The preventive mediation function requires the mediator to be alert to symptoms of untoward labor-management relationships, to diagnose the problems accurately, and to prescribe effective remedies.¹ The nature and severity of the symptoms must be recognized and traced to their source; the remedy must be suited to the location of the symptoms in the labor or management hierarchy, or both; and the parties must be persuaded that the cure is preferable to the disease and is clearly in their own self-interests.

This article extracts from accumulated experience those principles on which a prescriptive model for improving labor-management relationships can be built.²

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This empirical model is erected on the perceptions and experiences of the authors, all of whom are or have been Federal mediators.³

Recognizing the symptoms

Mediators are uniquely positioned to detect the danger signals emanating from a poor labor-management relationship. When involved at the collective bargaining table in dispute mediation, the mediator can make a reasoned judgment as to the nature of the relationship behind the conflict. This is done by examining the issues, assessing each side's internal relationships, and testing and verifying these impressions through in-depth private discussions with both parties.

Numerous issues, especially noneconomic or language items, are often symptomatic of underlying problems which are being addressed in a circuitous manner. When this is the case, a contractual agreement may be no more than a bandage on a festering wound. The underlying problems have neither been identified nor addressed and certainly have not been resolved.

Every mediator, at one time or another, has entered a negotiation shortly before a strike deadline, only to be confronted with many unresolved issues. In private discussions with the moving party, usually the union committee, the mediator learns that these issues are an attempt to send the other party "a message." The message is that there is enormous dissatisfaction with "busi-

ness as usual" on the shop floor and that problems are not getting resolved. Resentment is bubbling over onto the bargaining table in the form of contract issues. The bargaining table is an ill-equipped forum for the effective resolution of these underlying problems. During crisis negotiations it is very difficult to negotiate an improvement in attitudes or a better labor-management relationship.

Faced with a rapidly approaching deadline, the best the mediator can hope for is that some issues can be resolved through catharsis and others quietly dropped because they are not strike-related. If a tentative agreement is reached, the mediator's relief may be brief because the membership's frustrations may surface again in their refusing to ratify the agreement. Even with ratification, there remains a strong suspicion that all is not well and that the administration of this contract and the negotiation of the next are likely to be fraught with difficulty. This perception is often shared by negotiators, too.

The mediator may also become aware of a deteriorating labor-management relationship through ways other than his or her personal involvement in contract negotiations. Through such professional and community organizations as the Industrial Relations Research Association, the mediator can learn of problems. Also, in monitoring dispute cases, he or she has daily contact with representatives of labor and management; through casual conversation, there is much opportunity to learn of labor relations problems in a particular plant or location.

Similarly, relationships plagued by frequent, long, or bitter strikes; wildcat strikes; high grievance levels; numerous arbitrations; or other obvious signs such as job losses in a declining business enterprise, are symptoms which will catch the mediator's attention. Once alerted, he or she can seek confirmation from the labor and management representatives at the site.

Another means of mediator awareness is through communiqués from the affected parties. Because the Federal Mediation and Conciliation Service is annually involved in more than 1,000 technical assistance endeavors, the awareness of the availability of this service among labor-management practitioners assures numerous requests. When contacted, the mediator will begin exploratory meetings with the parties to determine the nature, location in the organization, and extent of the problems.

Diagnosing the problem

Having detected danger signals, the mediator must guide both parties through a joint analysis of the problems in order to determine their seriousness and exact location. Until this diagnosis is completed, no remedy can be prescribed. The character of a labor-management

relationship may be viewed along a simple continuum consisting of three benchmarks: *conflict*, *detente*, and *accommodation*.⁴

An employer at the *conflict* end of the continuum never really accepts the union: ". . . he does not yield to the union even a narrow, restricted scope until he literally has to; and he looks for the first opportunity to get rid of the intruder. His acceptance of joint dealings is an 'imposed acceptance,' imposed by law and by union power."⁵

Under *detente*, the midpoint of the continuum, each side accepts the other's institutional legitimacy but exercises its relative strength to obtain the best deal. Each adopts a "win some, lose some" approach. They fight, but the conflict is held within accepted limits; there is a conscious effort to avoid pain and serious injury to one another. Parties at the *accommodation* end of this scale strive to reduce the level of contention. When differences do occur, they are processed with minimum emotion through agreed-upon procedures with equity being a realistic and desired goal for both. "They have proved themselves willing to compromise whenever possible, to conciliate whenever necessary, and to tolerate at all times."⁶

The three benchmarks can be used by the mediator to determine the severity and types of problems the parties have. Relationships characterized by *conflict* will have the most serious problems, reflecting distrust, hostility, and suspicion; those characterized by *accommodation* will have the least severe problems, arising from human failures in communications, consistency, and concern for the points of view of others.

The next segment of the model directs the mediator's diagnosis to a determination of the location of the problem within the respective organization. One inhibitor to accurate diagnosis is the diffusion of authority in complex, multilayered, and interdependent labor-management organizational structures. A systematic examination of the various intraorganizational dimensions and their interrelationships is needed to locate and address the source of the problem. Because the structures of most labor organizations are reactive to and thus closely parallel the management structure to which they relate, more attention will be given to the structure of management in labor relations matters.

Management can generally be regarded as conducting labor relations on three levels. (On occasion these levels may be extended or compressed.) The top level is one of decisionmaking, usually personified by either a vice president of labor relations or a labor relations director. This level formulates, delivers, and implements corporate policy on its own initiative or as an operating arm of higher-level management policymakers. The union counterpart of this level is usually an international representative.

The mid-level can be characterized as one of implementation for labor relations decisions and policies. Within management, this level would generally be staffed by either a plant manager or a department head who formulates very little policy but has, instead, the important responsibility of supervising and coordinating the implementation of policies established at the top level. Business agent or local president are usually the titles of union officials at this level.

The lowest management level is populated by first-line supervisors. They face the difficult task of confronting the real world armed only with the policies supplied and precedents established. Here are discovered both the flaws and strengths of overall policy. The union counterpart at this level is the steward.

A thorough examination of the parties' relationship requires a look at the relationships between levels within each structure, as well as across the table, which symbolizes the classic area of contention. Given three existing levels of labor-management interaction within a bargaining unit, each level having 1 of 3 possible characters, a diagnosis may theoretically yield 27 possibilities.⁷

In this article, we will not attempt to deal with 27 different variations, several of which have only a theoretical existence and are not plausible outcomes. For example, this would be true when accommodation existed at the supervisor/steward level, but at all higher levels the parties were locked in conflict. Accommodation could not realistically exist between foreman and steward, except momentarily, if conflict were the prevalent mode between plant manager and business agent. Two corporals in opposing armies cannot wage peace while their generals are waging war, lest they risk dismissal for treasonous behavior.⁸ More importantly, to examine all 27 possibilities would emphasize detail over the more generic and fundamental concepts.

Prescribing a remedy

Having diagnosed the relationship and the possible location of the problem, the model's remaining segment concerns the prescribing of remedies. Labor-management relations improvement remedies are few—there are presently three primary items: Relationships by Objectives programs, labor-management committees, and joint training programs. Variations exist of each, especially the latter two.

Relationship by objectives. In the Relationships by Objectives program, mediators provide the expertise for guiding labor and management toward basic changes in their relationship.⁹ Both are brought together by mediators to analyze their problems, to decide what their common objectives should be, and to reach agreement on goal implementation. Since the program was intro-

duced by the Federal Mediation and Conciliation Service (FMCS) in 1975, 100 Relationships by Objectives projects have been completed in some of the most difficult labor relations situations in American industry.

Currently, the program is being used almost exclusively in situations following protracted strikes or where there are volatile labor-management histories. The criteria established by the FMCS as a prerequisite for conducting such programs are that both parties must be sufficiently concerned about their divisive relationship and committed at all levels to do something about it. In return, the FMCS commits itself to assist the parties in rebuilding their relationship and thus to reduce the prospects of strikes in subsequent negotiations. (A Relationships by Objectives program may result in the parties identifying a need for a labor-management committee or for training.)

Labor-management committees. In recent years, more than 300 labor-management committees have been formed annually by employers and unions with the assistance of FMCS mediators. The structure and goals of labor-management committees vary greatly, but most share the essential need for representatives of labor and management to join together and talk about mutual problems. These committees complement the traditional collective bargaining relationship. They are an implicit recognition that the parties have much in common and that their relationship need not be totally adversarial. Through effective committees, joint problem-solving can take place which strengthens mutual credibility and tends to improve relationships.

Joint training programs. Successful labor-management relations are less a function of the quality of negotiations than of the day-to-day implementation and administration of the labor agreement. The majority of this work is done by the first-line supervisor and the union steward. If their performance is below standard, relations suffer. Consequently, most of FMCS' preventive activities have been directed toward this group.

Supervisor-steward training does have considerable value in the development of a work atmosphere which is conducive to labor peace and the quick and effective resolution of labor-related problems. Training sessions, which use a variety of instructional techniques and focus on subjects such as communications, leadership, and grievance handling, are a vehicle whereby adversaries can set aside their stereotyped images and view one another in a nonthreatening light, thus seeing, perhaps for the first time, their commonalities. The FMCS conducts 400 to 500 such joint training programs annually.

These training programs are tailored to the perceived needs of the supervisor-steward audience, and are structured to encourage class participation. Using a combi-

nation of lecture, audio-visual materials, and workbooks for the participants, the mediator leads discussions into such areas as:

- understanding the supervisor-steward relationship;
- making the supervisor-steward relationship work;
- providing effective leadership; and
- handling problem situations.

These programs are not intended to provide instant solutions to complex problems. They are designed to enable the participant, working with others in the group and under the guidance of a mediator, to come up with his/her own insights which, it is hoped, will be wisely applied over time to improve their relations.

Setting priorities

In selecting a remedy, order is important. One must focus first at the highest level in need of attention. Higher-order problems must be resolved or neutralized before those of a lower level are addressed.

If the labor-management problems are severe, and are located in the top or middle levels of the respective organizations, then the Relationships by Objective program should be considered as a possible remedy. Through the program, the parties have an opportunity to recast their relationship or to start anew, provided there is mutual acknowledgment of serious problems impairing the relationship, and genuine commitment to change.

Once the program has been successfully applied, *detente*, and rarely, *accommodation*, would be expected in lieu of *conflict*. Assuming the most likely, *detente*, the parties are now in a position to build together a better relationship. To assure further positive momentum and continued improvement, a labor-management committee is usually needed.

If nurtured and sustained, labor-management committees have demonstrated their capability for improving labor relations. The most visible level of improvement is likely to be between the top plant management and the business agent or local union president. If the committee is really working, it will also affect the plant floor. Consequently, through effective applications of such committees, all mid-level outcomes have the potential of being elevated to the *accommodation* mode.

In many cases involving labor-management committees, a problem that is often identified as an impediment to a good relationship is the inability of stewards or supervisors, or both, to dispose of grievances successfully. This can generally be attributed to some combination of three factors: (1) an unwillingness to reach an agreement—a preference for sustaining the conflict, (2) the absence of perceived authority to settle the problem, or (3) the lack of knowledge or technical ability to handle grievances. Each of these causes can be successfully

tackled by the labor-management committee. The first two can be addressed through separate consultations within each party, so that agents at the lower level realize their superiors are expecting most problems to be resolved at that level.

If the remaining problem is simply a technical inability to meet labor relations responsibilities, the most effective antidote is training. Through joint training of supervisors and stewards, the groundwork may be laid for a better relationship. Effective joint training usually emphasizes the building of problem-solving and interpersonal skills, and better understanding of respective roles and the benefits of working together.

Equipped with an improved understanding of their roles and the prerequisite skills for doing their jobs, and encouraged by support from the top and middle levels, discord and discontentment at the lower level can be converted to *accommodation*.

Third party audits

The model that we have evolved consists of: three organizational levels within labor and management; three characterizations of the relationship which determine the type and severity of the problem; and three remedial approaches. However, it has not been suggested in any detail how to analyze a labor-management problem when applying the model; rather we have spoken of the mediator recognizing danger signals and observing issues and relationships, all of which implies an intuitive, ill-defined, and artistic process. This method usually provides a sufficiently accurate diagnosis in cases in which the mediator knows the parties well, or the problems are relatively obvious, or both; but in other situations a more rigorous approach is needed to apply the model. For this purpose, we will describe a diagnostic process used in organizational development and human resources development (training needs assessment).¹⁰ Discussion will center on joint training at the supervisor/steward level, but with minor modifications, the process could be used at other levels or when other remedies are proposed.

The diagnostic procedure, developed by Geary Rummler, focuses on a "human performance" audit.¹¹ For him, human performance is composed of: (1) the job situation or occasion to perform; (2) the performer; (3) the behavior (action or decisions) that is to occur; and (4) the consequences of that behavior to the performer.¹² The advantage of using a performance audit is that it forces the specific source of the undesirable behavior to be identified.

A second feature of Rummler's audit is the determination of the economic consequence of poor performance. In other words, having determined by the audit model that undesirable performance is a result of a lack of feedback to a supervisor about his or her

work, for example, the question is asked: does it *really* make any difference or enough difference to require change? The result of this questioning will be to consider first those performance problems which are most economically important to the organization.

A very sophisticated or extremely simple audit can be used, depending upon the amount of time available, the complexity of the organization, and the functions being audited. This audit of performance can be used on all three levels of labor relations concurrently, but we will apply it only to the lower level.

The basic components of the Rummler approach can be retained in a streamlined audit by using this series of questions to identify sources of the problems and to analyze them:

- I. General lead-in questions
 1. How do you know you have a problem?
 2. How will you know when the problem is solved?
 3. How long has this been a problem?
 4. How general is the problem?
- II. Questions on the job
 1. What is the desired performance?
 2. What are the job standards?
 3. Who says that these are the standards?
 4. Does everybody agree on these standards?
- III. Questions on the performer
 1. What are the specific differences between actual and expected performance?
 2. Has anyone ever performed as expected?
 3. Who?
 4. When?
 5. How many individuals are now performing below standard?
- IV. Questions on behavior
 1. Did the steward or first-line supervisor ever perform properly?
 2. Could they perform properly if their lives depended upon it?
 3. If they could perform properly, would they?
- V. Questions on the consequences of performance
 1. Does the steward or first-line supervisor whose performance is below standard know:
 - a. What is expected of him or her?
 - b. What he or she is not performing correctly and exactly how far he or she is from expected performance?
 - c. How to perform correctly?
 - d. When to perform?
- VI. Questions on feedback
 1. What positive or negative consequences, or both, of performing correctly or incorrectly can the first-line supervisor or steward expect from:
 - a. Higher ranking officials within the company or organization?
 - b. Subordinates?
 - c. Associates at the same level?
- VII. Questions on economic costs and priorities
 1. What does it cost the employer or union not to reme-

dy the performance problem?

2. What is the priority on remedying any performance problem?

A few examples will illustrate how these questions produce relevant information on performance and economic priorities:

- Under II, questions 1, 2, and 3 could lead one to discover that the union policy is unclear on whether a steward is expected to anticipate and solve problems before they become formal grievances.
- Under III, question 5 could disclose that first-line supervisors in only 2 departments in 20 have performance problems.
- Under IV, questions 2 and 3 could reveal that motivation and interest are the source of the performance problem, not knowledge or skill.
- Under V, question 1 could divulge that the first-line supervisor is aware of only one-third of the tasks expected of him or her.
- Under VI, question 1 might reveal that the steward gets no positive feedback on his or her performance.
- Under VII, question 1 might show that the failure to properly investigate a grievance, prior to committing it to writing, doubled the length of time required to process it through the first two steps of the grievance procedure.

When the audit is completed, the mediator will have a complete list of the performance problems in the area under study, which will include an identification of the sources of the problems, and economic priorities based on the cost of the problem to the organization.

Following an analysis of this list, the mediator could act as an adviser to labor and management in determining the appropriate remedy. Some problems are more susceptible to a training solution, others to a labor-management committee or a Relationships by Objectives program, and some will require structural and policy changes. In each instance, the mediator will work with the parties to resolve the performance problem and improve their relationship.

Conclusions

Before any labor-management relationship can be improved, the parties to that relationship must both be dissatisfied with the status quo and have before them some blueprint which, if followed, has a reasonable chance of succeeding.^{13 14} In many cases, labor-management relationships are operating at a suboptimal level. This can happen for many reasons; for example, one or both sides prefer it that way, they are not prepared to incur the political or economic costs they attach to improvement, they do not know how to gain the necessary credibility to move jointly forward, or they simply do not know what to do.

Often a trusted third party can diplomatically allow the parties to focus on shortcomings in a relationship, by minimizing political and economic costs of change,

promoting trust and cooperation, and assisting both sides in developing a roadmap which, if followed, should lead to a positive, constructive relationship. □

—FOOTNOTES—

¹ Section 203 (A) of the Taft-Hartley Act states: "It shall be the duty of the Service, in order to prevent or minimize interruptions, of the free flow of commerce growing out of labor disputes, to assist parties to labor disputes in industries affecting commerce to settle such disputes through conciliation and mediation."

During the discussion on the floor of the Senate of Bill S.1126 (subsequently compromised to become the Taft-Hartley Law), Senator Irving Ives of New York made the statement: "A great lack at the present moment in the field of mediation is measures by which we may prevent industrial strife as well as cure it after it has begun. That, of course, is contemplated under the new title." (*Congressional Report*, p. 4,590, 5-6-47.)

² It is interesting to note that the Federal Mediation and Conciliation Service Preventive Mediation function started during the same period (late 1940's) as the early applications of contemporary behavioral science to organization and management. But there is little evidence that the service benefited in any systematic way from developments within behavioral science until the 1970's. The introduction of the Relationships by Objectives program in 1975 (see discussion on p. 17 of this article) was influenced by the work of Blake and Mouton, particularly Robert R. Blake, Herbert A. Shepard, and Jane S. Mouton, *Managing Intergroup Conflict in Industry* (Houston, Gulf Publishing Co., 1964), p. 210; and Robert R. Blake, Jane S. Mouton, and Richard L. Sloma, "The Union-Management Intergroup Laboratory: Strategy for Resolving Intergroup Conflict," in Warner Burk and Harvey A. Hornstein, eds., *The Social Technology of Organization Development* (Fairfax, Va., NTL Learning Resources Corporation, 1972), pp. 101-26.

This lack of behavioral science influence on preventive mediation during these 30 years is understandable because Federal Mediation and Conciliation Service mediators are pragmatic individuals caught up in practicing their art; they are not inclined to seek help or guidance from theorists and academics. Moreover, even the behavioral scientist makes limited claims for the application of his work to the practitioner. See George Strauss and others, eds., *Organizational Behavior: Research and Issues* (Madison, Wis., Industrial Relations Research Association Series, 1974), p. 2, which quotes with approval Harold L. Wilensky, writing on the same subject in 1957: "Not everything done by the social scientist can or should help the practitioner . . . the social scientist's job is basically different from the executive's job . . . much of what he comes up with is of limited use to the practitioner."

Writing 5 years later on the question, "Can Social Psychology Contribute to Industrial Relations?" Strauss said, "From 1960 on, psychological contributions to industrial relations were almost nonexistent . . ." See Geoffrey M. Stephenson and Christopher J. Brotherton, eds., *Industrial Relations: A Social Psychological Approach* (Chichester, England, John Wiley & Sons, 1979), p. 371.

³ The views expressed do not necessarily reflect those of the Federal Mediation and Conciliation Service.

⁴ A similar continuum of labor-management relations consisting of armed truce, working harmony, and union-management cooperation was proposed in Frederick H. Harbison and John R. Coleman, *Goals and Strategy in Collective Bargaining* (New York, Harper & Brothers, Publishers, 1951), p. 19.

Another more complex model for analyzing labor-management relations is described in Leon Meggison and C. Ray Gullett, "A Predictive Model of Union-Management Conflict," *Personnel Journal*, June 1970, pp. 495-503.

⁵ See Benjamin M. Selekman, Sylvia K. Selekman, and Stephen H.

Fuller, *Problems in Labor Relations* (New York, McGraw-Hill Book Co., 1950), p. 7.

⁶ "Problems," p. 8.

⁷ $D=L^G$ where D is the number of diagnostic outcomes, L is the number of levels in the organization (3), and G is the number of possible characterizations of the relationship between the parties (3). Hence, $D=3^3$ or 27.

⁸ However, it should be noted that a very bad relationship (conflict) may exist at a lower level even though there is a very good one at the next higher level (accommodation). Two generals can be pursuing peace while the battle rages.

⁹ For more background on Relationships by Objectives program, see John J. Poplar, "Labor-Management Relations: U.S. Mediators Try to Build Common Objectives," *World of Work Report I*, September 1976, pp. 1-3; Thomas A. Kochan, *Collective Bargaining and Industrial Relations* (Homewood, Ill., Richard D. Irwin, Inc., 1980); and Anthony V. Sinicropi, David A. Gray, and Paula Ann Hughes, *Evaluation of the Federal Mediation and Conciliation Service's Technical Assistance Program in Labor-Management Relationships by Objectives (RBO)*, unpublished, Federal Mediation and Conciliation Service, 1978.

¹⁰ In the field or in organizational developments there are a number of diagnostic processes for searching out and assessing organizational problems. See for example: Robert R. Blake and Jane S. Mouton, *Corporate Excellence Diagnosis: The Phase 6 Instrument* (Austin, Tex., Scientific Methods, 1968); J. Richard Hackman and Greg R. Oldhan, "Development of the Job Diagnosis Survey," *Journal of Applied Psychology*, 1975, vol. 60, pp. 159-70; Ralph H. Kilmann and Kenneth W. Thomas, "Four Perspectives on Conflict Management: An Attributional Framework for Organizing Descriptive and Normative Theory," *Academy of Management Review*, 1978; vol. 3, pp. 59-68; John P. Kotter, *Organization Dynamics: Diagnosis and Intervention* (Reading, Mass., Addison-Wesley, 1978); Paul R. Lawrence and Jay W. Lorsch, *Developing Organizations: Diagnosis and Action* (Reading, Mass., Addison-Wesley, 1969); Harry Levinson, *Organizational Diagnosis* (Cambridge, Mass., Harvard University Press, 1972); and Rensis Likert, *The Human Organization: Its Management and Value* (New York, McGraw-Hill Book Co., 1967).

¹¹ Geary A. Rummler, "The Performance Audit," in Robert L. Craig, ed., *Training and Development Handbook* (New York, McGraw-Hill Book Co., 1976, 2d ed.).

¹² Rummler, "The Performance Audit."

¹³ Dissatisfaction with the status quo is found in organizational development efforts: "The fundamental reason some crisis or pressure seems to be so important in setting the stage for change is that it creates a state of readiness and motivation to change. Kurt Lewin called this the 'unfreezing stage' at which old beliefs, values, and behaviors lose strength in the face of data that disconfirm the manager's (unionist's) view of his (their) organization's effectiveness." Michael Beer, *Organization Change and Development: A Systems View* (Santa Monica, Calif., Goodyear Publishing Co., 1980), p. 48.

¹⁴ The need for a plan in order to facilitate change is also found in the Organizational Development literature: "Successful change efforts require new models for looking at organizational problems and/or new ideas for structuring or managing the organization. New models may come in the form of a new organizational design, accounting system, planning systems, or personnel policy." (See Beer, "Organizational Change," p. 50.)

Millwork industry shows slow growth in productivity

During 1958–80, output per hour advanced at half the rate of growth for all manufacturing industries, reflecting unstable demand and low capital investment

JACK VEIGLE AND HORST BRAND

Labor productivity in the millwork industry rose at an average annual rate of 1.4 percent from 1958 to 1980,¹ a modest advance when compared with total manufacturing. Over this period, output in millwork increased at a rate of 2.7 percent annually and employee hours at 1.3 percent. The productivity rise partly reflected low growth in capital investment, particularly over the past decade, and evidently slow diffusion of modernized production technologies. These factors, combined with instability in demand for the industry's products, retarded productivity. Industry demand depends mostly upon residential construction, where fluctuations have been frequent and substantial.

The overall rate of increase in the productivity of the millwork industry reflects basically two periods in each of which the productivity movements differed significantly. Between 1958 and 1972, productivity rose at an average annual rate of 2.6 percent, rising 42 percent by 1972, to a high for the period (107.2 on a 1977=100 basis). However, from 1972 to 1980, productivity declined at a rate of 1.4 percent a year, or by 13 percent. By contrast, productivity in the private nonfarm business economy continued to advance, although at a slower rate than earlier. The following tabulation shows the pertinent comparisons (average annual rates, in percent):

	1958–80	1958–72	1972–80
Millwork industry	1.4	2.6	-1.4
Private nonfarm business . . .	1.8	2.1	0.9
Manufacturing	2.8	3.1	1.8

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Year-to-year changes in millwork productivity were quite volatile, ranging from a 12-percent rise (in 1967) to a 9-percent drop (in 1974). Productivity declined in 8 of the 22 years surveyed. In such years, output either fell more than employee hours or rose less. In 10 of the years of rising productivity, output gains exceeded employee hour increases. But in the other years of rising productivity, productivity improvements were associated with output declines being smaller than employee hour reductions.

Output and demand

The millwork industry manufactures wood window units, including sashes; window frames; doors and door frames; moldings; and stairs. In 1977, one-quarter of the industry's output consisted of window units and related items; and close to two-fifths of doors, including garage doors. Moldings represented another fifth of output. Approximately three-fourths of the industry's output was used in residential housing, including additions and alterations; small amounts of output were used in commercial and educational buildings, prefabricated wooden buildings, and in trailers and other transportation equipment. Millwork output is thus linked mainly to residential construction markets.

Output of millwork products rose at an average annual rate of 2.7 percent between 1958 and 1980, about in line with the trend in the deflated value of new residential housing units plus additions and alterations. Output movements during the period were characterized by differences in average annual rates of change between 1958–72 and 1972–80, which were similar to the variations in productivity movements noted above. During

1958-72, output rose 3.6 percent annually, in 1972-80 it declined 0.9 percent a year. Millwork output fluctuated generally less on a year-to-year basis than residential building activity. The lesser amplitude of millwork output fluctuations may partially relate to inventorying practices of jobbers through whom much of industry sales are conducted.

Millwork output was strengthened, particularly during the 1960's, by increases in the square foot area of single-unit housing—indicating more rooms as well as larger room size, hence more doors, windows, and moldings. During the study period, square foot area per housing unit rose more than 20 percent.² While the number of 1 to 3 room housing units being added to the housing stock declined between the 1960's and 1970's, additions to 4- and 6-room units grew strongly; the increment in 5-room units remained roughly the same. Units with 7 rooms or more recorded particularly strong increases during the 1970's. However, multi-unit dwellings gained in relative importance during the early and mid-1970's, when apartment construction rose to 37 percent of all private housing starts, up from 33 percent in the 1960's. Because only a relatively small proportion of millwork output is used in such construction, the sharp increase in multi-unit starts probably offset somewhat the demand from single-unit residential starts. (For example, more than 80 percent of window units installed in apartment buildings are of aluminum,

as against 50 percent for 1- and 2-unit residences.)³

There were other factors pertaining to housing which sustained millwork output during most of the period studied. For example, the number of homes built with two stories or more, 17 percent of total starts in 1964, rose to 28 percent in 1978, indicating a greater demand for stairs, moldings, and other millwork items. The proportion of homes built with 1- and 2-car garages grew from 63 percent in 1963 to 74 percent in the late 1970's—spurring the demand for garage doors, an estimated 85 percent of which are made of wood.⁴

The demand for window units has of course fluctuated with housing starts. On balance, it rose substantially during the 1960's, and fell off somewhat in the 1970's. Demand in the 1970's was also crimped by a decline in the number of windows per dwelling unit, partially associated perhaps with builders' efforts to make homes more energy efficient; and by competition from aluminum and steel windows. Currently, the millwork industry accounts for one-third of all residential window installations, aluminum and, to a small extent, steel, making up the other two-thirds. Except for 2 years in the mid-1970's, when aluminum window prices rose relative to wooden ones, the industry's share of the window market has steadily declined from roughly one-half of the total in the late 1950's.⁵

Growth in the industry's output of doors has also been slowed by competitive materials. The industry

Table 1. Productivity and related indexes for millwork industry, 1958-80

[1977 = 100]

Year	Output per hour			Output	Employee hours		
	All employees	Production workers	Nonproduction workers		All employees	Production workers	Nonproduction workers
1958	75.6	77.0	70.7	58.5	77.4	76.0	82.8
1959	71.7	72.4	69.7	61.2	85.3	84.5	87.8
1960	73.2	74.8	67.7	55.7	76.1	74.5	82.3
1961	76.9	78.1	72.6	56.6	73.6	72.5	78.0
1962	78.1	78.8	76.3	59.7	76.4	75.8	78.2
1963	86.0	86.0	86.5	68.1	79.2	79.2	78.7
1964	86.0	85.9	87.2	69.2	80.5	80.6	79.4
1965	85.8	86.1	85.2	70.2	81.8	81.5	82.4
1966	82.7	84.0	78.4	66.6	80.5	79.3	84.9
1967	92.6	93.3	90.1	72.6	78.4	77.8	80.6
1968	93.9	93.7	96.0	78.7	83.8	84.0	82.0
1969	96.3	96.6	95.7	80.4	83.5	83.2	84.0
1970	95.9	97.6	89.7	77.1	80.4	79.0	86.0
1971	95.9	95.3	99.3	84.0	87.6	88.1	84.6
1972	107.2	104.5	121.6	103.6	96.6	99.1	85.2
1973	102.3	101.6	106.7	104.7	102.3	103.1	98.1
1974	92.7	94.4	85.5	84.6	91.3	89.6	99.0
1975	100.2	102.6	90.9	84.1	83.9	82.0	92.5
1976	99.1	99.6	97.3	92.5	93.3	92.9	95.1
1977	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1978	91.5	91.5	92.0	96.2	105.1	105.1	104.6
1979	93.9	95.2	88.2	96.2	102.5	101.1	109.2
1980	93.7	97.2	80.4	87.1	93.0	89.6	108.4
Average annual rates of change (in percent)							
1958-80	1.4	1.4	1.3	2.7	1.3	1.3	1.4
1975-80	-1.7	-1.4	-2.8	0.7	2.4	2.2	3.6

accounted for close to three-fifths (by value) of all doors installed in new residential dwelling units in 1977, a slight decrease from earlier years.

Inroads into millwork's share of residential door installations have come chiefly from the wider use of steel for front and other exterior doors. In 1979, wood flush and panel doors accounted for 44 percent of all front door installations, compared with 68 percent in 1974 (the earliest year for which data are available). Displacement of wood by steel was similarly marked in the case of other exterior doors.⁶ These tendencies have been somewhat offset by a slight but steady rise in recent years in the number of doors installed per dwelling.⁷

Whether industry output benefited from a continued shift from onsite carpentry of millwork items to factory production over the period cannot be readily determined. According to a BLS survey conducted in 1969, preassembled windows were installed in 78 percent of surveyed single-family houses built that year; and in 1968, prehung doors in 64 percent, and prefabricated staircase units in 25 percent.⁸ No other such survey is available for the period examined here.

Window sashes and doors have been manufactured for more than a century, but most work was done onsite. Large-scale offsite production did not get underway until the 1930's and early 1940's, when a shift from onsite carpentry of millwork occurred.⁹ Mass production of millwork was subsequently spurred by the large post-war demand for residential housing. Such product innovations as prehung doors (a door hinged on its frame, and delivered ready to be placed in the openings of the unit under construction) furthered the trend to factory production of items heretofore carpentered or finished at the site.¹⁰ But no definitive data are available indicating the extent to which these developments raised the output of the millwork industry.

Employment increases moderately

Employment in the millwork industry, currently numbering 74,000 persons, rose at an average annual rate of 1.5 percent between 1958 and 1980. It peaked in 1978, when it stood 39 percent above the 1958 level. In general, it rose slightly during most of the 1960's, and more strongly in the early 1970's. Subsequent upswings and downswings were more marked than in earlier periods, reflecting similarly pronounced swings in the industry's output. Employee hours generally paralleled the trend in employment, rising at an average annual rate of 1.3 percent over the period. Average annual hours per employee in the millwork industry did not, on balance, change significantly between 1958 and 1972, and declined slightly between 1972 and 1980. Year-to-year changes were often larger for production worker employment than for production worker hours. The work-week per production worker averaged slightly less after 1972 (39.3 hours) than before (40.1 hours) indicating a

drop in overtime. Generally, overtime averaged considerably less than for durables manufacturing as a whole.¹¹

Differences in trend between production and nonproduction worker hours were not significant. But short-term fluctuations were much greater for production than for nonproduction worker employment and hours. The proportion of nonproduction workers, 18 percent in 1977, did not change materially over the study period, except for years of flagging industry output, when production worker employment weakened.

Industry employment evidences considerably higher turnover of production workers than durables manufacturing. In 1978, accessions (mostly new hires) in millwork, at 5.5 per 100 workers, were nearly two-fifths again as high as for all durables manufacturing; separations (mostly quits) were more than three-fifths again as high. High turnover rates mean a loss of trained and experienced workers¹² and more break-in periods required for newly hired workers, which may contribute to retarding productivity.

Technological developments

Millwork essentially consists of the sawing, shaping, planing, and sanding of wood to specified dimensions. The unfabricated lumber is delivered to the plant in the form of uniformly sized and quality-graded boards. Large-scale gluing operations are performed as part of the production process. Glazing is a normal part of the manufacture of windows and windowed doors.

Millwork is highly mechanized; virtually all work that transforms the lumber is done by machines. In some plants, feeding and tailing (the removal of the workpiece from the machine) are carried out manually, partly because of apprehension that a mechanized process would damage sensitive woods.

The basic technology used in millwork plants dates from the 1930's and 1940's when, as noted, large-scale production was first introduced in the industry. Factory production of millwork items antedates the 1930's, but large-scale operations were held back by the lack of waterproof, quick-curing adhesives. Moreover, millwork firms, at the time serving mostly local and regional markets, were slow in standardizing their product, hampering adoption by developers of housing projects. These obstacles began to be overcome with the innovation of synthetic resin adhesives, yielding waterproof bond.¹³ Standardization progressed. Precision machinery became more widely available, probably accelerating the shift from onsite carpentry to the factory.¹⁴ These developments also helped broaden the product lines of millwork firms. For example, complete double-hung windows mounted in prefabricated, weather-stripped frames, ready for installation at the construction site, were introduced in the 1940's and, subsequently, prehung doors.

Although the industry's basic machinery and equip-

ment reflect woodworking technologies that have existed for many decades, there are indications that much of this equipment is less than 20 years old, and that sizable proportions are 10 years old or less.¹⁵ Thus, three-fifths of the finger jointing machinery and of automatic mortisers appear to be in the lower age group, and as much as three-quarters of many types of sawing machinery. Fifty percent of door sizers, and much of the glue room equipment—including clamps and clamping machines, glue guns and pumps, and spreaders and presses—are of comparatively recent date, as is finishing equipment (for example, hot air ovens). The same holds for such general plant equipment as air conditioners, dust collectors, and computers. However, it cannot be determined from the available data whether the more recently installed—therefore, more up-to-date—equipment is well diffused throughout the industry. It is believed that diffusion is slow, partly because of the fragmentation of the industry into many firms.

A trend toward automated systems in the industry seems to be underway.¹⁶ This trend is furthered by the declining costs of numerical controls, which more and more entail one-station systems featuring microcomputers.¹⁷ That trend also involves computer-controlled material handling systems, robotized transfer and palletizing, and carousels interfacing with conveyors, robots, and other material handling devices.¹⁸ But some persons in the industry argue that automation is unlikely to make much headway in millwork because it compels a financial commitment to highly specialized equipment—a commitment which often cannot be justified because of the erratic demand for the industry's products.

Other, more narrowly focused technological advances have been made which have evidently been more readily adopted than automated equipment. For example, the versatility of machines fabricating moldings has been greatly extended so that a large variety of complex molding profiles can be cut and grooved at great speeds without loss of precision and insignificant loss in setup time.¹⁹ Ripsaws have been introduced whose sawing patterns can be controlled by instructions relayed by manipulating the shadow of an overhead wire. Stock which is free from knots and other flaws can thus be mechanically selected, eliminating a number of strenuous manual operations and resetting of the sawing machine, and reducing waste.²⁰ Solid-state sensing devices have in recent years been attached to abrasive planers, ensuring uniform surfaces. Abrasive planers were developed in an era of low-cost energy, but have become more energy-efficient, as well as faster.²¹ Hand-operated sanders have been disappearing as multifunctional sanding machines have evolved. Thus, automatic thickness settings permit ranges from bites of ¼ inch to the finest surface finish.²² A gradual shift from electrically powered to air-powered hand tools has probably also contributed to improving productivity. Air-driven hand tools are believed

to achieve job requirements more efficiently, and to be less fatiguing for the operator because of their light weight and a wider choice of such options as handles and styles.²³

Significant advances have likewise been made in adhesive applications. High-speed production requires rapid curing, and the gluing process is therefore usually an integral part of the production process. Certain radio frequency gluing devices have reduced curing time from 20 to 2 minutes, and, for example, as many as 20 door stiles can be processed at the same time. The saving in labor requirements made possible by this process has been estimated at 35 percent.²⁴ Bonding strength, too, has been increased, permitting the elimination of clamping in some operations (clamping has usually been regarded as a bottleneck in high-speed millwork assembly where gluing is required).²⁵

Capital expenditures

New plant and equipment spending by the millwork industry went up fairly rapidly between 1963 (when pertinent data first became available) and 1978. In terms of constant dollars, it rose at an average annual rate of 4.7 percent.²⁶ However, the annual increase between 1963 and 1972, 9.4 percent, by far exceeded that for 1972 to 1978—1.2 percent. Significantly, outlays for buildings and other structures rose at nearly the same rate as for equipment during the former period, but declined during the latter. Capital spending by the industry showed at times huge year-to-year swings, induced most likely by fluctuations in demand for the industry's product from residential construction. Comparisons with trends in the private economy's fixed investment outlays follow (average annual rates of change, in percent).²⁷

	1963-78	1963-72	1972-78
Millwork:			
Total	4.7	9.4	1.2
Machinery and equipment	6.3	10.3	0.9
Structures	1.6	8.1	-3.9
Private fixed investment:			
Total	3.6	4.6	2.4
Producer durable equipment	5.2	5.7	4.3
Nonresidential structures	0.9	3.1	-1.3

The tabulation shows that the pattern of vigorous capital spending growth in the 1960's and early 1970's in the millwork industry closely resembled that of the private domestic economy, and likewise that of meager capital spending growth in the mid-to-late 1970's. But for millwork, the slowdown was far more pronounced and spelled virtual stagnation in investment in new machinery and equipment.

New capital expenditures per employee in millwork

represented only 42 percent of the comparable figure for manufacturing as a whole in 1978. That ratio does vary widely over time because of the large fluctuations of millwork firms' plant and equipment outlays (it was 61 percent in 1972). Yet, the comparative capital intensity of millwork is somewhat understated because its firms rent a larger proportion of plant structures and equipment than other manufacturers. In 1978, rents for structure represented the equivalent of 67 percent of millwork firms' purchases of structures, and rents for equipment, 22 percent. The corresponding figures for manufacturing were 34 percent and 9 percent. When rental payments are added to millwork's total capital outlays, the per-employee ratio to manufacturing mentioned above rises to 50 percent in 1978 (and 65 percent in 1972). That still spells relatively low capital intensity, a characteristic also manifest in the low value of the industry's fixed assets per employee—it represented between 42 and 44 percent of the manufacturing average in the 1970's. In 1976, each dollar of millwork shipments required 17 cents in fixed assets, compared with 34 cents for manufacturing in general.

Size of establishments

Millwork firms are preponderantly small—70 percent employed fewer than 20 workers in 1977, and another 23 percent employed from 20 to 99 workers. In this respect—that is, in terms of the size distribution of firms by employment—millwork closely resembles manufacturing. However, the smaller millwork establishments account for a much larger proportion of total employment in the industry than smaller manufacturing firms

in general—50 versus 26 percent. The same pattern holds for the value of shipments, nearly one-half of which originated with the smaller millwork firms, compared with only about one-fifth for their counterparts in total manufacturing. Large millwork establishments—those employing 500 workers or more—recorded correspondingly smaller shares of total industry employment and shipments. The comparisons suggest that economies of scale are generally less of a factor of productivity improvement in millwork than in manufacturing.

LABOR PRODUCTIVITY IN MILLWORK should continue to advance moderately over the long term. The diffusion of automatic controls and the replacement of existing machinery with more up-to-date equipment will obviously be positive factors. But the predominance of smaller firms is likely to retard installation of automated transfer equipment, because, in their case, volume rarely justifies such equipment. Fluctuating residential building markets, and the trend toward apartment construction, will very likely continue to cause firms in the industry to be cautious in committing large funds to highly specialized automated machinery.

BLS employment projections have not been published for millwork alone, only for its industry group.²⁸ For it, a small, negative employment trend has been assumed during the 1980's. With demand from residential construction expected to expand, and industry employment to decline slightly, a moderate improvement in labor productivity is implied.²⁹ However, this progress is predicated upon the continued adoption of more advanced technologies by firms in the industry. □

—FOOTNOTES—

¹ The millwork industry has been designated as number 2431 in the 1972 Standard Industrial Classification Manual of the Office of Management and Budget. It consists of establishments which primarily manufacture such millwork products as moldings, wooden doors, windows, shutters, blinds, and awnings; and other architectural millwork items. All average annual rates of change are based on the linear least squares trend of the logarithms of the index numbers. The indexes for productivity and related variables will be updated annually and published in the annual BLS Bulletin, *Productivity Indexes for Selected Industries*.

² The data on average square foot are per single-unit dwelling, number of rooms and stories, and other examples mentioned in this and the following paragraph are from the following sources: *Characteristics of New One-Family Homes, 1968*; *Characteristics of New Family Housing: 1978*, both published by the Bureau of the Census, U.S. Department of Commerce, and U.S. Department of Housing and Urban Development, Washington, D.C.; James W. Myrtle, "Characteristics of New Housing," *Construction Review*, April 1979, pp. 4-9; Abraham Goldblatt, "Profile of New One-Family Homes," *Construction Review*, February 1973, pp. 4-8; and *Statistical Abstract of the United States, 1980* (Government Printing Office, 1980), p. 791.

³ *Architectural Aluminum Industry Statistical Review* (Chicago, Architectural Aluminum Manufacturing Association, 1980), Table 14.

⁴ Based on information from Housing Industry Dynamics, Crofton, Md.

⁵ See footnote 3.

⁶ Based on information from Housing Industry Dynamics.

⁷ *Architectural Aluminum Industry Statistical Review, 1980*.

⁸ Robert Ball, *Labor and Material Requirements for Construction of Private Single-Family Houses*, Bulletin 1755 (Bureau of Labor Statistics, 1972), p. 22.

⁹ Information from William B. Lloyd, author of *Millwork: Principles and Practices* (Chicago, Cahners Publishing Company, 1966).

¹⁰ *Millwork*, p. 208.

¹¹ The majority of millwork production workers hold jobs as machine and materials handling operators and assemblers. *Industry Wage Survey: Millwork, June 1979*, Bulletin 2083 (Bureau of Labor Statistics, 1980).

¹² Some effects of high turnover rates are discussed by Peter Henle, "Economic Effects: Reviewing the Evidence," in Jerome M. Rosow *The Worker and the Job* (Englewood Cliffs, N.J., Prentice-Hall, 1974), p. 125.

¹³ *Millwork*, p. 8.

¹⁴ *Millwork*, p. 8. Hours worked by carpenters in building a 1-family dwelling have undoubtedly declined, and the decline in part points to a shift of the work conventionally performed by the carpenter to manufacturing. Thus, according to the BLS publication cited in footnote 8, there were 29 onsite carpenter hours required per 100 square feet of a 1-family house in 1969. According to studies done by the BLS for 1-family frame houses built in 1946-47, onsite carpentry then required

about 70 hours per 100 square feet. The decline implied in the number of onsite carpenter hours may have partly occurred because of differences in survey methods, the type of houses selected, and other technical or statistical factors. Moreover, part of the decline may be attributable to productivity improvements in carpentry. Nevertheless, a significant portion of the decline is likely to have been linked to shifts to factory production of carpentering work, including here millwork items, as well as roof trusses, plywood subflooring, and so forth. See Edward M. Gordon, "House Construction: Man-Hours by Occupation, 1946-47," *Monthly Labor Review*, December 1948, pp. 611-14; and Adela L. Stuckey, "Labor Share in Construction Costs of New Houses," *Monthly Labor Review*, May 1949, pp. 517-20.

¹⁵ *An Inventory of Machines and Equipment in the Woodworking and Furniture Market*, issued by *Woodworking and Furniture Digest*, Wheaton, Ill., 1979. *An Inventory* presents the number of woodworking machines, by type, for each woodworking industry (as classified by the Standard Industrial Classification Manual). In a separate presentation, *An Inventory* shows the age breakdown of each type of woodworking machinery, but the age breakdown is not grouped by industry. The discussion in the text assumes that the age breakdown applies to machinery in the millwork industry where this industry accounts for a relatively large proportion of a given type of woodworking machinery. The authors of *An Inventory* believe this assumption to be valid.

¹⁶ *Woodworking and Furniture Digest*, February 1976, p. 65.

¹⁷ *Woodworking and Furniture Digest*, August 1978, p. 83.

¹⁸ *Woodworking and Furniture Digest*, July 1981, pp. 14-19.

¹⁹ Industry source.

²⁰ Industry source.

²¹ *Woodworking and Furniture Digest*, August 1978, p. 83; May 1981, p. 16.

²² *Woodworking and Furniture Digest*, May 1981, p. 16.

²³ *Woodworking and Furniture Digest*, February 1981, pp. 10-19.

²⁴ Industry source.

²⁵ *Woodworking and Furniture Digest*, August 1978, p. 83 ff.; January 1981, pp. 10-19.

²⁶ Constant-dollar capital expenditures were derived by deflating the current-dollar census data on the millwork industry's new capital expenditures by the implicit price deflators for fixed investment, shown on p. 236 of *Economic Report of the President*, January 1981.

²⁷ The rates for private fixed investment (in 1972 dollars) are derived from Table B-2, *Economic Report of the President*, January 1981.

²⁸ The millwork industry is part of SIC 243, which includes veneer, plywood, and structural wood members. It accounts for about 35 percent of SIC 243 in terms of employment.

²⁹ See Data Resources, Inc., *U.S. Long-Term Review*, Spring 1982, p. 11.20; and Valerie Personick, "The outlook for industry output and employment through 1990," *Monthly Labor Review*, August 1981, especially p. 34.

APPENDIX: Measurement techniques and limitations

Indexes of output per employee hour measure changes in the relation between the output of an industry and employee hours expended on that output. An index of output per employee hour is derived by dividing an index of output by an index of industry employee hours.

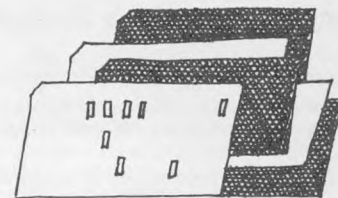
The preferred output index for manufacturing industries would be obtained from data on quantities of the various goods produced by the industry, each weighted (multiplied) by the employee hours required to produce one unit of each good in a specified base period. Thus, those goods which require more labor time to produce are given more importance in the index.

In the absence of adequate physical quantity data, the output index for this industry was constructed by a deflated value technique. The value of shipments of the various product classes were adjusted for price changes by appropriate Producer Price Indexes to derive real

output measures. These, in turn, were combined with employee hour weights to derive the overall output measure. The result is a final output index that is conceptually close to the preferred output measure.

Employment and employee hour indexes were derived from data published by the Bureau of the Census because BLS data were not available. Employees and employee hours are each considered homogeneous 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 hour do not measure any specific contributions, such as that of labor or capital. Rather, they reflect the joint effect of factors such as changes in technology, capital investment, capacity utilization, plant design and layout, skill and effort of the work force, managerial ability, and labor-management relations.



The aging of the older population and the effect on its labor force rates

PHILIP L. RONES

Changes in labor force measures are not always easy to interpret. For instance, a rise in the unemployment rate over time is generally interpreted as meaning that it has become more difficult for an individual to find a job. But, that is not necessarily the case. The unemployment measure could show an increase over a long-term period even though the rates for each specific labor force group (by age, sex, and race) either remained stable or declined. This would occur if groups which typically have higher than average unemployment rates retained those rates as their proportion of the labor force increased. The increase in the aggregate measure, then, could stem from either a change in the age distribution of the population or changes in the labor force participation rates for specific groups.¹

Probably the most widely used measure of the labor market status of older workers is not the unemployment rate but, rather, the labor force participation rate. This statistic has been closely followed in recent years because labor force activity of older workers affects social security and private pension outlays, and also could reflect the impact of mandatory retirement legislation. The participation rate for men age 55 and older has declined markedly in the post-World War II period, from 70.7 percent in 1948 to 44.5 percent in 1981, largely reflecting this group's improved financial ability to retire. During the same period, the participation rate for women age 55 and over rose from 17.2 to 22.7 percent, but that gain was far less than that registered by younger women.

In the last 2 years, a fall in participation rates for older persons of both sexes has accelerated, following 3 years of relatively slow decline. This has occurred despite changes in age discrimination laws and high rates

of inflation, factors which many observers expected to provide upward pressure on participation. This recent labor force trend has spurred a rise in interest regarding the nature and causes of declining participation among older workers.

One possible explanation is that the fall in participation, particularly in recent years, might be partly the result of the aging of the older population. Basically, this is the converse of the argument that has been used to explain part of the rise in the unemployment rate. The rationale is that the oldest groups within the elderly population, those with the lowest participation rates, have been increasing as a proportion of the elderly and are receiving more weight in the overall calculation.

To examine the validity of this proposition, population and labor force data from the Current Population Survey (CPS) for men and women by single years of age were obtained for 1968, 1972, and 1981. Each year was selected for an important reason: 1968 is the first full year for which single-year-of-age data were tabulated using the civilian noninstitutional population concept; 1972 is the first year that the CPS used 1970-based population controls (rather than those projected from the 1960 census results); and 1981 is the most recent date for annual average data and also is the first year that 1980 census-based population estimates were available.

The census data themselves were not used because the single-year-of-age tabulations refer to *total* population, while the CPS, beginning in mid-1967, uses civilian *noninstitutional* population. This distinction is critical because of the rapid rise in the institutional population of the elderly (mostly in nursing homes), currently about 1.6 million people.

Analysis of the CPS data isolated the effects of three factors on changes in participation between 1968 and the two latter years (1972 and 1981). These were: (1) changes in the age-specific participation rates, (2) changes in the age composition of the population, and (3) changes attributable to "interaction", that is, changes that are not explained by the age-specific participation rates or by the age composition of the labor force. Interaction accounted for a very small portion of the total change in participation. Table 1 shows the amount of change accounted for by each of the three factors.

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Table 1. Changes in age components of labor force participation rates for men and women age 55 and older

Age and year	Average participation rate	Total change	Change due to —		
			Age specific participation rate	Age composition of population	Interaction effect ¹
Men, age 55 and over:					
1968	56.54	0.00	0.00	0.00	0.00
1972	53.36	-3.18	-3.33	.19	-.04
1981	44.47	-12.07	-11.28	-.71	-.08
Age 55 to 64:					
1968	84.26	0.00	0.00	0.00	0.00
1972	80.51	-3.75	-3.51	-.21	-.03
1981	70.63	-13.62	-13.31	-.21	-.10
Age 65 and over:					
1968	27.27	0.00	0.00	0.00	0.00
1972	24.35	-2.92	-3.13	.27	-.06
1981	18.35	-8.92	-9.15	.37	-.14
Women, age 55 and over:					
1968	25.04	0.00	0.00	0.00	0.00
1972	24.52	-.52	-.19	-.33	.00
1981	22.73	-2.31	-1.14	-1.13	-.04
Age 55 to 64:					
1968	42.44	0.00	0.00	0.00	0.00
1972	42.14	-.30	-.16	-.15	.01
1981	41.35	-1.09	-.83	-.19	-.07
Age 65 and over:					
1968	9.57	0.00	0.00	0.00	0.00
1972	9.33	-.22	-.20	-.03	.01
1981	8.01	-1.56	-1.41	-.16	.01

¹ The "interaction" effect is that part of the total change in participation not explained by the other two variables.

The amount of change in participation attributable to changes in age-specific participation rates is derived by first computing participation rates for single-years-of-age between age 55 and 74 and for age 75 and over. Then, a rate was computed using the following formula (1981 is the target year and 1968 is the base year):

$$\frac{\sum_i (r_{i81} \cdot \text{pop}_{i68})}{\sum_i \text{pop}_{i68}}$$

where:

r_{i81} is the 1981 participation rate for the *i*th age group and pop_{i68} is the 1968 civilian noninstitutional population for the *i*th age group.

Simply put, this calculation shows what the participation rate would have been in 1981 if the population distribution had been the same as in 1968. In other words, it isolates the effect of changing participation rates. For instance, for men age 55 and over, changing participation accounted for 11.28 points of the fall in participation between 1968 and 1981; therefore, their adjusted 1981 rate is 45.26 percent (56.54-11.28).

The formula used to compute the effect of changes in the population distribution is:

$$\frac{\sum_i (r_{i68} \cdot \text{pop}_{i81})}{\sum_i \text{pop}_{i81}}$$

where:

r_{i68} is the 1968 participation rate for the *i*th age group and pop_{i81} is the 1981 civilian noninstitutional population for the *i*th age group.

This calculation shows what the rates would have been in 1981 if the age-specific participation rates had remained as they were in 1968. In other words, it isolates the impact of changes in the age composition of the population. For men age 55 and over, the adjusted participation rate in 1981 was 55.83 percent, explaining only .71 point of the 12.07-point fall in participation since 1968.

Results

Among men, the change in the age structure of the 55-and-over population has had relatively little impact on the dramatic declines in participation. In fact, for men age 65 and over, the changing population distribution caused a slight rise in participation rates, indicating that the growth has been greater in the younger, not older, groups in this age cohort. The following tabulation of age distribution for men age 65 and over in 1968 and 1981 demonstrates this:

	Percent of population in—	
	1968	1981
65 and over	100.0	100.0
65	8.4	8.3
66	7.8	8.4
67	7.6	7.8
68	7.3	7.3
69	6.2	6.5
70	6.2	6.5
71	5.5	5.9
72	5.4	5.6
73	5.4	5.3
74	4.7	5.0
75 and over	35.4	33.5

The oldest age group, age 75 and over, made up a much larger proportion of all men age 65 and older in 1968, while the younger age groups predominated in 1981. The 55-to-64 group did age somewhat over the 18-year period, but only enough to explain about two-tenths of a point out of a participation rate decline that, by 1981, totaled more than 15 points.

Unlike the mixed results experienced by men, the age composition effect was consistently in the downward direction for older women.² For women ages 55 to 64 and 65 and over, the age effect was less than two-tenths of a point in both 1972 and 1981. The relatively large age effect, by 1981, in the 55-and-over group suggests a shift in population into the older (65 and over) age group. (A similar shift, causing a .71-point decline in participation, occurred among men.) However, the participation rates for older women have changed comparatively little over time and tend to be much less an issue

than those for men, which have fallen dramatically. In the years ahead, the aging of the first generation of American women who have developed a strong labor force attachment is likely to provide upward pressure on the participation rates of women age 55 and over.

The declines in participation among older workers over the last several years are particularly noteworthy, because they occurred despite increased protection against forced retirement and the prevailing high rates of inflation. The main causes of the long-term declines in participation among the elderly have been documented,³ and the declines in the last 2 years may have been intensified by the weakening economy. The changing age distribution of the older population seems to have played, at most, a very small part in these important labor force trends. □

FOOTNOTES

¹ The effect of these influences on the unemployment rate was discussed in a series of articles in the March 1979 *Monthly Labor Review*. See Paul O. Flaim, "The effect of demographic changes on the Nation's unemployment rate"; Glen G. Cain, "The unemployment rate as an economic indicator"; and Joseph Antos and others, "What is a current equivalent to unemployment rates of the past?"

² It should be kept in mind that the "aging" of the older population is limited by the use of the noninstitutional population in the calculations. Nursing home residents, who make up most of the institutional elderly, are concentrated in the oldest age groups and the vast majority are women.

³ See, for example, Philip L. Rones, "Older men—the choice between work and retirement," *Monthly Labor Review*, November 1978, pp. 3–10; or Joseph F. Quinn, *The Microeconomics of Early Retirement: A Cross Sectional View* (U.S. Department of Health, Education, and Welfare, 1975).

Occupational changes and tenure, 1981

NANCY F. RYTINA

The labor force is characterized by a relatively high degree of occupational change. Studies have shown that most workers are employed in occupations which differ from those of their fathers.¹ Occupational shifts are also quite common over the course of a worker's career. The occupation held by a worker in midlife often differs from the first occupation after leaving school.²

Although the volume of occupational mobility that occurs within a given year is much smaller, it provides an indication, on a current basis, of recent trends.

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When assembled over time, data on 1-year mobility shows changes that are important for purposes of developing vocational and higher educational programs.

Studies of 1-year occupational mobility based on data from the Current Population Survey (CPS) of January 1966, 1973, and 1978 indicated that about 1 in 10 of all workers in each year were employed in a different occupation than in the previous year.³ Much of the occupational change was concentrated among persons under age 30 who tend to "job shop" as they obtain exposure to various kinds of work.

This report presents an update of these previous studies. The data shown are based on information obtained in the January 1981 Current Population Survey and relate to the occupations of workers in that month and in January 1980. Workers who changed occupations are defined as those employed in both January 1980 and January 1981, but in a different "three-digit" census occupation in January 1981 than the occupation reported for January 1980. For example, a person employed as a typist in 1981 and as a stenographer in 1980 would be defined as having changed occupations, although the change occurred within the major occupational grouping—clerical workers. The occupational mobility rate used in this report refers to the number of workers who changed occupations as a proportion of the total number employed in January of 1980 and 1981.⁴

This study also presents new information on occupational tenure based on the years spent in the current occupation. These data are limited to persons employed in both January 1980 and 1981. Workers in the same "three-digit" census occupation in January 1981 as in January 1980 were asked how many years, altogether, they had "been doing that kind of work." Persons who had changed occupations were assigned to the tenure category of less than 1 year.

The data on both occupational mobility and tenure are subject to a number of limitations. Besides those normally associated with sample surveys (sampling variability and nonresponse), there may be errors associated with the retrospective reporting of the occupation a year earlier and the number of years in the same occupation.⁵ Because occupation is reported only for the months of January 1980 and January 1981, any temporary changes in occupation that occurred during the year will not be reflected in the survey results. Since the tenure question was asked only of persons in the same occupation in January 1980 and 1981, the tenure data exclude persons employed in January 1981 but not January 1980, as well as any years spent in the occupation prior to 1980 for persons not in the same occupation in both January 1980 and 1981. Moreover, the information on tenure was collected in a combination of single and multiyear intervals, thus making it difficult to obtain reliable estimates of mean or median tenure.⁶

Workers who changed occupations

Of the 88.3 million employed workers 18 years of age and over and not in school in January 1981, 9.5 percent reported employment in a different occupation in January 1980. Eighty-one percent had been in the same occupation and the remaining 9 percent had either been unemployed or not in the labor force the previous January. The occupational mobility rate stood at 10.5 percent. Both the distribution of labor force status in the previous year and the mobility rate are not much different from the CPS data reported for 1966, 1973, and 1978.

In 1981, as in earlier years, age was the factor most associated with occupational change. Of the total 8.4 million workers who shifted occupations between January 1980 and January 1981, 70 percent were under age 35, although this age group accounted for only 46 percent of the labor force in January 1981.

Not surprisingly, occupational mobility rates declined sharply with age (table 1). The rate for workers age 35 to 44 was less than one-fourth as high as that for workers 18 and 19 years of age. High rates of occupational mobility among young workers are accounted for by a number of factors. Upon completion of school, young persons often try several fields of employment before settling into a career. Also, as many of them make changes in residence and living arrangements, they also change occupations. In contrast, occupational change among older workers occurs less frequently because of attachments to a particular occupation or the risks of losing income, job security, and pension rights, which might accompany an occupational shift.

Mobility rates by age were much the same as in the earlier CPS surveys. Standardizing the mobility rates by age in 1966 and 1981 suggests that the slightly higher rate observed in 1981 (10.5 versus 8.8) was almost entirely a result of the increased proportion of young persons in the work force.⁷

Differences in occupational mobility by sex are quite small relative to age differences. For both men and women, mobility rates decreased with age (table 1). Women, however, have a slightly higher mobility rate than men (11.4 versus 9.9 percent). Since 1966, the mobility rate for women has risen substantially, up from 6.6 percent. An increase is to be expected because of the entry into the labor force of women from younger age groups which have always had higher mobility rates. However, standardizing for age indicates that over 70 percent of the increase was attributable to changes in mobility within specific age groups.⁸ The rise in the rate of occupational change for women reflects their shift into professional and managerial occupations as well as their increased employment in clerical jobs where the rate of occupational change has traditionally been high.

In contrast, the mobility rate for men in 1981 was at the same level as in 1966. The 1981 male rate, however, probably would have been slightly lower were it not for the increase in the proportion of young men in the labor force.

Occupational mobility rates do not differ much by race and ethnicity. Among men, the rate is slightly higher among Hispanics partly because they are younger than either whites or blacks. The rate for white women is higher than that for either black or Hispanic women and this difference is evident among most age groups.

The reason given for changing one's occupation is one factor which is not strongly related to age (table 2). Close to 43 percent of all workers reported better pay as the most important reason for shifting occupations.⁹ Better pay is cited more frequently than any other reason among all age, sex, race, and ethnic groups except workers ages 55 and over. A larger percentage of older workers cited "other" reasons (presumably retirement from the previous occupation) than better pay. The recession of 1980 may have some bearing on the fact that

Table 1. Occupational mobility between January 1980 and January 1981 of employed persons, by age, sex, race, and Hispanic origin, January 1981

Characteristic	Total employed in January 1981		Status in January 1980				Occupational mobility rate ¹
	Number (in thousands)	Percent	Same occupation	Different occupation	Unemployed	Not in labor force	
Total, 18 years and over, not in school	88,334	100.0	81.0	9.5	3.3	6.1	10.5
Men							
Total, 18 years and over, not in school	50,502	100.0	83.8	9.2	3.2	3.7	9.9
18 and 19 years	1,581	100.0	43.3	21.4	8.5	26.8	33.1
20 to 24 years	6,202	100.0	63.5	19.3	7.1	10.1	23.3
25 to 34 years	14,735	100.0	82.4	11.6	3.2	2.7	12.4
35 to 44 years	10,746	100.0	89.1	7.2	2.4	1.3	7.4
45 to 54 years	9,047	100.0	92.6	4.3	2.2	.9	4.4
55 to 64 years	6,503	100.0	93.2	3.4	1.5	1.8	3.5
65 years and over	1,688	100.0	91.9	1.5	1.2	5.5	1.6
White	45,460	100.0	84.1	9.3	3.0	3.6	10.0
Black	4,199	100.0	82.0	8.1	5.3	4.6	9.0
Hispanic origin	2,755	100.0	79.0	11.0	4.4	5.7	12.2
Women							
Total, 18 years and over, not in school	37,832	100.0	77.2	10.0	3.5	9.3	11.4
18 and 19 years	1,449	100.0	37.8	21.8	8.9	31.4	36.6
20 to 24 years	5,754	100.0	61.9	18.0	6.0	14.2	22.5
25 to 34 years	10,916	100.0	73.8	11.9	3.9	10.4	13.9
35 to 44 years	7,970	100.0	82.3	8.1	2.5	7.1	8.9
45 to 54 years	6,526	100.0	87.5	5.4	2.3	4.8	5.8
55 to 64 years	4,212	100.0	91.9	2.6	1.5	4.1	2.7
65 years and over	1,005	100.0	90.1	1.6	.7	7.6	1.8
White	33,022	100.0	76.8	10.3	3.1	9.8	11.9
Black	4,050	100.0	80.7	7.5	6.3	5.5	8.4
Hispanic origin	1,804	100.0	74.5	7.8	5.6	12.1	9.5

¹ Percent of persons employed in both January 1981 and January 1980 who were employed in a different occupation in January 1981 than January 1980.

Table 2. Reasons for occupational change for persons employed in a different occupation in January 1981 than January 1980, by sex, age, race, and ethnicity

[Percentage distribution]

Workers who changed occupations	Number (in thousands)	Total	Change from job held in school	Better pay, full-time work	Lost job, laid off	Dissatisfied, underutilized	Working conditions	Other	Not answered
Total, 18 years and over, not in school	8,430	100.0	3.6	42.5	11.4	9.0	7.8	21.0	4.6
White	7,643	100.0	3.7	42.2	11.2	9.4	7.8	21.3	4.5
Black	642	100.0	3.3	45.0	14.5	5.9	7.8	17.6	5.9
Hispanic	443	100.0	1.6	42.0	11.4	8.5	9.6	20.8	5.9
Men, total	4,656	100.0	2.9	42.9	13.5	8.7	6.7	20.3	4.9
18 to 24 years	1,537	100.0	6.3	44.5	15.2	9.2	6.8	13.8	4.2
25 to 34 years	1,716	100.0	2.2	44.9	12.2	8.9	6.9	20.1	4.9
35 to 44 years	769	100.0	.3	44.5	14.2	9.0	5.8	21.4	4.9
45 to 54 years	389	100.0	.0	36.3	11.7	7.5	7.8	29.4	7.3
55 years and over	245	100.0	.0	23.8	12.9	4.9	7.0	45.1	6.3
Women, total	3,774	100.0	4.5	42.0	8.8	9.5	9.0	21.9	4.3
18 to 24 years	1,352	100.0	10.3	40.0	9.2	9.0	7.5	19.4	4.6
25 to 34 years	1,302	100.0	1.9	43.6	7.7	11.4	8.9	21.7	4.8
35 to 44 years	644	100.0	1.0	49.2	8.8	4.9	11.5	21.8	2.9
45 to 54 years	352	100.0	.0	36.1	10.9	13.3	10.8	24.3	4.6
55 years and over	124	100.0	.0	27.0	10.3	5.9	8.4	46.5	1.9

nearly 11 percent of all workers cited either job loss or layoff as the reason for changing occupations.

In addition, the length of time spent with the current employer is closely associated with occupational mobility. About 90 percent of all workers who changed occupations had less than a year of tenure with their current employer, compared with 10 percent of all workers who remained in the same occupation. (See article on job tenure, page 34.)

An indication of how mobility rates varied by the occupation of the employed in 1981 is provided in table 3. For both sexes, mobility rates are generally highest in those occupations with large percentages of young workers. For example, nonfarm laborers have a high mobility rate and over 50 percent of all workers moving into that occupation were under age 25. Similarly, large percentages of young workers shifted into the clerical and service occupations. An exception is the high mobility rate for women employed as managers. Almost one-fourth of women moving into this occupation were 35 to 44 years of age, in part reflecting an expansion in employment opportunities for women in management.

Some of the occupations with lower rates of mobility are those requiring high levels of education (professional) or other specialized training (craft). Declining employment opportunities in farming and the attachment to the land of those who have remained in this occupation explain the very low mobility rates for farmers and farm managers.

Evidence regarding the occupational origins and destinations of workers who changed occupations is provided in table 4, which shows the occupational distribution in January 1980 for each occupation in January 1981. It is apparent that workers who changed occupations came largely from the same occupational grouping, that is, from related occupations. For exam-

ple, among professionals, 43 percent of the men and 37 percent of women had been employed in a professional occupation in January 1980. The degree of intraoccupational group shifting was also quite high for men employed as managers, craftworkers, and operatives, except transportation equipment operatives. For women, intraoccupational group shifting was particularly high among clerical workers, operatives (except transportation equipment operatives), and service workers. About

Table 3. Occupational mobility rates between January 1980 and January 1981 of employed persons, by occupation and sex

[Numbers in thousands]

Occupation	Men		Women	
	Number employed, both January 1980 and 1981	Occupational mobility rate ¹	Number employed, both January 1980 and 1981	Occupational mobility rate ¹
Total, 18 years and over, not in school	46,990	9.9	32,983	11.4
Professional, technical, and kindred workers	8,063	6.8	6,329	9.1
Managers and administrators, except farm	7,597	8.8	2,854	13.5
Sales workers	2,892	10.9	1,912	13.8
Clerical and kindred workers	2,951	13.6	11,691	12.5
Craft and kindred workers	10,069	8.3	626	10.8
Operatives, except transport	5,174	12.7	3,294	9.6
Transport equipment operatives	2,631	9.4	225	8.5
Laborers, except farm	2,477	18.6	354	16.6
Private household workers	23	(²)	616	9.6
Service workers, except private household	3,504	12.3	4,814	11.5
Farmers and farm managers	1,108	2.5	115	1.6
Farm laborers and supervisors	503	13.0	152	7.8

¹ Percent of persons employed in both January 1981 and January 1980 who were employed in a different occupation in January 1981 than January 1980.

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

60 percent of women in clerical work in January 1981 had come from that occupational group. This results partly from the high degree of skill interchangeability and employment turnover that occurs within clerical occupations.

Also, most of the shifts between occupational groupings tended to occur within the same broad fields, for example, white-collar and blue-collar occupations. About 80 percent of women and 66 percent of men employed in white-collar occupations had been employed in these occupations during the previous year. Similarly, over 70 percent of men in blue-collar occupations were employed in the same occupations a year earlier. In contrast, the proportion of women employed in blue-collar occupations is comparatively low. Not surprisingly, about one-half of women who shifted into blue-collar occupations came from the white-collar and service occupations.

Occupational tenure

An indication of occupational tenure is found by examining the distribution of the number of years spent in the January 1981 occupation for those who had been in the same occupation in January 1980. It should be noted that because the data on occupational tenure in this report are restricted to persons employed in January 1980 and January 1981, the occupational mobility rates shown in previous tables are equivalent to the proportion of workers with less than 1 year in the occupation.

Of the 80 million workers employed in both January 1980 and 1981, over one-third had been in the same occupation from 1 to 5 years (table 5). Adding to that figure those in the occupation less than 1 year indicates that close to one-half of all workers had been employed in their January 1981 occupation less than 5 years.

Tenure in the occupation is strongly linked with age.

Table 4. Persons who changed occupation: major occupational group in January 1981, by occupation in January 1980

[Percent distribution]

Sex and occupation in January 1981	Different occupation in January 1980 ¹		Professional, technical, and kindred workers	Managers and administrators, except farm	Salesworkers	Clerical and kindred workers	Craft and kindred workers	Operatives, except transport	Transport equipment operatives	Laborers, except farm	Service workers, including private household	Farmworkers
	Number (in thousands)	Percent										
MEN												
Total, 18 years and over, not in school	4,383	100.0	11.0	12.1	8.1	7.9	18.6	15.5	6.3	9.4	9.1	1.9
Professional, technical, and kindred workers	514	100.0	42.8	13.6	5.7	9.1	9.9	6.6	2.0	3.7	5.8	.8
Managers and administrators, except farm	630	100.0	15.8	32.4	14.1	8.8	9.8	4.3	3.0	4.4	6.8	.5
Salesworkers	298	100.0	6.4	23.4	24.1	12.4	10.0	6.7	5.7	4.3	5.0	2.0
Clerical and kindred workers	383	100.0	7.6	10.0	7.8	26.6	16.4	7.8	8.8	7.0	7.8	.0
Craft and kindred workers	781	100.0	5.0	6.7	5.2	5.2	34.8	17.5	6.5	11.4	6.4	1.2
Operatives, except transport	622	100.0	2.4	3.1	5.0	2.9	20.7	35.4	8.5	12.1	8.0	1.8
Transport equipment operatives	234	100.0	2.6	9.8	4.2	4.7	23.0	17.0	10.6	11.5	10.7	6.0
Laborers, except farm	419	100.0	4.5	6.7	5.2	3.1	19.1	21.9	10.2	18.6	8.6	2.4
Service workers, including private household	412	100.0	8.0	5.1	6.6	5.6	14.3	15.8	5.1	9.7	27.2	2.7
Farmworkers	90	100.0	3.3	4.4	4.4	1.1	21.1	16.7	5.6	20.0	7.8	15.6
WOMEN												
Total, 18 years and over, not in school	3,604	100.0	12.0	7.4	7.7	40.3	2.1	9.2	.6	2.1	18.0	.3
Professional, technical, and kindred workers	546	100.0	37.2	8.1	4.2	30.6	.9	3.5	.4	1.5	13.7	.0
Managers and administrators, except farm	367	100.0	15.2	20.0	12.8	38.3	1.4	3.1	.0	.8	8.4	.0
Salesworkers	257	100.0	9.7	12.8	10.5	39.3	.8	5.4	.0	3.1	18.3	.0
Clerical and kindred workers	1,388	100.0	6.5	4.9	7.6	59.8	1.8	4.5	.8	1.4	12.2	.6
Crafts, operatives including transport, nonfarm laborers, total ²	447	100.0	5.1	3.1	3.6	18.1	6.9	35.1	1.8	5.6	20.1	.4
Operatives, except transport	306	100.0	2.3	2.6	2.6	14.0	6.9	42.1	2.0	5.6	21.7	0.3
Service workers, including private household	585	100.0	6.0	5.5	9.7	23.1	1.2	11.4	.3	2.6	39.7	.7
Farmworkers	14	(³)	(³)	(³)	(³)	(³)	(³)	(³)	(³)	(³)	(³)	(³)

¹ Excludes a small number of workers with 1980 occupation not classified.

² Craftworkers, transport equipment operatives, and nonfarm laborers not shown separately

because the base in each case is less than 75,000.

³ Data not shown where base is less than 75,000.

Table 5. Occupational duration of persons employed in both January 1980 and 1981 by age, sex, race, and ethnicity

[Numbers in thousands]

Characteristic	Total employed in both January 1980 and 1981		Less than 1 year	1 up to 5 years	5 up to 10 years	10 up to 25 years	25 years or more
	Number	Percent					
Total, 18 years and over, not in school	79,973	100.0	10.5	36.9	19.2	24.6	8.7
Men	46,990	100.0	9.9	32.5	19.0	27.2	11.4
Women	32,983	100.0	11.4	43.4	19.5	20.9	4.8
White	71,225	100.0	10.7	36.4	19.0	24.8	9.1
Black	7,355	100.0	8.7	40.6	20.6	24.5	5.6
Hispanic	3,964	100.0	11.2	48.4	19.2	18.0	3.4
18 to 24 years	11,618	100.0	24.9	68.8	6.4	(¹)	(¹)
25 to 34 years	23,219	100.0	13.0	47.2	27.7	12.0	(¹)
35 to 44 years	17,550	100.0	8.0	29.5	22.0	38.7	1.6
45 to 54 years	14,829	100.0	5.0	22.3	17.3	38.9	16.5
55 years and over	12,757	100.0	2.9	16.5	13.9	33.9	32.9

¹ Rounds to zero.

Workers under age 35 were concentrated in the 1 to 5 years category, while the majority of workers age 35 and over had been in the same occupation 5 years or more.

Men had more years in the same occupation than women. The sex difference is especially pronounced at 10 years or more in the occupation. Although women have continued to gain on men in year-round employment, they experience greater job turnover. This stems partly from personal and family priorities, but also because women have remained segregated in occupations which have high rates of turnover.

In terms of race and ethnicity, the distribution of occupational tenure is relatively similar between blacks and whites compared to Hispanics. Among blacks and whites, approximately 50 percent were in the same occupation for less than 5 years, compared to almost 60 percent among Hispanics. The lower occupational tenure of Hispanics can be attributed to some degree to their lower average age and greater likelihood of employment in service, laborer, and farm occupations.

The number of years in the same occupation varied by the January 1981 occupation. Much like the incidence of occupational change, tenure of less than 5 years is more common in occupations requiring less training (operatives and laborers), transferable skills (clerical work), or high employment growth (managers for women). In contrast, tenure is relatively high in occupations with either declining employment opportunities (farmers and farm managers) or where specialized skills and lengthy training are involved (professionals for both sexes and craftworkers for men).

This report has provided an update on patterns of occupational change between 1980 and 1981 and described the distribution of occupational tenure among

various demographic groups. With the January 1981 CPS, it is also possible to examine how occupational change and tenure relate more specifically to the economic status of workers. For example, the occupational categories used here were broad and conceal sex, race, and ethnic differences in employment that might be uncovered by focusing on detailed occupations. In terms of earnings, findings from a recent study using these data suggest that the lower tenure of women accounts for just 4 percent of the male-female earnings gap.¹⁰ The January 1981 CPS data can be used to explore further these and other labor force topics. □

FOOTNOTES

¹ See Elton Jackson and Harry J. Crockett, "Occupational Mobility in the United States: A Point Estimation and Trend Comparison," *American Sociological Review*, February 1964, pp. 5-15; Peter M. Blau and Otis Dudley Duncan, *The American Occupational Structure* (New York, John Wiley & Sons, Inc., 1967); and David L. Featherman and Robert M. Hauser, *Opportunity and Change* (New York, Academic Press, 1978).

² See William H. Sewell, Robert M. Hauser, and Wendy C. Wolf, "Sex, Schooling and Occupational Status," *American Journal of Sociology*, November 1980, pp. 551-583; Rachel A. Rosenfeld, "Race and Sex Differences in Career Dynamics," *American Sociological Review*, October 1980, pp. 583-609.

³ For reports using earlier CPS data see Samuel Saben, "Occupational mobility of employed workers" (January 1965-66), *Monthly Labor Review*, June 1967, pp. 31-38, reprinted as Special Labor Force Report 84; James J. Byrne, "Occupational mobility of workers" (January 1972-73), *Monthly Labor Review*, February 1975, pp. 53-59, reprinted as Special Labor Force Report 186; and Carl Rosenfeld, "Occupational mobility during 1977" (January 1977-78), *Monthly Labor Review*, December 1979, pp. 44-48, reprinted as Special Labor Force Report 231.

⁴ This rate measures the proportion of workers who entered the occupation, not the proportion leaving the occupation held in 1980. This is only one of a number of possible measures of mobility, and it was selected because it is the same measure used in the previous studies. See footnote 3.

⁵ See Paula J. Schneider, "Evaluation of the Occupation One-Year Ago Item in the January 1973 CPS," *Proceedings of the Social Statistics Session of the American Statistical Association*, 1977.

⁶ The categories included 1 up to 2 years, 2 up to 3 years, 3 up to 4 years, 4 up to 5 years, 5 up to 10 years, 10 up to 25 years, and 25 years or more.

⁷ The 1981 mobility rates by age were standardized on the 1966 age distribution resulting in a standardized mobility rate of 9.3. Reversing the procedure, the 1966 mobility rates by age were standardized on the 1981 age distribution which resulted in a standardized mobility rate of 10.8. The average of the "rate effect" and the "age effect" shows that 97 percent of the difference between the reported mobility rates of 8.8 in 1966 and 10.5 in 1981 was due to differences in the age distributions in the 2 years. See Evelyn M. Kitagawa, "Components of the Difference Between Two Rates," *Journal of the American Statistical Association*, December 1955, pp. 1168-94. Other standardization techniques are discussed in Henry S. Shryock and Joseph Siegel, *The Methods and Materials of Demography, Vols. I and II* (Bureau of the Census, 1971). Another possible source of difference between the 1966 and 1981 rates is that there were fewer three-digit occupations listed in the 1966 CPS.

⁸ Based on age standardization. See footnote 5.

⁹ This category also includes changing occupations for advancement opportunities and full-time work.

¹⁰ See Nancy F. Rytina, "Tenure as a factor in the male-female earnings gap," *Monthly Labor Review*, April 1982, pp. 32-34.

Job tenure of workers in January 1981

FRANCIS W. HORVATH

Close to 30 percent of all workers during January 1981 had been on their jobs less than 1 year. At the same time, however, nearly one-fourth had been at the same job more than 10 years. (See table 1.) Overall, the median job tenure was 3.2 years.

This report gives the most recent summary statistics on job tenure derived from a special supplement to the January 1981 Current Population Survey and reviews some basic relationships in the data.¹

Job tenure is a measure of the length of time an employee has worked continuously for the same employer, although not necessarily in the same occupation; continuous employment is broken only by interruptions other than vacations, temporary illnesses, strikes, layoffs of less than 30 days, or other short-term absences. A person terminates his or her tenure by quitting, being laid off for 30 days or more, entering the Armed Forces, or transferring to a job in a different company.

Measurement of job tenure is affected by many of the same methodological issues which complicate other time-based indices such as unemployment duration. Just as the average duration of unemployment is not a measure of how long a person is likely to remain unemployed,² job tenure is *not* a measure of how long a person will stay with a single employer. Rather, it is an index of how long one has been with an employer as of a specific point in time. This is an important distinction, which may be illustrated by comparing the average age of a population with its life expectancy. The average age tells nothing about completed life spans; it measures only the age of those who are still living. Similarly, job tenure is an index of accumulated time on the job for those still working.

Job tenure should not be confused with occupational mobility (discussed in more detail on page 29): Job tenure is a duration concept. On the other hand, occupational mobility pertains to persons who change occupations but not necessarily employers. Also, occupational mobility is more frequently discussed in terms of rates of change, while job tenure is usually presented as a length of time.

Job tenure is influenced by both voluntary and involuntary choices. For example, the part-time and summer jobs of most young persons are not intended to be permanent. For others, especially those who work in indus-

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Table 1. Length of time on current job, workers 16 years and older, by sex, race, and Hispanic origin, January 1981

[Numbers in thousands]

Length of time on current job	Both sexes		White		Black		Hispanic origin	
	Men	Women	Men	Women	Men	Women	Men	Women
Total: Number	92,557	52,700	39,857	82,375	8,514	4,734		
Percent	100.0	100.0	100.0	100.0	100.0	100.0		
6 months or less	18.2	15.9	21.4	18.3	17.5	23.2		
7 to 12 months	9.5	8.9	10.4	9.6	8.6	11.3		
Over 1 to 2 years	11.6	10.3	13.3	11.5	11.4	13.6		
Over 2 to 3 years	9.2	8.6	9.9	9.2	8.9	10.0		
Over 3 to 5 years	12.0	11.5	12.6	12.0	11.4	13.3		
Over 5 to 10 years	15.9	16.2	15.6	15.7	18.2	14.5		
Over 10 to 15 years	9.6	10.4	8.4	9.4	11.5	7.6		
Over 15 to 20 years	5.3	6.4	3.9	5.4	5.4	3.0		
Over 20 to 25 years	3.4	4.4	2.2	3.5	2.9	2.0		
Over 25 to 30 years	2.4	3.3	1.3	2.5	2.4	.9		
Over 30 to 35 years	1.7	2.5	.7	1.8	1.2	.4		
Over 35 years	1.2	1.7	.5	1.2	.6	.2		
Median years	3.2	4.0	2.5	3.2	3.6	2.2		

tries such as construction or retail trade, regular cycles of expansion and contraction in employment can reduce the length of one's tenure.

With the termination of the BLS Labor Turnover Survey because of budget reductions, job tenure information has become an important official data source relating to labor turnover. Even though the tenure survey is conducted only every 3 to 5 years, it provides valuable insights into the magnitude of job turnover and stability in the economy.

Job tenure data can also be combined with mortality projections to provide estimates of the proportion of workers who will remain on the job for a specified number of years. For example, the data may be used to estimate how many of a company's current employees might be eligible to receive future benefits under existing pension provisions.³

Not surprisingly, young workers have the lowest levels of job tenure. Fifty percent of all teenagers working in January 1981 had been at their jobs for 6 months or less. Almost 70 percent had started their jobs within

Table 2. Median years on current job, by age, race, and Hispanic origin, and sex, January 1981

Age	All workers				White		Black		Hispanic origin	
	Both sexes		Men	Women	Men	Women	Men	Women	Men	Women
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Total, 16 years old and over	3.2	4.0	2.5	4.0	2.4	4.0	3.3	2.3	2.0	
16 to 24 years . . . . .	.8	.9	.8	.9	.8	.7	.8	.9	.9	
25 to 34 years	2.5	2.9	2.0	2.9	2.0	3.0	2.7	2.4	1.9	
35 to 44 years	4.9	6.6	3.5	6.7	3.3	6.2	5.2	3.7	3.2	
45 to 54 years	8.4	11.0	5.9	11.2	5.7	10.0	8.1	6.4	4.4	
55 to 64 years	11.9	14.8	9.1	14.9	9.1	14.4	10.3	8.6	5.8	
65 years and older	10.2	10.3	10.0	10.1	9.8	12.0	11.9	(¹)	(¹)	

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

Table 3. Median years on current job, by age, marital status, and sex, January 1981

Age	Single		Married, spouse present		Other marital status ¹	
	Men	Women	Men	Women	Men	Women
Total, 16 years old and over	1.2	1.2	6.0	3.1	4.3	3.4
16 to 24 years	.8	.7	1.2	.9	1.0	.8
25 to 34 years	2.2	2.4	3.2	2.0	2.4	1.7
35 to 44 years	4.7	6.1	6.8	3.4	5.2	3.1
45 to 54 years	10.5	10.9	11.5	6.2	6.7	4.7
55 to 64 years	16.2	14.3	15.1	9.4	10.7	8.2
65 years and older	(²)	10.7	10.3	9.8	10.9	10.0

¹ Includes widowed, divorced, and separated persons.
² Median not shown where base is less than 75,000.

the previous year. In addition to the higher exposure to layoffs or terminations that teenagers face, they are more likely to be working in temporary jobs by choice, as they attend school or sift through various jobs in search of a suitable career. Even when teenagers hold jobs that are career-oriented, their careers do not begin until formal schooling or military service is completed.

For all demographic groups shown (except men over 65 years old) successively higher age intervals show greater levels of job tenure. (See table 2.) The highest medians occur for men age 55 to 64—exceeding 14 years. Approximately 30 percent of men in this group have served the same employer for more than 25 years. At the other extreme, a basic rate of job changing seems to occur at every age level: close to 9 percent or more of the workers of all age groups with jobs in January 1981 had started them within the past year.

Men have higher overall median levels of tenure than women, 4 years compared with 2.5. (See table 2.) Part of this difference is because of the greater proportion of working women who are under age 25. Another factor is the greater likelihood of women leaving jobs to care for young children. Sharp male-female contrasts in tenure by age do not appear until after the women's prime childbearing years.

Overall, black workers had more years of job tenure than whites did in 1981. (See table 1.) White and black men had identical median job tenure of 4 years, but black women had worked longer than white women. (See table 2.) This difference may be related to the work patterns of those of childbearing age. White women with children under age 6 were less likely to be working than black women, and significantly fewer of the former were employed full time.⁴

Job tenure differences between sexes of the same race were also observed. (See table 2.) For whites, men had the longer tenure regardless of age. The largest relative difference in medians for white men and women occurred in the 35-to-44-year age group, where the female median was only about half that of men. Among

blacks, both sexes showed only slight dissimilarities in tenure from the teens to middle age; the largest difference was found among those age 55 to 64.

The inhibiting effect young children have on the worklives of wives may help account for differences in job tenure by marital status. (See table 3.) While single men and women had small relative differences in years on the job, wives had far fewer years than husbands.

Because single persons tend to be young, the typical single man or woman has accumulated a limited number of years on their current job. The median level of job tenure for both single men and women is 1.2 years, compared with about 3.1 for wives and 6 years for husbands. At most age levels below age 54, husbands have more years on the job than single men, while wives have fewer years than their single counterparts.

Firms in growing industries usually hire new persons as they expand, and these industries will thus show correspondingly low levels of job tenure. Other establishments, in areas which are stagnant or declining, do not hire as often, letting positions expire as they become vacant. If a reduction in personnel is required, it will generally be concentrated among persons with the least seniority. Each of these actions increases the observed job tenure among those still in the industry.

Table 4. Median years on current job, by occupation, industry, and sex, January 1981

Occupation and industry	Men	Women
Total, all workers	4.0	2.5
OCCUPATION		
Professional, technical, and kindred workers	4.9	3.1
Managers and administrators, except farm	5.7	3.3
Salesworkers	3.4	1.7
Clerical and kindred workers	3.4	2.4
Craft and kindred workers	4.4	3.4
Operatives, except transport	3.5	3.1
Transport equipment operatives	3.7	3.1
Nonfarm laborers	1.8	1.9
Service workers	2.1	1.8
Farmers and farm managers	17.5	9.9
Farm laborers and supervisors	2.3	4.1
INDUSTRY		
Agriculture	7.3	4.4
Wage and salary workers	2.3	1.5
Self-employed workers	16.3	8.1
Unpaid family workers	5.2	13.3
Nonagricultural industries	3.9	2.5
Wage and salary workers	3.7	2.4
Mining	2.6	—
Construction	2.4	2.1
Manufacturing	5.2	3.2
Transportation and public utilities	5.6	3.5
Wholesale and retail trade	2.2	1.5
Finance, insurance, and real estate	4.1	2.3
Service	3.1	2.6
Public administration	6.8	3.0
Self-employed workers	6.2	3.4
Unpaid family workers	(¹)	5.7

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

NOTE: Dashes indicate data not available.

Table 5. Median years on current job of women by age, marital status, and full- and part-time status, January 1981

Age	Single		Married, spouse present		Other marital status ¹	
	Full time	Part time	Full time	Part time	Full time	Part time
Total, 16 years old and over	1.6	0.6	3.4	2.3	3.4	3.6
16 to 24 years . . . . .	.8	.6	1.0	.5	.8	(²)
25 to 34 years	2.6	.9	2.4	1.2	1.7	1.2
35 to 44 years	6.2	(²)	3.8	2.4	3.2	2.3
45 to 54 years	11.9	(²)	6.7	4.8	4.8	3.8
55 to 64 years	15.3	(²)	10.7	5.8	8.7	5.5
65 years and older	(²)	(²)	11.5	7.4	11.3	8.5

¹ Includes widowed, divorced, and separated persons.

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

In addition, job tenure will also be influenced by skill level of the work force. Employers are less likely to lay off or fire skilled workers, as it costs more in hiring and training costs to replace them.⁵ Employers may try to reduce voluntary terminations of more valuable employees by linking vacation or pension benefits to increased seniority.

By industry, self-employed men in agriculture had the longest spells of job tenure. Self-employed workers in nonagricultural industries also had a high level of job tenure, although male wage and salary workers in public administration ranked highest. (See table 4.)

Since 1963, surveys have found farmers to have the longest job tenure of any occupational group. They tend to own their own farms, and remain at work regardless of cyclical fluctuations. In January 1981, median job tenure for male farmers was 17.5 years, well above that of all other occupations. Managers and administrators have the next highest level of job tenure for men, followed by professional workers. Laborers—both farm and nonfarm—have the lowest tenure on their current job. For women, the patterns by occupation are similar except farm laborers have relatively high tenure; probably these women work on family farms owned or operated by their husbands.

Tabulations of years of tenure were also compiled by full- or part-time status on one's current job. In general, part-time workers had less job tenure than full-time ones. A typical pattern is displayed in table 5, which lists job tenure for women by full- and part-time status.

For women who are widowed, divorced, or separated, relatively little difference by job status is apparent, but for wives, part-time work on the current job correlates with fewer years of tenure. Again, it seems likely that a desire to rearrange work schedules to facilitate child care is a major factor behind the relationship. □

FOOTNOTES

¹ This report is based primarily on information from a supplementary question, "When did . . . start working at his present job or business?" in the January 1981 Current Population Survey, conducted by

the Bureau of the Census for the Bureau of Labor Statistics. Most of the data relate to persons who are 16 years old and over employed in the civilian labor force in the week ending January 17, 1981. Sampling variability may be large where numbers are small. Therefore, small differences between estimates or percentages should be interpreted with caution.

Employment figures in this study differ significantly from those reported in the regular Current Population Survey (CPS) for January 1981. The primary reason for this difference is that the job tenure data are not adjusted for nonresponse as are the CPS figures. See *The Current Population Survey: Design and Methodology*, Technical Paper No. 40 (U.S. Department of Commerce, 1978), for more information.

This is the seventh in a series of reports on this subject. The latest contained data for January 1978 and appeared in the December 1979 *Monthly Labor Review*. It was reprinted with additional tabular data and an explanatory note as *Special Labor Force Report 235*, "Job Tenure Declines as Work Force Changes." There are no comparisons in this report between 1978 and 1981 median tenure data, because of a change in the procedure used to calculate the medians. The 1981 Job Tenure Survey obtained more detail than earlier ones about persons who had begun their jobs during the previous year. Such people were asked the month in which they started work with their present employers. Additional information can be obtained from the Division of Labor Force Studies.

² Norman Bowers, "Probing the issues of unemployment duration," *Monthly Labor Review*, July 1980, pp. 23-32.

³ "Job Tenure of Workers, January 1973," *Special Labor Force Report 172* provided an example of how this might be done.

⁴ Allyson Sherman Grossman, "More than half of all children have working mothers," *Monthly Labor Review*, February 1981, pp. 44-46; and unpublished tables from the March 1981 Current Population Survey.

⁵ One of the best treatments of these issues is Walter Y. Oi, "Labor as a Quasi-Fixed Factor," *Journal of Political Economy*, December 1962, pp. 538-55. Also see Donald Parsons, "Specific Human Capital: An Application to Quit Rates and Layoff Rates," *Journal of Political Economy*, November-December 1972, pp. 1120-43.

How European unions cope with new technology

STEVE EARLY AND MATT WITT

In European countries, as in the United States, computerized production systems and robots are being introduced into manufacturing plants. Electronic systems are eliminating many tasks for which workers previously were needed in warehouses, stores, banks, and insurance companies. Many secretaries, government workers, reporters, telephone operators, engineers, and technicians are working at electronic screens called video display terminals. Such changes threaten job security and could make the jobs which remain less interesting, more isolated and stressful.

Matt Witt is director and Steve Early, a former staff member, of the American Labor Education Center, Washington, D.C. Research for this report was supported by the German Marshall Fund of the United States.

European unions generally are not trying to block technological change; rather they want to be sure such change will benefit workers as well as employers. To do this, the unions are asking for: consultation before decisions are made about new technology; technology which increases rather than replaces the workers' traditional skills, and which improves rather than worsens working conditions; protection from job losses and lower pay rates; a share in the profits and social benefits created by new technology; and assurance that new technology will not be used to undermine the union. To achieve these goals, they are giving local union committees more information and power.

By using their powerful labor parties to influence government policy, European unions have already won some new rights through legislation. For example, in Norway and Sweden, unions have the legal right to complete information about proposed new technology. Union representatives attend meetings of company boards of directors, obtain all information available to those boards, and present the union's point of view. Also, national "work environment" laws give unions the power to veto workplace changes which would adversely affect job safety and health, as many new technologies do without proper design and planning.

Through collective bargaining, European unions have won additional rights. For instance, a branch of the Norwegian Iron and Metal Workers' Union, which represents blue-collar and white-collar workers at an International Telephone and Telegraph subsidiary, has won the contract right to block any new computerized system that does not meet its approval.

In Germany, a contract covering about one-third of the metal workers guarantees against a decrease in income because of changing work assignments caused by new technology. And, at American Express, which employs 1,200 workers in banks on U.S. military bases, the German banking union won a contract prohibiting involuntary layoff or transfer of workers as a result of technological change.

A new technology benefit for Civil Service unions representing 600,000 government workers in England included a 10-percent reduction in working hours.

Another benefit, bargained by many unions in Norway, Sweden, and England, provides video display terminal operators with a 4-hour per day limit on their machines—scheduled in 2 hours on, 2 hours off rotation. This system forces employers to arrange a variety of work assignments for clericals who would otherwise be restricted to their terminals.

European unions are aided in preparing bargaining proposals by knowledge gained in union-sponsored, employer-financed training programs on new technology. Unlike U.S. unions which foot the bill for most labor education, national laws in Europe require management

to pay stewards, local officers, and committee members for attending union classes.

In Sweden, Germany, Norway, and England, unions have also obtained millions of dollars in government or employer funds to pay for training courses in the new technology.

In Scandinavia, the money for training comes from national work environment or labor education funds, financed by employer contributions largely controlled by the labor movement. In West Germany and Great Britain, union training programs are subsidized by government departments of industry, research, or technology.

European unions also have obtained government or employer funds to consult with outside experts on new technology. Many unions in Norway, Sweden, and Great Britain get advice from labor-oriented computer experts from university research programs and technical institutes, such as the government-funded Norwegian Computing Center, Swedish Work Life Center, and the British Center for Alternative Industrial Technological Systems. Under a government grant, the German Metal Workers set up a national system of "innovation advice bureaus" consisting of engineers, economists, and other technicians, to help local unions evaluate and bargain over employers' new technology plans.

German unions have also been represented for several years on advisory committees which give government research and development funds to projects that improve the work environment. This allows German unions to lobby for inclusion of health and safety features into new technology at the developmental stage.

Further, German unions are seeking a requirement that they be consulted before employers and equipment suppliers are given government money to experiment with production systems, such as computerized machine tools and industrial robots.

When a local union in Europe uses its rights to respond to technological change, the results can provide quite a contrast to comparable situations in the United States. For example, metal workers at an aircraft parts plant in Kongsberg, Norway, have had far more success in coping with the introduction of computer-based machine tools than have workers at a similar plant in Lynn, Massachusetts.

At Kongsberg, the trained union technology committee received complete information before the computerized machine tools were installed. On the basis of this information, the committee insisted that machine operators already on the job be trained to do the computer programming and repairs. As a result, the machinists' skills were broadened rather than narrowed by the technological change.

In contrast, at Lynn, the equipment was installed without consultation with the union. Now supervisors or nonunion programmers handle the computer work,

thereby reducing many skilled machinists to "machine tenders" or "button pushers" with less interesting work and lower pay. Job losses for union members are possible, and any future job action by the union will be less effective. □

Cost-of-living indexes for Americans living abroad

The U.S. Department of State has computed new indexes of living costs for selected foreign cities. These indexes compare the costs (in dollars) of representative consumer goods and services (excluding housing and education) purchased at foreign posts with the costs of comparable goods and services in Washington, D.C.

In most of the foreign cities, living costs for Americans are higher than in Washington, D.C. However, in the last 2 years, relative costs have declined in many cities, as the appreciation of the U.S. dollar exchange rate offset, in part, the higher prices abroad.

For example, although prices in Switzerland increased at the same rate as in the United States, living costs were down 22 percent in Geneva—from 176 to 137—according to the May 1981 index, because 21 percent of the higher Swiss prices was offset by the appreciation of the U.S. dollar. Similarly, living costs for Americans were down 8 percent in Tokyo—from 155 to 142—according to the February 1982 index. Japanese prices rose 3 percent more than U.S. prices over the previous year, but appreciation of the dollar offset 10 percent of the higher Japanese prices.

The new index for Rome, however, shows living costs down by only 4 percent, even though the U.S. dollar exchange rate appreciated about 25 percent, because consumer prices in Rome rose 20 percent more than prices in Washington, D.C. In some countries, recent price increases have been greater than the appreciation of the dollar. For example, the new (January 1982) index for Mexico City showed U.S. dollar costs for Americans up 6 percent over the previous year because, while the dollar appreciated 12 percent versus the peso, Mexican prices rose 19 percent more than U.S. prices. (In February, the peso was devalued, and costs for Americans have sharply declined.)

It is advisable to check the prevailing exchange rates whenever using the indexes of living costs abroad because the rates are subject to sudden shifts, and different rates would substantially affect living costs in dollars.

The indexes of living costs abroad are computed in order to establish allowances for American government employees assigned to foreign posts where the cost of

Table 1. Indexes of living costs abroad, excluding housing and education, July 1982

[Washington, D.C. = 100]

Country and city	Survey date	Monetary unit	Rate of exchange per U.S. Dollar	Local index
Argentina: Buenos Aires	Aug. 1981	Peso	7350	107
Australia: Canberra	Sep. 1981	Dollar	0.8547	126
Austria: Vienna	Jan. 1982	Shilling	16.4	137
Bahrain: Manama	Nov. 1980	Dinar	0.3774	138
Belgium: Brussels	Apr. 1981	Franc	37.0	126
Brazil: Sao Paulo	Oct. 1980	Cruzeiro	58.3	96
Canada: Ottawa	Nov. 1981	Dollar	1.18	105
China: Beijing	July 1980	Yuan	1.46	96
France: Paris	Mar. 1981	Franc	4.80	153
Germany: Frankfurt	Feb. 1981	Mark	2.00	138
Hong Kong: Hong Kong	Apr. 1981	Dollar	5.40	115
India: New Delhi	Mar. 1981	Rupee	8.25	93
Israel: Tel Aviv	May 1981	Shekel	9.60	125
Italy: Rome	Feb. 1982	Lira	1300	108
Japan: Tokyo	Feb. 1982	Yen	230	142
Korea: Seoul	June 1981	Won	684	125
Mexico: Mexico, D.F.	Jan. 1982	Peso	26.4	110
Netherlands: The Hague	Feb. 1982	Guilder	2.60	125
Nigeria: Lagos	Mar. 1981	Naira	0.5774	169
Philippines: Manila	Dec. 1980	Peso	7.66	104
Saudi Arabia: Al Khobar (Dhahran)	July 1981	Riyal	3.38	142
Singapore: Singapore	July 1981	Dollar	2.16	118
South Africa: Johannesburg	Nov. 1981	Rand	0.9524	103
Spain: Madrid	Feb. 1982	Peseta	99.0	114
Sweden: Stockholm	May 1981	Krona	4.80	148
Switzerland: Geneva	May 1981	Franc	2.01	137
United Arab Emirates: Abu Dhabi	May 1981	Dirham	3.64	133
United Kingdom: London	Apr. 1981	Pound	0.5000	130
U.S.S.R.: Moscow	Dec. 1981	Ruble	0.7000	142
Venezuela: Caracas	Sep. 1981	Bolivar	4.28	142

SOURCE: U.S. Department of State, Allowances Staff.

living is significantly higher than in Washington, D.C. In addition, indexes are computed for American private employees. (The indexes shown in table 1 are those computed for private Americans.) The indexes and post allowances cover most living costs, except housing and education which are covered by separate allowances.

The indexes of living costs abroad and quarters (housing) allowances for selected foreign cities are published quarterly by the Bureau of Labor Statistics. They are now available by subscription, or single copy, from the Superintendent of Documents. The new subscription series include indexes for more than 160 cities, housing allowances for about 75 cities, and hardship differentials for all important hardship posts.

U.S. Department of State Indexes of Living Costs Abroad, Quarters Allowances, and Hardship Differentials can be ordered from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Price for an annual subscription (four quarterly issues) is \$6.50 domestic, \$8.15 foreign; individual copies, \$1.75 domestic, \$2.20 foreign. A description of the statistics and overseas allowances system, *U.S. Department of State Indexes of Living Costs Abroad and Quarters Allowances: A Technical Description* (Report 568), is available from the Bureau of Labor Statistics. □

Special Labor Force Reports—Summaries



Labor force patterns of students, graduates, and dropouts, 1981

ANNE MCDUGALL YOUNG

After having increased for nearly two decades, the labor force participation rate for students age 16 to 24 began to slip in 1978, starting a downward trend that was still evident in the early 1980's. Most of the decline has occurred among teenagers, especially those 16 and 17.

For out-of-school youth 16 to 24, the labor force pattern over the past two decades has mirrored the trend among adults 25 and over. Rates for young men drifted down, while those for young women advanced strongly. (See table 1.)

Detailed information on the work activity of school age youth is obtained from a special survey conducted each October. This report summarizes data that have recently become available from the 1981 survey.¹

School and work

About 46 percent of the students 16 to 24 were in the work force in October 1981, down from nearly 49 percent in 1978. This decline may be related to a number of factors, including the possibility of greater competition with women over 24 for jobs, especially for part-time jobs, and perhaps some discouragement with employment prospects as economic growth has slowed.

Some analysts have suggested that the labor force activity of school age youth has been affected by the increased labor force participation of women.² For example, James Grant and Daniel Hammermesh have concluded that "competition from adult women has very likely had a negative impact on the labor market for youths."³ During the expansionary era of the 1960's and early 1970's, student labor force rates rose along with those for women. However, in the late 1970's and early 1980's, the competition for jobs has intensified, and students were often looking for the same jobs that were also sought by older women.

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The decreases in labor force participation rates of students have not changed the historical pattern by race—the highest rates being for whites, followed by Hispanics, and the lowest for blacks. However, while the participation rate for white students remained relatively unchanged from 1980 to 1981, the rate for black students dropped to the 1975 recession level. The trend for male Hispanic students has been similar to that for blacks, while the rates for Hispanic women have been too volatile to detect a trend.

Labor force participation rates for young women no longer in school have been an exception to the trend among youth, rising by 13 percentage points since 1970. In part, this rise reflects the growing proportion of young women who have completed high school, and the much higher labor force rates of graduates, compared with dropouts. Probably more important was the increase in proportion of out-of-school 16-to-24-year-old women who are not yet married—from a third in 1970 to a half in 1981.⁴ Their labor force rate was 82 percent, compared with 64 percent for their ever-married (that

Table 1. Labor force participation rates for persons 16 to 24 years old, by school enrollment status, sex, and race, selected years, October 1960 to October 1981

School enrollment status and year	Both sexes	Men				Women			
		Total	White	Black	Hispanic	Total	White	Black	Hispanic
Enrolled									
1960	31.8	36.4	35.8	41.9	—	26.0	26.6	21.2	—
1965	35.0	39.8	43.3	33.3	—	28.9	30.0	20.3	—
1970	40.7	42.9	44.5	29.2	—	38.0	40.0	25.3	—
1975	44.0	44.5	47.3	27.2	40.3	43.5	45.9	30.4	32.2
1976	45.3	47.1	49.6	32.9	42.8	43.4	46.9	24.6	33.7
1977	46.8	48.3	51.3	31.1	45.3	45.2	48.8	24.1	35.7
1978	48.7	49.5	52.9	29.3	50.1	47.8	50.7	30.5	42.9
1979	47.7	48.3	51.5	30.5	42.1	47.1	50.5	32.0	32.0
1980	47.4	47.8	50.4	32.0	45.7	47.0	50.6	26.8	37.4
1981	46.2	46.7	50.1	27.5	40.2	45.7	48.7	29.9	35.8
Not enrolled									
1960	68.9	95.0	94.9	95.0	—	50.2	49.4	55.1	—
1965	70.4	94.1	94.1	93.6	—	54.1	53.5	58.3	—
1970	73.1	91.9	93.2	84.9	—	60.0	60.3	57.9	—
1975	77.8	92.1	93.7	83.2	91.3	65.8	67.3	57.5	51.2
1976	79.1	92.1	93.7	81.3	90.1	67.7	69.3	59.0	53.6
1977	80.4	93.2	94.3	86.0	94.1	69.3	72.5	62.8	51.0
1978	81.6	93.1	94.2	85.4	92.9	71.4	72.8	63.3	59.4
1979	81.5	92.5	93.6	85.3	93.1	71.6	73.5	60.5	61.5
1980	81.6	91.8	93.5	82.4	89.6	72.3	74.3	62.6	58.2
1981	81.9	91.7	93.4	82.5	90.3	73.0	74.7	65.3	61.2

NOTE: Rates are labor force as percent of population.

is, married, divorced, separated, or widowed) counterparts. Labor force participation of women no longer in school rose regardless of race or ethnicity.

In general, there has been a relatively steady decline in the labor force participation rates of black male youth no longer in school. Whereas their labor force rate equaled that of their white counterparts in 1960, by 1981 there was a 10-percentage point difference. Research on the declining participation rates has produced contradictory results regarding the influence of the suburbanization of many youth jobs, the significance of the

minimum wage, and the importance of personal characteristics which youth bring to the job.⁵

Some reports have suggested that because of various forms of discouragement—such as high unemployment rates among peers, older friends, and neighbors; the limited range of jobs available; and the perception of lingering discrimination—some youth may have decided that the job search was not worth continuing. Paul Osterman's study of labor force activity among inner-city youth, based on decennial census data, showed that there was "a considerably more powerful discourage-

Table 2. Employment status of persons 16 to 24 years old, by school enrollment status, years of school completed, sex, age, and race, October 1980 and 1981

[Numbers in thousands]

Characteristics	Population		Labor force		Unemployment rate		Characteristics	Population		Labor force		Unemployment rate	
	1980	1981	1980	1981	1980	1981		1980	1981	1980	1981	1980	1981
	Revised		Revised		Revised			Revised		Revised		Revised	
ALL PERSONS							BLACK						
Total	37,103	36,946	24,921	24,583	13.9	14.8	Total	4,892	4,933	2,649	2,671	29.9	33.2
Enrolled, total	15,713	15,909	7,454	7,352	13.7	14.4	Enrolled, total	2,028	2,083	590	587	32.0	35.4
Men	7,997	8,150	3,825	3,803	14.8	14.3	Men	952	1,010	303	268	35.6	26.9
Women	7,716	7,759	3,629	3,549	12.5	14.6	Women	1,076	1,072	287	320	28.2	42.2
16 to 19 years	11,126	11,208	4,836	4,706	16.7	18.1	16 to 19 years	1,566	1,598	371	368	37.2	45.4
20 to 24 years	4,587	4,700	2,618	2,646	8.2	7.8	20 to 24 years	462	485	219	219	23.3	18.7
High school	8,050	8,108	3,461	3,276	19.0	20.0	High school	1,282	1,303	292	280	40.8	49.3
College	7,664	7,800	3,996	4,076	9.1	10.0	College	747	780	298	307	23.5	22.5
Full-time students	6,396	6,503	2,854	2,901	10.5	11.9	Full-time students	641	661	214	222	29.9	28.4
Part-time students	1,268	1,297	1,142	1,175	5.7	5.1	Part-time students	106	119	84	85	7.1	7.1
Not enrolled, total	21,390	21,037	17,467	17,231	14.0	15.0	Not enrolled, total	2,864	2,850	2,059	2,084	29.3	32.7
Men	10,245	10,018	9,405	9,185	14.9	15.2	Men	1,322	1,292	1,089	1,065	28.9	31.2
Women	11,145	11,019	8,062	8,046	12.9	14.7	Women	1,542	1,558	970	1,019	29.8	34.2
School completed:							School completed:						
High school:							High school:						
Less than 4 years	5,230	5,142	3,530	3,501	25.3	26.9	Less than 4 years	955	913	543	552	44.0	48.2
16 to 19 years	2,025	1,921	1,297	1,258	29.1	32.9	16 to 19 years	723	684	441	425	45.7	49.9
20 to 24 years	3,205	3,222	2,233	2,246	23.0	23.6	20 to 24 years	2,141	2,165	1,618	1,660	24.9	28.2
4 years only	11,654	11,451	9,809	9,673	12.5	13.8	4 years only	1,431	1,501	1,106	1,144	26.2	29.5
College:							College:						
1 to 3 years	3,038	2,926	2,716	2,613	8.8	8.6	1 to 3 years	372	348	305	306	22.3	22.5
4 years or more	1,467	1,517	1,408	1,443	5.8	5.3	4 years or more	106	88	103	84	5.8	8.3
WHITE							HISPANIC						
Total	31,345	31,110	21,811	21,474	11.9	12.5	Total	2,624	2,686	1,650	1,654	15.5	15.5
Enrolled, total	13,242	13,312	6,688	6,576	11.9	12.5	Enrolled, total	920	985	377	375	17.8	16.0
Men	6,821	6,853	3,437	3,431	12.9	13.2	Men	455	517	208	208	17.8	17.8
Women	6,421	6,459	3,251	3,145	11.0	11.7	Women	465	467	170	167	17.6	13.8
16 to 19 years	9,270	9,285	4,367	4,242	14.8	15.6	16 to 19 years	705	753	241	227	21.6	19.4
20 to 24 years	3,972	4,027	2,321	2,334	6.5	6.8	20 to 24 years	215	232	137	148	10.2	10.8
High school	6,566	6,572	3,096	2,946	16.7	17.0	High school	579	627	184	180	23.9	20.0
College	6,678	6,740	3,592	3,632	7.9	8.8	College	341	358	193	195	12.4	11.3
Full-time students	5,567	5,613	2,579	2,601	8.9	10.4	Full-time students	255	288	118	127	10.2	11.0
Part-time students	1,109	1,127	1,012	1,031	5.1	4.8	Part-time students	86	69	77	68	14.3	(¹)
Not enrolled, total	18,103	17,798	15,123	14,898	11.9	12.5	Not enrolled, total	1,704	1,701	1,273	1,279	14.8	15.4
Men	8,714	8,562	8,146	7,996	13.1	13.1	Men	840	816	752	737	14.4	15.6
Women	9,389	9,236	6,977	6,902	10.5	11.7	Women	864	885	521	542	15.5	15.1
School completed:							School completed:						
High school:							High school:						
Less than 4 years	4,166	4,107	2,931	2,890	21.6	22.7	Less than 4 years	922	891	628	620	18.9	18.1
16 to 19 years	4,511	4,132	3,628	3,307	16.5	19.0	16 to 19 years	487	486	337	333	20.2	24.6
20 to 24 years	13,592	13,663	11,495	11,587	10.5	10.6	20 to 24 years	1,217	1,215	936	945	12.9	12.3
4 years only	10,025	9,778	8,597	8,417	10.8	11.6	4 years only	589	634	478	501	12.3	15.0
College:							College:						
1 to 3 years	2,588	2,511	2,340	2,253	7.2	6.7	1 to 3 years	155	141	129	123	3.9	8.1
4 years or more	1,324	1,402	1,255	1,338	5.7	5.0	4 years or more	38	36	35	33	(¹)	(¹)

¹ Percent not shown where base is less than 75,000.

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

ment effect" for black youth in 1970 than in 1960 and reasoned that "this doubtlessly explains the adverse participation trends over the decade."⁶ A recent study suggests that some black out-of-school teenagers whose families were on welfare may be inhibited from working because their family allowance would be reduced by the amount of their earnings.⁷

Unemployment rates

Unemployment rates for youth in and out of school have fluctuated considerably since 1970. From 13.2 percent for the enrolled and 10.9 percent for not enrolled youth in 1970, they reached 15.0 and 14.9 percent in 1975, dropped to 12.5 and 10.0 percent in 1978, and climbed back to 14.4 and 15.0 percent in October 1981. These changes reflected not only the recessions in 1975 and 1981, but also continuing problems with finding part-time jobs to fit the schedules of students, and full-time jobs to match the varying skills and educational attainment of out-of-school youth. While it is to be expected that youth unemployment rates would be particularly vulnerable to cyclical changes, the rates for youth have been much higher during the past decade than in the 1960's.

Within the enrolled group, the unemployment rate for male students was relatively unchanged over the year, whereas the rate had increased sharply for women. (See table 2.) Most of the rise occurred among female high school students but teenage women in college were also affected. Only the 20-to-24 age group was untouched by increased joblessness. The unemployment rate for black teenage students rose to 45.4 percent over the year, nearly three times that for whites. Again, most of the increase was among women in high school. Hispanic students' jobless rate remained stable.

Among youth no longer in school, unemployment rates ranged from 5.3 percent for college graduates to 26.9 percent for high school dropouts. As was the case for students, the burden of increased unemployment over the year was limited to women. Their overall unemployment rate rose almost 2 percentage points while the rate for men held steady. Only women who had graduated from college showed no change in their unemployment rate, which continued to be somewhat lower than the rate for male college graduates in the age group. Out-of-school black youth have historically had very high unemployment rates; in October 1981, about a third of those in the labor force were looking for work. The unemployment rate for Hispanic youth (15.4 percent) differed little from that for whites.

Recent graduates and dropouts

A record 1.6 million youth who graduated from high school in 1981 were attending college in October 1981. (See table 3.) Some 54 percent of all recent graduates

were enrolled, compared with 49 percent a year earlier. A similar surge in college enrollment occurred during the 1974-75 recession when many youth chose school as an alternative to unemployment or a less desirable job. The labor force participation rate of new college students was 44 percent, substantially higher than in the early 1970's, reflecting, in part, the increase in work-study programs associated with student aid.⁸

Most recent high school graduates who did not go on to college were in the labor force in October. At 84 percent, their labor force participation rate was also higher than in 1970, mostly because of an increase in the rate for women. The unemployment rate for recent graduates not in college—21.4 percent—was substantially

Table 3. School enrollment and labor force status of 1981 high school graduates and 1980-81 high school dropouts 16 to 24 years old, by sex and race, October 1981

[Numbers in thousands]

Characteristic	Civilian noninstitutional population	Civilian labor force			
		Number	Participation rate	Employed	Unemployed Number Percent
Total, 1981 high school graduates	3,053	1,899	62.2	1,524	375 19.7
Men	1,490	927	62.2	772	155 16.7
Women	1,563	972	62.2	752	220 22.6
White	2,624	1,674	63.8	1,406	268 16.0
Black	358	189	52.8	93	96 50.8
Hispanic	146	77	52.7	61	16 20.8
Enrolled in college	1,646	719	43.7	597	122 17.0
Men	816	341	41.8	300	41 12.0
Women	830	378	45.5	297	81 21.4
Full-time student	1,520	612	40.3	499	113 18.5
Part-time student	126	107	84.9	98	9 8.4
White	1,434	644	44.9	552	92 14.3
Black	154	47	30.5	27	20 (1)
Hispanic	76	27	35.5	25	2 (1)
Not enrolled in college	1,407	1,180	83.9	927	253 21.4
Men	674	586	86.9	472	114 19.5
Women	733	594	81.0	455	139 23.4
Single	616	522	84.7	396	126 24.1
Other marital status	117	72	81.9	59	13 (1)
White	1,190	1,030	86.6	854	176 17.1
Black	204	142	69.6	66	76 53.5
Hispanic	70	50	(1)	36	14 (1)
Total, 1980-81 high school dropouts ²	714	450	63.2	286	164 36.4
Men	366	271	74.0	192	79 29.2
Women	348	179	51.7	94	85 47.5
Single	275	146	53.1	78	68 46.6
Other marital status	73	35	(1)	18	17 (1)
White	532	363	68.2	257	106 29.2
Black	165	77	46.7	22	55 71.4
Hispanics	91	63	69.2	41	22 (1)

¹ Percent not shown where base is less than 75,000.

² Persons who dropped out of school between October 1980 and October 1981. In addition, 78,000 persons 14 and 15 years old dropped out of school.

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

Table 4. Labor force status of college students 16 to 24 years old, by enrollment status and type of college attended, October 1981

(Numbers in thousands)

Selected characteristics	Enrolled		Full-time students			Part-time students		
	Total	Percent	Total	2-year college	4-year college	Total	2-year college	4-year college
POPULATION								
Total	7,799	100.0	83.3	19.3	64.0	16.7	8.8	7.9
White	6,741	100.0	83.2	18.9	64.3	16.8	8.8	8.1
Black	781	100.0	84.6	20.1	64.5	15.4	8.5	6.9
Hispanic	358	100.0	80.0	33.9	46.2	19.9	15.7	4.3
LABOR FORCE								
Total	4,075	100.0	70.9	21.5	49.4	29.1	15.2	13.8
White	3,632	100.0	71.3	21.2	50.1	28.7	14.9	13.8
Black	318	100.0	68.9	21.6	47.3	31.1	14.5	16.6
Hispanic	195	100.0	66.1	32.3	33.9	33.9	25.9	7.9
LABOR FORCE PARTICIPATION RATE¹								
Total	52.3	—	43.8	57.4	39.7	89.4	88.6	90.3
White	53.9	—	45.7	60.1	41.5	90.8	90.6	91.1
Black	40.7	—	31.1	40.9	28.0	77.2	(³)	(³)
Hispanic	54.5	—	44.5	51.3	39.5	(³)	(³)	(³)
UNEMPLOYMENT RATE²								
Total	10.0	—	9.4	11.4	8.5	3.6	4.2	3.0
White	8.8	—	8.4	9.6	7.9	3.7	4.4	2.9
Black	22.0	—	23.1	(³)	16.4	4.5	(³)	(³)
Hispanic	10.3	—	9.6	(³)	(³)	(³)	(³)	(³)

¹ Labor force as percent of population.

² Unemployed as percent of labor force.

³ Percent not shown where base is less than 75,000.

Hispanic youth, some of them relatively new to the United States,⁹ have made extensive use of low cost, 2-year community colleges—almost 50 percent of all Hispanic college students were enrolled in such colleges in 1981, compared with 28 percent of the white, and 29 percent of the black students. More than half of the Hispanic students were working while attending school.

Black students were much less likely than either white or Hispanic students to combine work and college. The lower labor force participation rates of black college students have persisted despite their much lower family income. A third of their families had incomes of less than \$15,000 compared with a tenth of the white families and a fourth of the Hispanic families with students in college in 1981. Whereas many jobs in retail sales, food, and other service industries have moved to suburban malls, the majority of black students live in central cities.¹⁰ Lack of convenient transportation may limit their access to jobs located on the periphery of the city. The substantial number of students attending the many black colleges located in rural areas also face limited employment opportunities. □

FOOTNOTES

¹ This report is based primarily on supplementary questions in the October 1981 Current Population Survey, conducted and tabulated for the Bureau of Labor Statistics by the Bureau of the Census. Most data relate to persons 16 to 24 years of age in the civilian noninstitutional population in the week ending Oct. 17, 1981.

Sampling variability may be relatively large in cases where the numbers are small. Small estimates, or small differences between estimates, should be interpreted with caution. For the most recent report in this series, see Anne McDougall Young, "Labor force activity among students, graduates, and dropouts in 1980," *Monthly Labor Review*, July 1981, pp. 31-33.

² See Howard Hayghe, "Marital and family patterns of workers: an update," *Monthly Labor Review*, May 1982, pp. 53-56.

³ James H. Grant and Daniel S. Hammerness, "Labor Market Competition Among Youths, White Women and Others," *Review of Economics and Statistics*, August 1981.

⁴ Unpublished data, October supplement to the Current Population Survey, Bureau of Labor Statistics.

⁵ For example, see Charles W. Dayton, "The Young Person's Job Search: Insights from a Study," *Journal of Counseling Psychology*, July 1981, pp. 321-333; Minimum Wage Study Commission, *Report of the Minimum Wage Study Commission*, 7 volumes, May-June 1981; James Francis Ragen, Jr., "The Impact of Minimum Wage Legislation on the Youth Labor Market," PhD Thesis, Washington University, December 1975; Arvil V. Adams and Garth L. Mangum, *The Lingering Crisis of Youth Unemployment*, Upjohn Institute for Employment Research, June 1978. See also U.S. General Accounting Office, "Labor Market Problems of Teenagers Result Largely From Doing Poorly in School," *Report to the Honorable Charles Rangel*, U.S. House of Representatives, Mar. 29, 1982.

⁶ Paul Osterman, *Getting Started, The Youth Labor Market*, The MIT Press, 1980, p. 126.

⁷ *Report to the Honorable Charles Rangel*, p. 54.

⁸ National Center for Education Statistics, *The Condition of Education, 1980 Edition*, Table 4.18.

⁹ "Persons of Spanish Origin in the United States: March 1979," *Current Population Reports*, Series P-20, No. 354, p. 17.

¹⁰ Unpublished data from the 1981 Current Population Survey.

higher than a year earlier. It was also higher than the rate for all youth in the age group with 4 years of high school only (13.8 percent).

College students at work

Labor force participation of students is constrained by geography, classroom schedules, and transportation facilities, as well as general conditions in the economy. With opportunities for employment generally limited to the vicinity of the college, the growth of 2-year colleges in metropolitan areas has allowed many persons to further their education while holding down a job. The particular importance of employment for part-time students is shown in table 4. Almost 9 of 10 such students were in the labor force in October 1981.

The close connection between part-time schooling and labor force activity is further illustrated by the low unemployment rates for such students, regardless of race or ethnic origin. The decision to attend college part time, and the means to pay for it, appear to be directly linked to the desire for advancement by youth already employed. The unemployment rates for part-time students were about the same for whites and blacks and were consistently much lower than the rates for full-time students.

Major Agreements Expiring Next Month



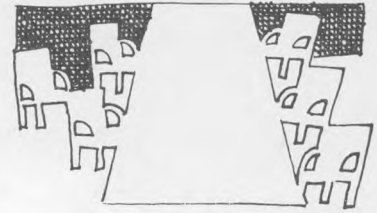
This list of collective bargaining agreements expiring in October is based on contracts on file in the Bureau's Office of Wages and Industrial Relations. The list includes agreements covering 1,000 workers or more.

Employer and location	Industry	Labor organization ¹	Number of workers
American Enka Corp. (Lowland, Tenn.)	Chemicals	United Textile Workers	2,400
Bayly Corp. (Interstate)	Apparel	Clothing and Textile Workers	1,200
Chain and Independent Food Stores (New Mexico) ²	Retail trade	Food and Commercial Workers	2,300
Colonial Stores, Inc., Raleigh Division (North Carolina)	Retail trade	Food and Commercial Workers	1,400
Consolidated Gas Supply Corp. (Interstate)	Utilities	Service Employees	1,750
Cotton Garment and Outerwear Agreement (Philadelphia, Pa.) ²	Apparel	Clothing and Textile Workers	1,550
Dayton Power and Light Co. (Ohio)	Utilities	Utility Workers	2,600
General Motors Corp. (Interstate)	Transportation equipment	Plant Guard Workers (Ind.)	2,550
General Telephone Company of Illinois, Service, Construction and Supply Departments (Illinois)	Communication	Electrical Workers (IBEW)	1,750
GTE Sylvania, Inc. (Seneca Falls, N.Y.)	Electrical products	Steelworkers	1,000
Hesston Corp. (Hesston, Kans.)	Machinery	Hesston Corporation Workers Association	1,450
Hotel Association of Ohio (Ohio)	Hotels	Hotel Employees and Restaurant Employees	1,600
Jewel Companies, Inc., Eisner Food Stores Division (Chicago, Ill.)	Retail trade	Retail Workers	1,400
Mack Trucks, Inc., Master Shop Agreement (Interstate)	Transportation equipment	Auto Workers	6,250
Massey-Ferguson, Inc., Master Agreement (Interstate)	Machinery	Auto Workers	1,500
Pittsburgh Buildings Association (Pennsylvania)	Services	Service Employees	1,200
Retail Butchers Fish and Poultry Agreement (California) ²	Retail trade	Food and Commercial Workers	3,500
Retail Meat Markets and Frozen Food Locker Plants (California) ²	Retail trade	Food and Commercial Workers	1,500
Rubbermaid, Inc. (Wooster, Ohio)	Rubber	Rubber Workers	1,300
Simmons Co. (Interstate)	Furniture	Upholsterers	2,100
TRW, Inc. (Ohio)	Transportation equipment	Aircraft Workers Alliance, Inc. (Ind.)	4,000
Wisconsin Public Service Corp. (Wisconsin)	Utilities	Operating Engineers	1,000

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

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

Developments in Industrial Relations



Job security focus of GE contract

After 2 months of negotiations, the General Electric Co. and 13 unions representing 100,000 workers settled on 3-year contracts that featured improved job security provisions. The breakthrough in the negotiations occurred when the two unions that bargain with GE on a "national" basis—the International Union of Electrical Workers (representing 65,000 workers) and the United Electrical, Radio, and Machine Workers (13,000 workers)—settled. Afterwards, the other member unions of the Coordinated Bargaining Committee settled on the same terms. Six of the unions had initiated the committee in 1965 to strengthen their bargaining position with GE and with Westinghouse Electric Corp. (See "Collective Bargaining in the Electrical Machinery, Equipment, and Supplies Industry," *Current Wage Developments*, March 1982, pp. 42-44.)

One of the job security provisions specifies that workers shifted to lower-rated jobs because of the transfer of work or the introduction of robots or automated manufacturing machines will be guaranteed their former pay rate for 26 weeks. Following are other job-security provisions which are separate from the existing Income Extension Aid Program that applies only to laid-off workers:

- GE agreed to give a 6-month notice of plant closings or transfers of work and a 60-day notice before the use of robots or automated manufacturing machines.
- The lump-sum severance payment for 15-year workers affected by plant closings was increased from 1 week to 2 weeks of pay for each year of service. For other employees with at least 2 years of service, the payment was set at 1.5 weeks of pay for each year, with a minimum of 4 weeks of pay.
- A liberalized table of age and service requirements that made more terminated employees eligible for

monthly income instead of severance pay until they are re-employed or reach optional retirement age. Under the revised table, eligibility ranges from employees age 50 with 25 years of service to those who are age 55 with 10 years of service. The benefit equals 2 percent of monthly pay multiplied by years of service, up to 50 percent of current pay.

- Employees at least 50 years of age with a minimum of 25 years of service who are affected by plant closings will not have their pensions actuarially reduced. Instead, their benefits will be calculated as if they are age 60. They will also receive a supplement of up to \$175 a month until age 62.
- Employees with at least 7 years of service who are affected by plant closings will have a vested pension right.
- Displaced workers will receive job placement assistance and up to \$1,800 for education and retraining.
- Employees who are at least age 50 with at least 25 years of service who are affected by plant closings will continue to be covered by company-financed medical and life insurance until they are 65 or find another job. Dependents also will be eligible for insurance continuation, if they continue to make a contribution toward the premium cost.

The accord called for a June 28, 1982, general pay increase of 7 percent plus a special "decompression" pay adjustment of 2 cents an hour for employees earning \$8.35 to \$8.49 an hour, 4 cents for those earning \$8.50 to \$8.64, 6 cents for those earning \$8.65 to \$8.79, and so forth. The parties indicated that the special pay adjustment for higher skilled workers and the percentage general increase (rather than a flat cents per hour increase of equal cost) were provided to relieve a compression of the pay rate structure.

The workers also will receive 3-percent specified pay increases in June of 1983 and 1984. The provision for automatic semiannual cost-of-living pay adjustments was modified to provide for pay increases of 1 cent an hour for each 0.175-percent rise in the Consumer Price Index for Urban Wage Earners and Clerical Workers, beginning June 27, 1983. The first adjustment during

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

the agreement term (on December 27, 1982) will be calculated at the previous rate of 1 cent for each 0.2-percent movement in the index.

The parties said that specified and cost-of-living pay adjustments will average \$2.10 an hour, or 23.3 percent, over the agreement term, based on an assumed price index rise of 6 percent a year.

There were a number of improvements in the pension plan. Under the formula that applies to most retiring workers, benefit rates were raised to \$12–\$17.50 a month, varying according to pre-retirement average annual earnings, for each year of service, effective July 1, 1982, and to \$14–\$19.50 on January 1, 1984. The previous range was from \$10 to \$15. Comparable changes also were made in the alternate pension formula. Beginning in 1983, the employee contribution toward pensions will be 3 percent of that portion of annual earnings in excess of \$12,000 (formerly \$9,000).

Other improvements included 5 weeks of vacation after 20 years of service, instead of 25 (maximum time off remained at 6 weeks after 30 years); \$500,000 instead of \$350,000 catastrophic medical coverage; \$30,000 instead of \$20,000 minimum life insurance; and starting in 1983, \$225 instead of \$200 maximum sickness and accident benefits for disabilities.

Negotiations were continuing at Westinghouse, where contracts in recent years have usually been patterned after GE agreements. The Westinghouse negotiations involve more than 50,000 workers.

Teamsters, United Parcel Service settle

Nearly 85,000 Teamsters members were covered by an agreement with United Parcel Service (UPS) that did not provide for any specified wage increases over its 37-month term, ending on June 1, 1985. This was similar to the union's settlement with the general trucking industry. (See *Monthly Labor Review*, April 1982, p. 64.)

The UPS settlement followed the trucking agreement in changing from semiannual to annual cost-of-living adjustments calculated at 1 cent an hour for each 0.3-point movement in the Consumer Price Index for Urban Wage Earners and Clerical Workers (1967=100). Both settlements called for diverting part or all of the cost-of-living adjustments to meet the cost of maintaining existing levels of pension and insurance benefits. However, there was no diversion from the 72-cent May 1982 adjustment for UPS workers, in contrast to the general trucking workers, whose April adjustment was reduced by 25 cents an hour.

A paid holiday also was added, bringing the total to 10 to 15 days a year, depending on the region. This was the second agreement negotiated on a national basis; previously, agreements were negotiated on a regional basis.

One major provision in the UPS agreement stipulates that part-time workers hired in the future be paid lower rates—\$8 an hour for unskilled workers who load and unload trucks, and \$9 for skilled workers who sort parcels. All of the company's drivers are full time.

These reduced rates, and the lack of specified wage increases, drew strong criticism from Teamsters for Democratic Union, a dissident group that has been contesting the union's leadership in recent years. The organization claimed that the pay freeze was not warranted because UPS was operating at a profit, unlike many freight companies, and that the special pay rates would induce UPS to increase its percentage of part-time workers. Despite this criticism, the vote tally was 33,072 to 29,788 in favor of the contract, not close to the two-thirds negative vote needed for rejection.

Ship officers and engineers give back pay increase

More than 7,000 licensed marine ship's officers agreed to roll back a June pay increase of 7.5 percent in response to a request from the Reagan Administration. Jesse Calhoun, president of the Marine Engineers Beneficial Association, said members of his union accepted the cut to aid the Administration's effort "to develop an affirmative and much needed maritime program." Two unions of unlicensed seamen, the Seafarers' International Union and the National Maritime Union, rejected the request, saying that their labor contracts "are by no means out of line with the economic realities of the maritime industry, or the Nation as a whole."

Utility contract features lifetime job security

More than 3,500 employees of the Potomac Electric Power Co. in Maryland, Virginia, West Virginia, and the District of Columbia were covered by a settlement negotiated by the International Brotherhood of Electrical Workers that called for pay increases of 9, 8, and 8 percent in June of 1982, 1983, and 1984. The 3-year accord also provides "lifetime job and pay security" to employees with 12½ years of seniority. According to the union, eligible employees "cannot be furloughed or reduced in pay due to lack of work, plant closings, reorganizations, automation, etc." In return, the workers agreed to changes in "duties and responsibilities" provisions to improve operating efficiency.

A company source said the changes in duties and responsibilities provisions permit PEPCO to adapt to changing conditions and operations by making changes in job content without union approval. This provision is subject to review after a 2-year trial period.

Other contract terms included—

- A 3.3-percent special pay increase to 1,500 workers whose job content had been increased in the past

without a commensurate pay increase. This special adjustment was in exchange for ending all of the grievances employees had filed because of the job content changes.

- A new absence and sick leave program designed to reward workers with good attendance and penalize those with poor records.
- Establishment of a company-financed dental care plan.
- Elimination of the provision for an automatic cost-of-living pay adjustment. (The adjustment under the prior contract was 20 cents, effective March 1, 1982.)

Six-month raises for supermarket workers

In the New York City area, 13,000 workers were covered by a settlement between United Food and Commercial Workers Local 1500 and 10 supermarket chains. The 3-year contract provided for full-time employees to receive a wage increase of \$90 a week, consisting of a \$30 immediate increase, followed by \$20, \$10, \$20, and \$10 increases at 6-month intervals, beginning in June 1983. Increases for part-time workers were 50, 30, 15, 30, and 15 cents an hour on the corresponding dates.

The pension rate for full-time workers was increased to \$17 a month for each year of credited service (from \$11) effective September 1, 1982, and to \$20 in September 1984. It will be financed by a two-step increase in the employer's funding obligation to \$71.55 a month, from \$45. Employer funding of pensions for part-time workers also was raised and they will continue receiving benefits at half the rate that applies to full-time workers.

The employers' financing of welfare benefits for full-time employees was increased by \$20 a month (to \$108) over the term to permit a number of improvements, including \$250,000 major medical coverage (formerly \$100,000); \$20,000 (instead of \$10,000) life and accidental death and dismemberment insurance; a prescription drug coverage plan; and increasing dental and vision care coverage. There also were improvements in welfare benefits for part-time workers.

Other provisions included a fifth week of vacation for full-time employees with 25 years of service and a prohibition of mandatory lie detector testing.

Warehouse workers get new contract

In Northern California, the Teamsters and International Longshoremen's and Warehousemen's unions settled jointly with two warehouse associations on 3-year contracts for 5,000 workers. The settlement with the Industrial Employers and Distributors Association and the San Francisco Employers Council also had a wider impact, as the two unions then won similar terms for 15,000 other warehouse workers.

Wages will increase by 32 cents an hour in December 1982 and 24 cents in June of 1983 and 1984, bringing the contract minimum wage rate to \$11.59 an hour. The cost-of-living clause, which was not changed, provides for pay adjustments in June of 1983 and 1984 each equal to 1 cent an hour for each 0.3-point rise in the Consumer Price Index for All Urban Consumers (1967=100) in excess of 7.2 index points during the preceding 12 months, with no credit toward the adjustments for any rise in excess of 11 percent. The parties estimated that the resulting adjustments will total 89 cents, assuming rise of 7 percent a year.

Both contracts provided for a 37-cent-an-hour increase in employer financing of benefit improvements, which were not identical for both unions.

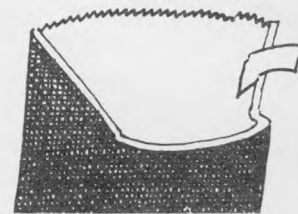
Employer need not remain neutral, NLRB rules

The National Labor Relations Board reversed a policy initiated in 1945 by holding that employers do not have to stay strictly neutral when unions compete for the right to represent their employees. The new policy was manifested in rulings involving a subsidiary of RCA Corp. located in Puerto Rico and the Bruckner Nursing Home, located in New York.

In the RCA case, the board held that the employer must continue to recognize and negotiate with an incumbent union when another union asks the board to conduct a representation election. The board said this approach should further "stability in industrial relations" while ensuring "employee free choice."

In the nursing home case, the board held that a non-union employer need not remain neutral until an election petition is filed by one of the competing unions. Instead, the employer voluntarily may recognize the union that signs up an "uncoerced, unassisted" majority of workers in a bargaining unit. □

Book Reviews



The long struggle of working women

Out to Work: A History of Wage-Earning Women in the United States. By Alice Kessler-Harris. New York, Oxford University Press, 1982. 400 pp. \$19.95.

The idea of writing a history of wage-earning women in the United States was an excellent one and Alice Kessler-Harris provides much information, particularly about the period before the Second World War. It is also refreshing to read a work on the role of women in the economy written from the perspective of a historian rather than a sociologist or economist. The book is clearly well researched and brings many unfamiliar sources to print.

In some sense, however, it is these strengths of the book that are also its weaknesses. The historian's approach, focusing on letters and other primary sources, seems to one accustomed to social science research to be generalizing from anecdotes rather than from data. Moreover, misunderstandings of the nature of change often occur from the use of anecdotal evidence. For example, today we are familiar with articles that include interviews with female plumbers, auto mechanics, and truckdrivers. While it is true that some women have moved into traditionally male occupations, it would be wrong to conclude that such occupational changes have become commonplace. Thus, it is natural to wonder whether the letters of Ann Appleton to her sister Sarah in 1847, or those of Lucy Davis, or Melinda Edwards or the others, are truly representative. The relevance of the historical approach could have been supported by a greater use of the available statistics to set the stage.

The work could also have benefited from better integration with developments in American economic history. The role of all workers, and especially women, has been influenced by changes in the industrial structure of the Nation, the types of goods and services that were demanded, and the organizational structure that was established to supply the demand.

The book is at its best covering the world of work among women with little education. Manual workers, those in sales and clerical jobs, and domestic workers

all play a major role in the book, but professional women are barely mentioned, although women have been working in nursing, teaching, and other "helping professions" for many years.

The coverage of the period since the Second World War is very sparse; actually, it might have been better for it to have been omitted altogether. So much has been written about this period in other books and journals that the coverage in *Out To Work* seems superficial.

No book can be expected to provide complete coverage, however; and despite its limitations the work fills a serious gap in our knowledge about working women in the 18th and 19th centuries. It reminds us most dramatically that the road to the present was not a straight or level one and that working women in the past suffered problems that are hard to even imagine today.

A few statistics can help put the transformation in perspective. Prior to 1900, less than one-sixth of all working women were married; today more than half are. In 1900, more than half of women who worked held blue-collar or private household jobs; today, only one-sixth are engaged in those types of employment. The proportion of all women in the paid work force went from one-fifth in 1900, to one-fourth in 1940, to one-third in 1960 and one-half in 1980. At the same time, the typical job held by a woman was transformed from one requiring long hours of physically tiring work to one that was likely to be sedentary, in clean and safe surroundings, and otherwise more desirable.

—DEBORAH PISETZNER KLEIN

Division of Employment and Unemployment Analysis
Bureau of Labor Statistics

Race, class, and income inequality

Racial Inequality. By Michael Reich. Princeton, N.J., Princeton University Press, 1981. 345 pp. \$22.50.

This book may prove tough going for readers who do not share the author's political perspective, class conflict. Michael Reich believes that racial discrimination

against blacks affects white workers as well and proposes "a broad interracial [working] class alliance" to redistribute economic and political power.

Others may view the combination of a Marxian-tinted framework and rigorous econometric analysis as novel. But it is quite possible to both find Professor Reich's review of persistent income inequality by race well developed, while rejecting his singular interpretation and solutions.

Reich's analysis examines the embedded effects of a socioeconomic class structure rather than standard discrimination theory to explain income differences by race. Because neoclassical theory does not envision persisting differences, especially in the long run, the book makes a valuable contribution in its clear exposition of those discrepancies.

In his focus on economic inequality rather than employment discrimination, the author provides an explanatory framework for how such differences can persist. This focus almost ignores gains by individuals, especially by race, however, leaving Reich with results not necessarily related to his interpretation.

Employment gains by blacks over the past decade attributable to voluntary or judicially directed compliance with the Civil Rights Act, or to enhanced access to job-qualifying education and training, play no role in Reich's schema, for example. A wage-subsidization-by-race effect of the magnitude required to demonstrate such a phenomenon is not possible where industrial wages are set by job level and seniority, not worker characteristics.

To the extent that preferable job assignments, carrying higher wage levels, are improperly distributed by race in a few instances, legal remedies exist for redress. Reich's results, drawn from 1960 and 1970 census data, unfortunately fail to reflect changes over the past decade affecting the conclusions that may be drawn from them.

The underlying hypothesis rests on several findings. In particular, Reich found that owners of capital, and whites in the upper decile, are concentrated in those areas where racial income inequality is most extreme and the presence of a redistributive effect of this inequality away from white as well as black workers.

But because the geographic redistribution of American wealth into energy-related capital strongly overlaps those regions where income is less evenly distributed to begin with, a nexus tying race and class to earnings ultimately fails to illuminate the question. If the author wants to assert that discrimination against blacks harms all but wealthy whites (what about wealthy blacks?), more clearly developed proof is required. It is not provided.

Reich's critique of the major neoclassical models, and why they lack explanatory value as to racial discrimination is crisply written, building on his previous work. The author's own theory would have to show more per-

suasively how the owners of capital consciously scheme to deprive wage earners of anything on the basis of race beyond the compensation package, particularly as to terms and conditions of employment.

As Reich said of Gary Becker's pioneering study on the economics of discrimination, "it deserves much credit for bringing the subject into the mainstream of economic analysis." Similarly, this study deserves credit for its effective summary and review of the extant literature, and the tenuous relevance of much of accepted theory to a persisting long-term problem.

But a cogent critique of earlier theory does not imbue the author's own work with validity. Reich pinpoints the difference wherein neoclassical theory treats labor strictly as a commodity rather than a combined commodity and dynamic noncommodity, capable of interacting with the other factors of production. This does not explain how the combination of market processes and capitalist-worker conflict will result in a lessening of inequality, however.

Furthermore, Reich identifies managers and professionals as an intermediate group "between" workers and capitalists. Yet the presence of this stratum suggests that the working class solidarity required for any major shift in economic power is completely absent.

The dichotomy between the author's analysis and conclusion is further illustrated by his statement: "The class conflict theory accords with econometric evidence indicating that most white workers are hurt by racism. These results strengthen the advantages of the class conflict theory over the neoclassical theory." While that view is open to debate, it is nonetheless a *non sequitur* to the material that precedes it pertaining to the distinction among and between the factors of production.

The lack of movement toward Reich's solution, an interracial working class coalition, is clear to all, including the author. This is explained in part by antiblack attitudes within organized labor that have resulted in the continued disadvantage of white workers, in Reich's view.

An equally plausible perspective may be mentioned. That is, the lack of union power across much of the Nation, especially in the Southern half, combined with the diminished lack of economic vitality and reduced labor demand of recent years, has affected the income of workers far more than the factors cited by Reich.

Because most capitalists and skilled workers are white, the effects of a somewhat noncompetitive market structure tend to skew the Nation's income distribution on several dimensions including race. But many, if not most, white workers (along with most black workers) fail to enjoy the incomes they might obtain under a more balanced economic structure.

The book has its strong points, especially chapter 4. It should most certainly be welcomed by readers seek-

ing broader exposure to non-mainstream economic thought.

But American workers have not transformed trade unionism into a radical political institution or a European-type structure. Nor is a multiracial coalition likely to emerge to redistribute earned income by race and class simultaneously.

This leaves Reich committed, *a priori*, to a conclusion at odds with how workers of both races behave, and the distribution of their incomes as a result. The dynamic durability of industrial and social institutions, particularly those outside the workplace that affect occupational qualifications and choice patterns, must be more thoroughly investigated with 1980 census data before a clearer and more realistic explanation can emerge.

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A new role for corporations

Corporate Control, Corporate Power. By Edward S. Herman. New York, The Twentieth Century Fund, Inc., 1981. 432 pp. \$18.95, Cambridge University Press, New York.

Fifty years have passed since the shift of control from owners to managers in the increasingly dominant major corporations was analyzed in the classic work, *The Modern Corporation and Private Property*, by A. A. Berle, Jr. and Gardner Means. With support from the Twentieth Century Fund, Edward S. Herman, Professor of Finance at the University of Pennsylvania's Wharton School, has reexamined the earlier findings based on contemporary corporate developments.

Managerial control of the corporation is Herman's starting point. For this, he has painstakingly combined thorough examination of the accumulated voluminous literature and analytical studies of corporations in recent years with his own carefully developed conceptual and statistical analysis. The initiating purpose of the study is achieved through the treatment of the operational elements for internal corporate control; the changing role of ownership among individuals, families, and financial institutions; and external influences on corporate control. As executed, the study is equally a treatment of the role of the corporation in today's American society. The context of the study derives from Herman's long interest in the centralizing role of the corporations, and in the possibilities and limits of corporate interaction with reform and social change. The breadth of his treatment is expressed in his perception which "stresses the continued primacy of corporate initiatives in economic change, the great powers of corpo-

rate resistance to profitable growth and the resultant strong tendencies toward political immobility."

Regarding the managerial locus of corporate control reported by Berle and Means, Herman demonstrates the accentuation of that corporate characteristic. While reformulating some of the Berle and Means classifications, Herman finds that the substantial decline in ownership control of corporations had already occurred by 1900, with the level changing little by 1929. There was, however, a contrasting sharp drop between 1929 and 1975. In 1929, owner-controlled companies accounted for 42 percent of the number and 28 percent of the assets of the 200 largest companies; in 1975, owner-controlled companies numbered 16 percent, with 13 percent of the assets of the 200 largest. There has also been a decline in controls exercised by banking and speculative interests.

This reinforcement and intensification of control by managers with relatively little stock ownership in their companies has not meant that these are neutral technocrats, as Berle and Means postulated, who are less concerned with profits than in owner or entrepreneurial-run companies. Herman finds that the evidence demonstrates that such managerial-controlled companies do not significantly differ in objectives from owner-controlled companies. Management confronted with the constraints induced by the concerns of owners and creditors and the workings of internal group decision-making is just as concerned with achieving profitable growth as are the owners. Management is in a strategic position to function with a substantial degree of autonomy, although internal and external constraints affect its extent. These constraints include the relative position of unions in bargaining, governmental tax and regulatory requirements, community pressures, relations with other firms, and other corporate interests by the board of directors.

Viewing the role of corporations in the American economy, Herman points to their increasingly dominant role, already apparent in 1900. These major firms are interconnected through a loose network of joint ventures, interlocking directorates, government advisory bodies, and a variety of social, political, and trade groups. At the same time, there are new dissociative factors, with price competition replaced by product competition resulting from the high rate of technological change. Furthermore, the internationalization of business since 1945, while making markets more open and global, has enhanced the power of the multinational corporation in individual countries and increased its autonomy. Flexibility of movement increases the corporation's bargaining position with unions. The effect on government is dualistic and paradoxical—at one and the same time, the role of government is enhanced, with appeals for assistance from both expanding multinationals and threatened domestic interests; yet the govern-

ment role is weakened by the conflicts between domestic interests and international pressures as well as by events determined by private initiatives.

Such transcendent influences have engendered concerns with corporate reforms which include assertions of the need for corporate perspectives to include wider social responsibilities. Herman points to the long and widely held corporate leadership views that social responsibility was met by serving the community through the corporation's regular productive activities, and not through charitable activities. Herman suggests the need for broader societal approaches, than those usually suggested, to raise corporate perspectives beyond short-term concerns with profitable growth, and long-term concerns with such limited matters as sources of raw materials and market positioning. Broadening representation on corporate boards of directors, either through outside directors or worker participation, is not viewed as assuring significant changes in the horizons of corporate objectives.

Rather, Herman appeals for awareness of the urgency for meeting the broad evolving needs of domestic and international society in which corporations play a major role. He calls attention to alternative possibilities, leaning towards what he refers to as the French, Japanese, and Swedish "Models of Guided Capitalism." Adaptation of elements of these economies in the American ambience would only involve modest external shocks for the present order, while permitting "greater and more explicit partnership arrangements between government and big business to deal with both internal and external needs." He stresses that these models function within a democratic framework, rather than the authoritarian approaches taken in some third world countries. The warning is set forth that "in a revised 'stages of growth' model, instead of third world political economies becoming like us, under conditions of slower growth, severe factionalism, and major systemic shock, we may become more like them." Herman has contributed importantly to the literature of political economy by relating his technical findings to the broader fluctuating social, economic, and political climate currently buffeting governments, corporations, unions, and the public at large.

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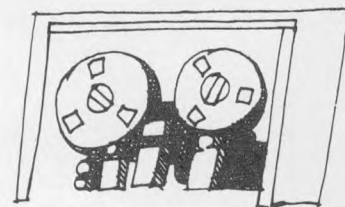
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NOTE

Tables 10 and 13 have been deleted, and the succeeding tables renumbered.

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 March 1982 issue of the *Review* to reflect experience through 1981. The original estimates also were revised to 1970 to reflect 1980 census population controls.

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

Annual revision of the seasonally adjusted payroll data shown in tables 10, 12, and 14 were made in August 1981 using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in tables 28 and 29 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month to month and from quarter to quarter are

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

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

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

Symbols

p = preliminary. To improve the timeliness of some series, preliminary figures are issued based on representative but incomplete returns.

r = revised. Generally, this revision reflects the availability of later data but may also reflect other adjustments.

n.e.c. = not elsewhere classified.

Schedule of release dates for major BLS statistical series

Series	Release date	Period covered	Release date	Period covered	MLR table number
Employment situation	September 3	August	October 8	September	1-10
Producer Price Index	September 10	August	October 15	September	21-25
Consumer Price Index	September 23	August	October 26	September	17-20
Real Earnings	September 23	August	October 26	September	11-15
Major collective bargaining settlements	.....	.....	October 27	1st 9 months	33-34
Productivity and costs:					
Nonfarm business and manufacturing	.....	.....	October 28	3rd quarter	26-29

EMPLOYMENT DATA FROM THE HOUSEHOLD SURVEY

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

Definitions

Employed persons 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 1981.

1. Employment status of the noninstitutional population, 16 years and over, selected years, 1950-81

[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	Percent of population	Agriculture	Nonagricultural industries	Number		Percent of labor force
1950	106,645	63,858	59.9	62,208	58,918	55.2	7,160	51,758	3,288	5.3	42,787
1955	112,732	68,072	60.4	65,023	62,170	55.1	6,450	55,722	2,852	4.4	44,660
1960	119,759	72,142	60.2	69,628	65,778	54.9	5,458	60,318	3,852	5.5	47,617
1965	129,236	77,178	59.7	74,455	71,088	55.0	4,361	66,726	3,366	4.5	52,058
1966	131,180	78,893	60.1	75,770	72,895	55.6	3,979	68,915	2,875	3.8	52,288
1967	133,319	80,793	60.6	77,347	74,372	55.8	3,844	70,527	2,975	3.8	52,527
1968	135,562	82,272	60.7	78,737	75,920	56.0	3,817	72,103	2,817	3.6	53,291
1969	137,841	84,240	61.1	80,734	77,902	56.5	3,606	74,296	2,832	3.5	53,602
1970	140,272	85,959	61.3	82,771	78,678	56.1	3,463	75,215	4,093	4.9	54,315
1971	143,033	87,198	61.0	84,382	79,367	55.5	3,394	75,972	5,016	5.9	55,834
1972	146,574	89,484	61.1	87,034	82,153	56.0	3,484	78,669	4,882	5.6	57,091
1973	149,423	91,756	61.4	89,429	85,064	56.9	3,470	81,594	4,365	4.9	57,667
1974	152,349	94,179	61.8	91,949	86,794	57.0	3,515	83,279	5,156	5.6	58,171
1975	155,333	95,955	61.8	93,775	85,846	55.3	3,408	82,438	7,929	8.5	59,377
1976	158,294	98,302	62.1	96,158	88,752	56.1	3,331	85,421	7,406	7.7	59,991
1977	161,166	101,142	62.8	99,009	92,017	57.1	3,283	88,734	6,991	7.1	60,025
1978	164,027	104,368	63.6	102,251	96,048	58.6	3,387	92,661	6,202	6.1	59,659
1979	166,951	107,050	64.1	104,962	98,824	59.2	3,347	95,477	6,137	5.8	59,900
1980	169,848	109,042	64.2	106,940	99,303	58.5	3,364	95,938	7,637	7.1	60,806
1981	172,272	110,812	64.3	108,670	100,397	58.3	3,368	97,030	8,273	7.6	61,460

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

[Numbers in thousands]

Employment status	Annual average		1981						1982						
	1980	1981	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
TOTAL															
Total noninstitutional population ¹	169,848	172,272	172,385	172,559	172,758	172,966	173,155	173,330	173,495	173,657	173,843	174,020	174,201	174,364	174,544
Armed Forces ¹	2,102	2,142	2,139	2,160	2,165	2,158	2,158	2,164	2,159	2,168	2,175	2,176	2,175	2,173	2,180
Civilian noninstitutional population ¹	167,745	170,130	170,246	170,399	170,593	170,809	170,996	171,166	171,335	171,489	171,667	171,844	172,026	172,190	172,364
Civilian labor force	106,940	108,670	108,688	108,818	108,494	109,012	109,272	109,184	108,879	109,165	109,346	109,648	110,666	110,191	110,522
Participation rate	63.8	63.9	63.8	63.9	63.6	63.8	63.9	63.8	63.5	63.7	63.7	63.8	64.3	64.0	64.1
Employed	99,303	100,397	100,864	100,840	100,258	100,343	100,172	99,613	99,581	99,590	99,492	99,340	100,117	99,764	99,732
Employment-population ratio ²	58.5	58.3	58.5	58.4	58.0	58.0	57.9	57.5	57.4	57.3	57.2	57.1	57.5	57.2	57.1
Agriculture	3,364	3,368	3,342	3,404	3,358	3,378	3,372	3,209	3,411	3,373	3,349	3,309	3,488	3,357	3,460
Nonagricultural industries	95,938	97,030	97,522	97,346	96,900	96,965	96,800	96,404	96,170	96,217	96,144	96,032	96,629	96,406	96,272
Unemployed	7,637	8,273	7,824	7,978	8,236	8,669	9,100	9,571	9,298	9,575	9,854	10,307	10,549	10,427	10,790
Unemployment rate	7.1	7.6	7.2	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5	9.8
Not in labor force	60,806	61,460	61,558	61,581	62,099	61,797	61,724	61,982	62,456	63,324	63,321	62,197	61,360	61,999	61,842
Men, 20 years and over															
Civilian noninstitutional population ¹	71,138	72,419	72,472	72,559	72,670	72,795	72,921	73,020	73,120	73,209	73,287	73,392	73,499	73,585	73,685
Civilian labor force	56,455	57,197	57,172	57,250	57,262	57,355	57,459	57,665	57,368	57,448	57,554	57,730	58,164	58,016	58,094
Participation rate	79.4	79.0	78.9	78.9	78.8	78.8	78.8	79.0	78.5	78.5	78.5	78.7	79.1	78.8	78.8
Employed	53,101	53,582	53,874	53,791	53,693	53,504	53,354	53,122	53,047	53,097	53,006	52,988	53,260	52,985	52,996
Agriculture	2,396	2,384	2,383	2,422	2,383	2,413	2,382	2,311	2,390	2,386	2,377	2,382	2,464	2,424	2,474
Nonagricultural industries	50,706	51,199	51,491	51,369	51,310	51,091	50,972	50,811	50,657	50,711	50,629	50,606	50,796	50,561	50,522
Unemployed	3,353	3,615	3,298	3,459	3,569	3,851	4,105	4,543	4,322	4,351	4,548	4,742	4,904	5,031	5,088
Unemployment rate	5.9	6.3	5.8	6.0	6.2	6.7	7.1	7.9	7.5	7.6	7.9	8.2	8.4	8.7	8.8
Women, 20 years and over															
Civilian noninstitutional population ¹	80,065	81,497	81,561	81,671	81,792	81,920	82,038	82,151	82,260	82,367	82,478	82,591	82,707	82,811	82,926
Civilian labor force	41,106	42,485	42,682	42,666	42,344	42,831	42,987	42,888	42,868	43,031	43,243	43,301	43,683	43,904	44,076
Participation rate	51.3	52.1	52.3	52.2	51.8	52.3	52.4	52.2	52.1	52.2	52.4	52.4	52.8	53.0	53.2
Employed	38,492	39,590	39,810	39,841	39,426	39,814	39,878	39,713	39,764	39,744	39,807	39,715	40,075	40,350	40,392
Agriculture	584	604	590	609	608	596	635	572	649	628	636	601	634	581	600
Nonagricultural industries	37,907	38,986	39,220	39,232	39,818	39,218	39,243	39,141	39,115	39,116	39,172	39,114	39,441	39,769	39,791
Unemployed	2,615	2,895	2,872	2,825	2,918	3,017	3,109	3,175	3,104	3,286	3,435	3,586	3,608	3,554	3,684
Unemployment rate	6.4	6.8	6.7	6.6	6.9	7.0	7.2	7.4	7.2	7.6	7.9	8.3	8.3	8.1	8.4
Both sexes, 16 to 19 years															
Civilian noninstitutional population ¹	16,543	16,214	16,213	16,169	16,131	16,093	16,037	15,995	15,955	15,913	15,902	15,861	15,820	15,794	15,753
Civilian labor force	9,378	9,888	9,834	9,902	9,888	9,826	9,826	9,831	9,843	9,886	9,849	9,816	9,819	9,821	9,832
Participation rate	56.7	55.4	54.5	55.1	55.1	54.8	55.0	54.0	54.2	54.6	53.8	54.3	55.7	52.4	53.1
Employed	7,710	7,225	7,180	7,208	7,139	7,025	6,940	6,778	6,771	6,748	6,679	6,637	6,782	6,429	6,344
Agriculture	385	380	369	373	367	369	355	326	373	359	336	326	390	353	386
Nonagricultural industries	7,325	6,845	6,811	6,835	6,772	6,656	6,585	6,452	6,398	6,389	6,343	6,311	6,392	6,076	5,958
Unemployed	1,669	1,763	1,654	1,694	1,749	1,801	1,886	1,853	1,872	1,938	1,870	1,979	2,037	1,842	2,018
Unemployment rate	17.8	19.6	18.7	19.0	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3	24.1
White															
Civilian noninstitutional population ¹	146,122	147,908	147,976	148,144	148,370	148,562	148,631	148,755	148,842	148,855	149,132	149,249	149,250	149,429	149,569
Civilian labor force	93,600	95,052	95,126	95,163	94,884	95,365	95,535	95,329	95,120	95,333	95,508	96,015	96,641	96,223	96,493
Participation rate	64.1	64.3	64.3	64.2	64.0	64.2	64.3	64.1	63.9	64.0	64.0	64.3	64.8	64.4	64.5
Employed	87,715	88,709	89,170	89,221	88,628	88,734	88,498	88,010	87,955	87,990	87,956	87,988	88,450	88,173	88,137
Unemployed	5,884	6,343	5,956	5,942	6,256	6,631	7,037	7,319	7,165	7,344	7,552	8,026	8,191	8,050	8,356
Unemployment rate	6.3	6.7	6.3	6.2	6.6	7.0	7.4	7.7	7.5	7.7	7.9	8.4	8.5	8.4	8.7
Black															
Civilian noninstitutional population ¹	17,824	18,219	18,239	18,266	18,297	18,333	18,362	18,392	18,423	18,450	18,480	18,511	18,542	18,570	18,600
Civilian labor force	10,865	11,086	10,971	11,069	11,134	11,188	11,207	11,226	11,188	11,205	11,217	11,170	11,335	11,253	11,322
Participation rate	61.0	60.8	60.2	60.6	60.9	61.0	61.0	61.0	60.7	60.7	60.3	61.1	61.1	60.6	60.9
Employed	9,313	9,355	9,388	9,267	9,319	9,313	9,321	9,279	9,314	9,265	9,197	9,111	9,216	9,174	9,223
Unemployed	1,553	1,731	1,633	1,802	1,815	1,875	1,886	1,947	1,874	1,939	2,020	2,058	2,120	2,079	2,098
Unemployment rate	14.3	15.6	14.9	16.3	16.3	16.8	16.8	17.3	16.8	17.3	18.0	18.4	18.7	18.5	18.5
HISPANIC ORIGIN															
Civilian noninstitutional population ¹	8,901	9,310	9,282	9,400	9,466	9,559	9,556	9,519	9,400	9,341	9,297	9,235	9,297	9,428	9,521
Civilian labor force	5,700	5,972	5,905	5,924	5,964	6,074	6,151	6,095	6,054	6,065	6,024	5,933	6,001	5,931	5,966
Participation rate	64.0	64.1	63.6	63.0	63.0	63.5	64.4	64.0	64.4	64.9	64.8	64.2	64.5	62.9	62.7
Employed	5,126	5,348	5,314	5,340	5,393	5,422	5,446	5,426	5,330	5,298	5,260	5,191	5,166	5,131	5,135
Unemployed	575	624	591	584	571	652	705	669	724	767	764	743	834	800	832
Unemployment rate	10.1	10.4	10.0	9.9	9.6	10.7	11.5	11.0	12.0	12.6	12.7	12.5	13.9	13.5	13.9

¹ The population and Armed Forces figures are not seasonally adjusted.

² Civilian employment as a percent of the total noninstitutional population (including Armed Forces).

Note: Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races" group are not presented and Hispanics are included in both the white and black population groups.

3. Selected employment indicators, seasonally adjusted

[Numbers in thousands]

Selected categories	Annual average		1981						1982						
	1980	1981	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
CHARACTERISTIC															
Total employed, 16 years and over	99,303	100,397	100,864	100,840	100,258	100,343	100,172	99,613	99,581	99,590	99,492	99,340	100,117	99,764	99,732
Men	57,186	57,397	57,640	57,551	57,471	57,266	57,051	56,725	56,629	56,658	56,472	56,401	56,820	56,223	56,192
Women	42,117	43,000	43,224	43,289	42,787	43,077	43,121	42,888	42,952	42,932	43,020	42,940	43,297	43,541	43,540
Married men, spouse present	39,004	38,882	38,961	38,961	38,855	38,746	38,553	38,342	38,234	38,255	38,181	38,142	38,312	38,354	38,213
Married women, spouse present	23,532	23,915	24,159	24,043	23,626	23,874	23,820	23,691	23,744	23,727	23,900	23,831	24,213	24,401	24,223
Women who maintain families	4,780	4,998	4,969	4,988	5,015	5,045	5,049	5,064	5,107	5,158	5,095	5,095	4,986	5,112	5,247
OCCUPATION															
White-collar workers	51,882	52,949	52,907	53,141	52,908	53,199	53,086	53,084	52,836	52,841	52,763	53,177	53,705	53,586	53,685
Professional and technical	15,968	16,420	16,364	16,621	16,598	16,681	16,657	16,774	16,803	16,612	16,659	16,844	16,818	17,053	17,292
Managers and administrators, except farm	11,138	11,540	11,578	11,460	11,533	11,616	11,461	11,424	11,091	11,253	11,311	11,501	11,541	11,504	11,355
Salesworkers	6,303	6,425	6,373	6,490	6,441	6,400	6,418	6,450	6,520	6,544	6,637	6,603	6,587	6,547	6,567
Clerical workers	18,473	18,564	18,592	18,570	18,336	18,502	18,550	18,436	18,423	18,432	18,155	18,229	18,759	18,482	18,471
Blue-collar workers	31,452	31,261	31,580	31,611	31,266	30,953	30,683	30,344	30,203	30,309	30,416	29,924	29,926	29,716	29,609
Craft and kindred workers	12,787	12,662	12,787	12,724	12,514	12,446	12,411	12,446	12,370	12,454	12,511	12,492	12,316	12,207	12,229
Operatives, except transport	10,565	10,540	10,719	10,658	10,524	10,410	10,220	10,169	9,966	9,955	9,860	9,688	9,585	9,655	9,453
Transport equipment operatives	3,531	3,476	3,526	3,530	3,506	3,580	3,438	3,368	3,415	3,503	3,397	3,400	3,419	3,414	3,439
Nonfarm laborers	4,567	4,583	4,548	4,699	4,722	4,517	4,614	4,361	4,451	4,397	4,648	4,343	4,607	4,441	4,488
Service workers	13,228	13,438	13,526	13,282	13,391	13,525	13,670	13,639	13,709	13,612	13,526	13,555	13,738	13,791	13,634
Farmworkers	2,741	2,749	2,727	2,753	2,743	2,770	2,802	2,660	2,817	2,787	2,710	2,623	2,731	2,660	2,750
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture:															
Wage and salary workers	1,425	1,464	1,495	1,501	1,461	1,502	1,436	1,352	1,377	1,426	1,416	1,423	1,541	1,431	1,530
Self-employed workers	1,642	1,638	1,593	1,638	1,643	1,631	1,641	1,602	1,674	1,596	1,644	1,664	1,698	1,676	1,674
Unpaid family workers	297	266	244	256	256	261	321	228	380	359	277	270	236	251	250
Nonagricultural industries:															
Wage and salary workers	88,525	89,543	89,971	89,995	89,376	89,460	89,238	88,991	88,759	88,586	88,526	88,322	89,051	88,606	88,541
Government	15,912	15,689	15,637	15,526	15,475	15,491	15,397	15,585	15,578	15,527	15,492	15,453	15,422	15,835	15,443
Private industries	72,612	73,853	74,334	74,469	73,901	73,969	73,841	73,406	73,181	73,059	73,034	72,869	73,629	72,970	73,098
Private households	1,192	1,208	1,216	1,259	1,102	1,162	1,204	1,291	1,248	1,161	1,225	1,192	1,202	1,201	1,200
Other industries	71,420	72,645	73,118	73,210	72,799	72,807	72,637	72,115	71,932	71,898	71,809	71,677	72,427	71,770	71,898
Self-employed workers	7,000	7,097	7,071	7,103	7,217	7,152	7,141	7,057	6,971	7,055	7,126	7,264	7,269	7,319	7,268
Unpaid family workers	413	390	389	387	399	451	425	410	410	408	434	413	382	397	390
PERSONS AT WORK¹															
Nonagricultural industries	90,209	91,377	92,532	91,569	90,878	91,384	91,323	90,922	90,125	90,892	90,548	90,596	91,282	91,020	90,501
Full-time schedules	73,590	74,339	75,620	74,467	73,794	73,886	73,915	73,360	72,803	73,028	72,649	72,335	73,063	72,662	72,438
Part time for economic reasons	4,064	4,499	4,374	4,350	4,656	5,009	5,026	5,288	5,071	5,563	5,717	5,834	5,763	5,444	5,492
Usually work full time	1,714	1,738	1,680	1,729	1,759	2,006	1,945	2,121	1,783	2,193	2,237	2,223	2,211	2,064	2,001
Usually work part time	2,350	2,761	2,694	2,621	2,897	3,003	3,081	3,167	3,287	3,370	3,480	3,611	3,552	3,380	3,491
Part time for noneconomic reasons	12,555	12,539	12,538	12,752	12,428	12,489	12,382	12,274	12,251	12,300	12,183	12,427	12,483	12,914	12,579

¹Excludes 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		1981						1982						
	1980	1981	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
CHARACTERISTIC															
Total, 16 years and over	7.1	7.6	7.2	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5	9.8
Both sexes, 16 to 19 years	17.8	19.6	18.7	19.0	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3	24.1
Men, 20 years and over	5.9	6.3	5.8	6.0	6.2	6.7	7.1	7.9	7.5	7.6	7.9	8.2	8.4	8.7	8.8
Women, 20 years and over	6.4	6.8	6.7	6.6	6.9	7.0	7.2	7.4	7.2	7.6	7.9	8.3	8.3	8.1	8.4
White, total	6.3	6.7	6.3	6.2	6.6	7.0	7.4	7.7	7.5	7.7	7.9	8.4	8.5	8.4	8.7
Both sexes, 16 to 19 years	15.5	17.3	16.4	16.1	17.2	17.7	19.0	19.0	19.6	20.0	19.0	20.8	20.3	19.4	21.0
Men, 16 to 19 years	16.2	17.9	16.6	16.7	17.5	17.9	19.6	20.2	20.8	20.4	20.2	22.3	21.2	21.1	22.6
Women, 16 to 19 years	14.8	16.6	16.2	15.4	16.8	17.5	18.3	17.7	18.2	19.4	17.6	19.2	19.2	17.5	19.2
Men, 20 years and over	5.3	5.6	5.0	5.2	5.5	5.9	6.4	6.9	6.6	6.7	7.0	7.3	7.5	7.7	7.9
Women, 20 years and over	5.6	5.9	5.8	5.5	5.9	6.1	6.3	6.4	6.3	6.6	6.9	7.2	7.3	7.1	7.3
Black, total	14.3	15.6	14.9	16.3	16.3	16.8	16.8	17.3	16.8	17.3	18.0	18.4	18.7	18.5	18.5
Both sexes, 16 to 19 years	38.5	41.4	40.0	49.0	40.8	45.6	44.1	42.2	41.2	42.3	46.0	48.1	49.8	52.6	49.7
Men, 16 to 19 years	37.5	40.7	41.8	49.9	38.5	41.6	41.9	39.6	36.3	40.7	48.5	48.3	50.6	58.1	48.3
Women, 16 to 19 years	39.8	42.2	37.9	47.8	43.4	49.5	46.6	45.1	46.7	44.2	43.1	47.8	48.9	46.2	51.2
Men, 20 years and over	12.4	13.5	12.7	13.6	14.5	14.7	15.5	16.5	16.3	16.0	16.0	16.9	17.0	17.1	16.8
Women, 20 years and over	11.9	13.4	13.1	13.8	14.0	13.9	13.6	14.1	13.3	14.5	15.4	15.6	15.3	15.0	15.5
Hispanic Origin, total	10.1	10.4	10.0	9.9	9.6	10.7	11.5	11.0	12.0	12.6	12.7	12.5	13.9	13.5	13.9
Married men, spouse present	4.2	4.3	3.9	4.0	4.4	4.8	5.2	5.7	5.3	5.3	5.5	6.0	6.1	6.5	6.6
Married women, spouse present	5.8	6.0	5.7	5.5	6.0	6.1	6.5	6.6	6.2	7.0	7.1	7.8	7.4	7.0	7.4
Women who maintain families	9.2	10.4	11.2	10.1	10.7	10.6	10.8	10.5	10.4	10.2	10.6	11.5	11.8	12.4	12.0
Full-time workers	6.9	7.3	6.8	6.9	7.3	7.7	8.1	8.7	8.4	8.5	8.9	9.2	9.2	9.4	9.5
Part-time workers	8.8	9.4	9.3	9.6	9.6	9.5	10.2	9.2	9.6	10.8	10.0	10.9	10.5	9.8	11.4
Unemployed 15 weeks and over	1.7	2.1	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.5	2.7	2.7	3.0	3.3	3.2
Labor force time lost ¹	7.9	8.5	7.9	7.9	8.5	9.1	9.5	10.1	10.0	9.8	10.4	10.4	11.1	10.2	10.7
OCCUPATION															
White-collar workers	3.7	4.0	4.0	3.9	4.1	4.1	4.2	4.5	4.2	4.6	4.8	4.9	4.8	5.0	4.9
Professional and technical	2.5	2.8	2.8	2.5	2.8	2.6	2.7	3.4	2.9	3.1	3.2	3.2	3.3	3.3	3.3
Managers and administrators, except farm	2.4	2.7	2.6	2.7	2.7	2.8	3.0	3.1	2.7	3.1	3.0	3.3	3.5	3.8	3.7
Salesworkers	4.4	4.6	4.9	4.7	5.0	4.9	5.0	4.9	4.5	4.8	5.8	5.6	5.2	5.8	5.4
Clerical workers	5.3	5.7	5.7	5.7	5.8	6.0	6.0	6.2	6.3	6.7	6.9	7.2	6.8	6.9	6.9
Blue-collar workers	10.0	10.3	9.5	9.5	10.2	10.9	11.8	12.7	12.5	12.5	12.9	13.7	13.5	13.9	14.4
Craft and kindred workers	6.6	7.5	6.9	7.0	7.7	8.3	8.5	9.3	9.0	8.4	9.1	9.6	9.4	10.3	10.9
Operatives, except transport	12.2	12.2	11.1	11.1	11.6	12.8	14.1	15.5	15.4	15.4	15.9	16.9	16.5	16.7	17.4
Transport equipment operatives	8.8	8.7	7.3	8.0	8.7	8.0	10.4	10.5	10.2	10.3	10.4	10.7	11.8	13.0	11.6
Nonfarm laborers	14.6	14.7	14.4	13.2	14.6	15.6	16.0	16.9	16.9	17.9	17.9	19.2	18.3	17.9	18.6
Service workers	7.9	8.9	8.0	8.9	9.0	9.3	9.7	9.6	9.2	9.8	10.2	11.1	11.3	9.9	10.5
Farmworkers	4.6	5.3	4.8	5.4	4.0	6.2	6.2	6.4	6.9	4.9	5.4	5.8	8.3	7.2	6.1
INDUSTRY															
Nonagricultural private wage and salary workers ²	7.4	7.7	7.2	7.3	7.7	8.1	8.4	9.1	8.8	9.0	9.5	9.9	9.9	10.0	10.2
Construction	14.1	15.6	15.2	16.2	16.3	17.6	17.8	18.1	18.7	18.1	17.9	19.4	18.8	19.2	20.3
Manufacturing	8.5	8.3	7.3	7.0	7.9	8.6	9.4	11.0	10.4	10.6	10.8	11.3	11.6	12.3	12.0
Durable goods	8.9	8.2	7.1	6.5	7.7	8.6	9.5	11.8	11.0	11.3	10.8	11.9	12.2	13.2	12.7
Nondurable goods	7.9	8.4	7.6	7.9	8.3	8.6	9.3	9.6	9.5	9.5	10.8	10.5	10.7	11.0	11.0
Transportation and public utilities	4.9	5.2	4.1	4.8	4.2	4.8	5.5	6.0	6.4	5.9	5.6	7.0	6.5	6.9	6.1
Wholesale and retail trade	7.4	8.1	7.9	7.9	8.5	8.4	8.6	8.9	8.7	9.0	10.3	10.1	10.6	9.7	10.5
Finance and service industries	5.3	5.9	5.7	5.7	6.0	6.2	6.1	6.4	5.9	6.5	6.9	7.0	6.9	6.8	7.0
Government workers	4.1	4.7	4.6	4.5	4.7	4.7	5.2	5.0	4.8	5.2	4.9	5.3	5.0	4.6	4.6
Agricultural wage and salary workers	11.0	12.1	10.7	12.0	11.0	13.4	14.1	14.8	16.2	12.8	14.0	14.6	18.2	16.3	13.8

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		1981							1982						
	1980	1981	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	
Total, 16 years and over	7.1	7.6	7.2	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5	9.8	
16 to 19 years	17.8	19.6	18.7	19.0	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3	24.1	
16 to 17 years	20.0	21.4	19.8	20.8	21.4	21.5	22.6	21.9	21.9	22.7	22.7	24.6	25.3	23.7	26.1	
18 to 19 years	16.2	18.4	17.8	17.6	18.5	20.0	20.5	21.2	21.3	22.0	21.3	21.9	21.3	21.9	22.8	
20 to 24 years	11.5	12.3	11.5	12.1	12.3	12.7	13.0	13.5	13.5	14.1	14.2	14.7	14.3	14.4	14.5	
25 years and over	5.1	5.4	5.2	5.2	5.4	5.7	6.0	6.5	6.3	6.4	6.8	7.0	7.1	7.4	7.5	
25 to 54 years	5.5	5.8	5.5	5.5	5.8	6.2	6.5	6.9	6.7	6.8	7.3	7.4	7.7	7.7	7.9	
55 years and over	3.3	3.6	3.5	3.5	3.8	3.8	3.8	4.1	4.2	4.3	4.6	5.0	4.8	5.4	5.2	
Men, 16 years and over	6.9	7.4	6.7	7.1	7.3	7.7	8.3	9.0	8.6	8.7	9.0	9.4	9.6	9.7	9.9	
16 to 19 years	18.3	20.1	18.8	19.8	19.9	20.1	21.8	22.3	22.1	22.5	23.5	24.4	24.0	24.2	25.1	
16 to 17 years	20.4	22.0	19.9	21.5	21.5	21.1	22.7	22.6	23.0	23.0	24.3	24.7	26.3	25.8	28.1	
18 to 19 years	16.7	18.8	17.9	18.3	18.7	19.3	21.0	22.2	21.4	22.1	22.9	24.3	21.9	24.0	23.4	
20 to 24 years	12.5	13.2	11.6	12.9	13.1	13.8	14.4	14.8	14.9	15.4	15.7	16.0	15.5	15.8	15.9	
25 years and over	4.8	5.1	4.7	4.9	5.0	5.5	5.8	6.5	6.3	6.3	6.6	6.9	6.9	7.5	7.5	
25 to 54 years	5.1	5.5	5.0	5.2	5.5	5.9	6.3	6.9	6.7	6.7	7.1	7.2	7.5	8.0	8.1	
55 years and over	3.3	3.5	3.4	3.4	3.5	3.7	3.7	4.4	4.3	4.2	4.8	5.1	4.7	5.0	4.8	
Women, 16 years and over	7.4	7.9	7.8	7.7	8.0	8.2	8.4	8.5	8.4	8.9	9.0	9.4	9.5	9.1	9.6	
16 to 19 years	17.2	19.0	18.6	18.2	19.5	20.7	20.9	20.5	21.2	22.1	20.1	21.3	22.1	20.2	23.1	
16 to 17 years	19.6	20.7	19.7	20.0	21.2	21.9	22.5	21.1	20.6	22.5	20.8	24.5	24.1	21.4	24.1	
18 to 19 years	15.6	17.9	17.7	16.9	18.3	20.6	19.9	20.0	21.1	21.9	19.6	19.4	20.6	19.7	22.2	
20 to 24 years	10.4	11.2	11.3	11.1	11.4	11.5	11.3	12.0	11.9	12.7	12.6	13.3	12.9	12.9	12.9	
25 years and over	5.5	5.9	5.8	5.6	6.0	6.1	6.4	6.4	6.3	6.5	7.0	7.2	7.4	7.2	7.4	
25 to 54 years	6.0	6.3	6.1	6.0	6.3	6.5	6.8	6.9	6.7	7.0	7.6	7.7	8.0	7.4	7.7	
55 years and over	3.2	3.8	3.7	3.7	4.3	4.0	3.8	3.7	4.1	4.3	4.3	4.8	5.0	6.0	6.0	

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

[Numbers in thousands]

Reason for unemployment	Annual average		1981							1982						
	1980	1981	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	
NUMBER OF UNEMPLOYED																
Lost last job	3,947	4,267	3,867	4,106	4,426	4,573	4,905	5,343	5,205	5,153	5,622	5,906	5,901	6,302	6,177	
On layoff	1,488	1,430	1,225	1,276	1,452	1,631	1,826	2,042	1,860	1,740	1,828	1,946	1,969	2,071	2,079	
Other job losers	2,459	2,837	2,642	2,830	2,974	2,942	3,079	3,301	3,345	3,413	3,794	3,959	3,932	4,231	4,098	
Left last job	891	923	926	879	921	976	916	923	835	964	885	937	874	813	813	
Reentered labor force	1,927	2,102	2,078	2,034	2,058	2,178	2,339	2,244	2,079	2,277	2,249	2,365	2,438	2,372	2,528	
Seeking first job	872	981	940	971	977	1,002	996	1,021	1,055	1,100	1,044	1,081	1,154	1,088	1,249	
PERCENT DISTRIBUTION																
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Job losers	51.7	51.6	49.5	51.4	52.8	52.4	53.6	56.1	56.7	54.3	57.4	57.4	56.9	59.6	57.4	
On layoff	19.5	17.3	15.7	16.0	17.3	18.7	19.9	21.4	20.3	18.3	18.7	18.9	19.0	19.6	19.3	
Other job losers	32.1	34.3	33.8	35.4	35.5	33.7	33.6	34.6	36.5	35.9	38.7	38.5	37.9	40.0	38.1	
Job leavers	11.7	11.2	11.9	11.0	11.0	11.2	10.0	9.7	9.1	10.2	9.0	9.1	8.4	7.7	7.5	
Reentrants	25.2	25.4	26.6	25.5	24.6	25.0	25.5	23.5	22.7	24.0	22.9	23.0	23.5	22.4	23.5	
New entrants	11.4	11.9	12.0	12.2	11.7	11.5	10.9	10.7	11.5	11.6	10.7	10.5	11.1	10.3	11.6	
PERCENT OF CIVILIAN LABOR FORCE																
Job losers	3.7	3.9	3.6	3.8	4.1	4.2	4.5	4.9	4.8	4.7	5.1	5.4	5.3	5.7	5.6	
Job leavers	.8	.8	.9	.8	.8	.9	.8	.8	.8	.9	.8	.9	.8	.7	.7	
Reentrants	1.8	1.9	1.9	1.9	1.9	2.0	2.1	2.1	1.9	2.1	2.1	2.2	2.2	2.2	2.3	
New entrants	.8	.9	.9	.9	.9	.9	.9	.9	1.0	1.0	1.0	1.0	1.0	1.0	1.1	

7. Duration of unemployment, seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average		1981							1982						
	1980	1981	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	
Less than 5 weeks	3,295	3,449	3,323	3,326	3,529	3,707	3,852	4,037	3,852	3,789	3,825	3,958	3,874	3,543	3,990	
5 to 14 weeks	2,470	2,539	2,312	2,469	2,585	2,686	2,882	3,016	3,068	3,052	3,078	3,304	3,320	3,458	3,161	
15 weeks and over	1,871	2,285	2,170	2,217	2,248	2,292	2,364	2,372	2,399	2,724	2,954	3,015	3,286	3,673	3,580	
15 to 26 weeks	1,052	1,122	1,096	1,078	1,146	1,166	1,229	1,189	1,210	1,445	1,605	1,508	1,634	1,826	1,792	
27 weeks and over	820	1,162	1,074	1,139	1,102	1,126	1,135	1,183	1,190	1,278	1,349	1,507	1,652	1,847	1,788	
Mean duration, in weeks	11.9	13.7	14.1	14.3	13.7	13.6	13.1	12.8	13.5	14.1	13.9	14.2	14.6	16.5	15.6	
Median duration, in weeks	6.5	6.9	7.0	7.0	6.9	6.8	6.9	6.7	7.2	7.3	7.6	8.5	9.0	9.8	8.3	

EMPLOYMENT, HOURS, AND EARNINGS DATA FROM ESTABLISHMENT SURVEYS

EMPLOYMENT, HOURS, AND EARNINGS DATA in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by 177,000 establishments representing all industries except agriculture. In most industries, the sampling probabilities are based on the size of the establishment; most large establishments are therefore in the sample. (An establishment is not necessarily a firm; it may be a branch plant, for example, or warehouse.) Self-employed persons and others not on a regular civilian payroll are outside the scope of the survey because they are excluded from establishment records. This largely accounts for the difference in employment figures between the household and establishment surveys.

Definitions

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

Production workers in manufacturing include blue-collar worker supervisors and all nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 11-15 include production workers in manufacturing and mining; construction workers in construction; and nonsupervisory workers in transportation and public utilities; in wholesale and retail trade; in finance, insurance, and real estate; and in services industries. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

Earnings are the payments production or nonsupervisory workers receive during the survey period, including premium pay for overtime or late-shift work but excluding irregular bonuses and other special

payments. **Real earnings** are earnings adjusted to reflect the effects of changes in consumer prices. The deflator for this series is derived from the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W). The **Hourly Earnings Index** is calculated from average hourly earnings data adjusted to exclude the effects of two types of changes that are unrelated to underlying wage-rate developments: fluctuations in overtime premiums in manufacturing (the only sector for which overtime data are available) and the effects of changes and seasonal factors in the proportion of workers in high-wage and low-wage industries.

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

Notes on the data

Establishment data collected by the Bureau of Labor Statistics are periodically adjusted to comprehensive counts of employment (called "benchmarks"). The latest complete adjustment was made with the release of May 1982 data, published in the July 1982 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 February 1982 and seasonally adjusted data from January 1974 through February 1982) and in *Employment and Earnings, United States, 1909-78*, BLS Bulletin 1312-11 (for prior periods).

A comprehensive discussion of the differences between household and establishment data on employment appears in Gloria P. Green, "Comparing employment estimates from household and payroll surveys," *Monthly Labor Review*, December 1969, pp. 9-20. See also *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976).

8. Employment by industry, selected years, 1950-81

[Nonagricultural payroll data, in thousands]

Year	Total	Private sector	Goods-producing				Service-producing									
			Total	Mining	Construction	Manufacturing	Total	Transportation and public utilities	Wholesale and retail trade			Finance, insurance, and real estate	Services	Government		
									Total	Wholesale trade	Retail trade			Total	Federal	State and local
1950	45,197	39,170	18,506	901	2,364	15,241	26,691	4,034	9,386	2,635	6,751	1,888	5,357	6,026	1,928	4,098
1955	50,641	43,727	20,513	792	2,839	16,882	30,128	4,141	10,535	2,926	7,610	2,298	6,240	6,914	2,187	4,727
1960 ¹	54,189	45,836	20,434	712	2,926	16,796	33,755	4,004	11,391	3,143	8,248	2,629	7,378	8,353	2,270	6,083
1964	58,283	48,686	21,005	634	3,097	17,274	37,278	3,951	12,160	3,337	8,823	2,911	8,660	9,596	2,348	7,248
1965	60,765	50,689	21,926	632	3,232	18,062	38,839	4,036	12,716	3,466	9,250	2,977	9,036	10,074	2,378	7,696
1966	63,901	53,116	23,158	627	3,317	19,214	40,743	4,158	13,245	3,597	9,648	3,058	9,498	10,784	2,564	8,220
1967	65,803	54,413	23,308	613	3,248	19,447	42,495	4,268	13,606	3,689	9,917	3,185	10,045	11,391	2,719	8,672
1968	67,897	56,058	23,737	606	3,350	19,781	44,160	4,318	14,099	3,779	10,320	3,337	10,567	11,839	2,737	9,102
1969	70,384	58,189	24,361	619	3,575	20,167	46,023	4,442	14,705	3,907	10,798	3,512	11,169	12,195	2,758	9,437
1970	70,880	58,325	23,578	623	3,588	19,367	47,302	4,515	15,040	3,993	11,047	3,645	11,548	12,554	2,731	9,823
1971	71,214	58,331	22,935	609	3,704	18,623	48,278	4,476	15,352	4,001	11,351	3,772	11,797	12,881	2,696	10,185
1972	73,675	60,341	23,668	628	3,889	19,151	50,007	4,541	15,949	4,113	11,836	3,908	12,276	13,334	2,684	10,649
1973	76,790	63,058	24,893	642	4,097	20,154	51,897	4,656	16,607	4,277	12,329	4,046	12,857	13,732	2,663	11,068
1974	78,265	64,095	24,794	697	4,020	20,077	53,471	4,725	16,987	4,433	12,554	4,148	13,441	14,170	2,724	11,446
1975	76,945	62,259	22,600	752	3,525	18,323	54,345	4,542	17,060	4,415	12,645	4,165	13,892	14,686	2,748	11,937
1976	79,382	64,511	23,352	779	3,576	18,997	56,030	4,582	17,755	4,546	13,209	4,271	14,551	14,871	2,733	12,138
1977	82,471	67,344	24,346	813	3,851	19,682	58,125	4,713	18,516	4,708	13,808	4,467	15,303	15,127	2,727	12,399
1978	86,697	71,026	25,585	851	4,229	20,505	61,113	4,923	19,542	4,969	14,573	4,724	16,252	15,672	2,753	12,919
1979	89,823	73,876	26,461	958	4,463	21,040	63,363	5,136	20,192	5,204	14,989	4,975	17,112	15,947	2,773	13,147
1980	90,406	74,166	25,658	1,027	4,346	20,285	64,748	5,146	20,310	5,275	15,035	5,180	17,890	16,241	2,866	13,375
1981	91,105	75,081	25,481	1,132	4,176	20,173	65,625	5,157	20,551	5,359	15,192	5,301	18,592	16,024	2,772	13,253

¹Data include Alaska and Hawaii beginning in 1959.

9. Employment by State

[Nonagricultural payroll data, in thousands]

State	June 1981	May 1982	June 1982 ^P	State	June 1981	May 1982	June 1982 ^P
Alabama	1,351.1	1,334.7	1,333.5	Montana	288.3	288.1	288.8
Alaska	184.7	185.4	192.1	Nebraska	633.4	617.1	618.2
Arizona	1,029.7	1,040.1	1,016.7	Nevada	417.7	416.0	417.6
Arkansas	740.4	728.7	719.0	New Hampshire	401.4	393.0	400.5
California	10,112.0	10,026.9	10,042.9	New Jersey	3,136.6	3,069.9	3,110.1
Colorado	1,283.4	1,284.5	1,290.6	New Mexico	478.9	475.6	474.1
Connecticut	1,457.8	1,425.2	1,429.4	New York	7,363.2	7,305.2	7,346.7
Delaware	264.5	258.3	257.9	North Carolina	2,412.6	2,348.4	2,350.6
District of Columbia	614.0	603.3	606.0	North Dakota	251.6	252.8	255.1
Florida	3,726.4	3,785.6	3,763.4	Ohio	4,384.6	4,244.4	4,257.2
Georgia	2,186.4	2,163.1	2,155.0	Oklahoma	1,195.9	1,222.1	1,213.4
Hawaii	406.8	402.7	402.4	Oregon	1,039.6	974.9	982.9
Idaho	329.3	317.4	319.1	Pennsylvania	4,802.3	4,601.2	4,593.5
Illinois	4,800.4	4,638.5	4,637.4	Rhode Island	406.0	391.0	394.4
Indiana	2,135.5	2,046.3	2,034.6	South Carolina	1,210.2	1,180.9	1,178.3
Iowa	1,098.9	1,063.6	1,054.0	South Dakota	244.2	235.4	237.1
Kansas	957.5	939.6	938.2	Tennessee	1,757.8	1,728.1	1,724.4
Kentucky	1,191.7	1,169.8	1,159.8	Texas	6,147.3	6,289.3	6,289.9
Louisiana	1,634.7	1,621.6	1,620.1	Utah	560.4	562.0	565.0
Maine	430.1	409.6	421.0	Vermont	203.4	200.4	200.7
Maryland	1,735.4	1,690.4	1,699.2	Virginia	2,187.1	2,165.8	2,180.7
Massachusetts	2,686.0	2,641.3	2,642.6	Washington	1,628.5	1,566.8	1,578.0
Michigan	3,416.5	3,245.0	3,243.8	West Virginia	627.9	609.2	606.1
Minnesota	1,787.0	1,739.7	1,742.3	Wisconsin	1,937.4	1,875.1	1,879.4
Mississippi	821.8	805.0	793.5	Wyoming	222.8	218.9	221.3
Missouri	1,991.2	1,971.9	1,977.3	Virgin Islands	37.9	35.0	34.8

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

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual Average		1981						1982						
	1980	1981	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June ^P	July ^P
TOTAL	90,406	91,105	91,396	91,322	91,363	91,224	90,996	90,642	90,460	90,459	90,304	90,083	90,166	89,860	89,843
TOTAL PRIVATE	74,166	75,081	75,432	75,428	75,459	75,307	75,088	74,725	74,596	74,609	74,445	74,231	74,313	74,043	73,993
GOODS-PRODUCING	25,658	25,481	25,718	25,637	25,583	25,393	25,176	24,908	24,684	24,631	24,450	24,289	24,255	25,992	25,878
Mining	1,027	1,132	1,164	1,180	1,192	1,195	1,202	1,206	1,201	1,203	1,197	1,182	1,152	1,121	1,107
Construction	4,346	4,176	4,175	4,146	4,124	4,101	4,071	4,026	3,966	3,974	3,934	3,938	3,988	3,942	3,932
Manufacturing	20,285	20,173	20,379	20,311	20,267	20,097	19,903	19,676	19,517	19,454	19,319	19,169	19,115	18,929	18,839
Production workers	14,214	14,021	14,212	14,136	14,087	13,915	13,717	13,488	13,431	13,290	13,179	13,042	13,008	12,868	12,818
Durable goods	12,187	12,117	12,266	12,228	12,184	12,059	11,901	11,724	11,622	11,575	11,490	11,375	11,332	11,205	11,157
Production workers	8,442	8,301	8,439	8,389	8,345	8,218	8,061	7,885	7,793	7,759	7,685	7,576	7,553	7,458	7,437
Lumber and wood products	690.5	668.7	683	671	661	643	628	615	607	611	607	615	617	616	617
Furniture and fixtures	465.8	467.3	476	475	473	469	462	457	452	449	446	443	443	444	445
Stone, clay, and glass products	662.1	638.2	644	643	638	629	620	610	596	596	584	584	586	580	576
Primary metal industries	1,142.2	1,121.1	1,132	1,134	1,125	1,104	1,082	1,053	1,038	1,024	1,007	976	945	926	923
Fabricated metal products	1,613.1	1,592.4	1,617	1,610	1,604	1,577	1,553	1,529	1,515	1,505	1,496	1,481	1,472	1,454	1,448
Machinery, except electrical	2,494.0	2,507.0	2,527	2,532	2,539	2,532	2,511	2,486	2,459	2,446	2,419	2,389	2,377	2,317	2,274
Electric and electronic equipment	2,090.6	2,092.2	2,112	2,116	2,113	2,101	2,077	2,049	2,055	2,048	2,038	2,034	2,034	2,027	2,025
Transportation equipment	1,899.7	1,892.6	1,925	1,901	1,884	1,861	1,830	1,791	1,777	1,778	1,774	1,748	1,755	1,746	1,756
Instruments and related products	711.3	726.8	731	734	734	731	727	725	720	718	716	713	713	709	706
Miscellaneous manufacturing	418.0	410.7	419	412	413	412	411	409	403	400	397	392	390	386	387
Nondurable goods	8,098	8,056	8,113	8,083	8,083	8,038	8,002	7,952	7,895	7,879	7,829	7,794	7,783	7,724	7,682
Production workers	5,772	5,721	5,773	5,747	5,742	5,697	5,656	5,603	5,548	5,531	5,494	5,466	5,455	5,410	5,381
Food and kindred products	1,708.0	1,674.3	1,678	1,659	1,658	1,662	1,664	1,661	1,657	1,663	1,658	1,643	1,652	1,638	1,621
Tobacco manufactures	68.9	69.8	70	70	69	69	69	68	69	68	68	67	67	67	65
Textile mill products	847.7	822.5	835	829	827	814	804	794	780	777	760	773	759	739	744
Apparel and other textile products	1,263.5	1,244.0	1,255	1,253	1,253	1,243	1,235	1,222	1,201	1,201	1,186	1,165	1,165	1,162	1,150
Paper and allied products	692.8	687.8	691	691	695	685	681	677	674	670	668	664	661	658	655
Printing and publishing	1,252.1	1,265.8	1,268	1,271	1,274	1,276	1,276	1,276	1,275	1,276	1,278	1,274	1,274	1,268	1,263
Chemicals and allied products	1,107.4	1,107.3	1,110	1,107	1,110	1,107	1,103	1,100	1,095	1,093	1,088	1,082	1,079	1,072	1,069
Petroleum and coal products	197.9	215.6	217	216	216	215	215	214	210	208	207	206	207	205	204
Rubber and miscellaneous plastics products	726.8	736.1	750	752	746	734	725	716	712	708	703	706	708	705	705
Leather and leather products	232.9	233.0	239	235	235	233	230	224	222	215	213	214	211	210	206
SERVICE-PRODUCING	64,748	65,625	65,678	65,685	65,780	65,831	65,820	65,734	65,776	65,828	65,854	65,794	65,911	65,868	65,965
Transportation and public utilities	5,146	5,157	5,168	5,168	5,181	5,162	5,150	5,128	5,125	5,115	5,100	5,094	5,101	5,081	5,058
Wholesale and retail trade	20,310	20,551	20,620	20,650	20,660	20,654	20,623	20,524	20,630	20,670	20,655	20,584	20,652	20,602	20,629
Wholesale trade	5,275	5,359	5,375	5,387	5,383	5,380	5,375	5,357	5,346	5,343	5,336	5,323	5,331	5,307	5,298
Retail trade	15,035	15,192	15,245	15,263	15,277	15,274	15,248	15,167	15,284	15,327	15,319	15,261	15,321	15,295	15,331
Finance, insurance, and real estate	5,160	5,301	5,311	5,319	5,328	5,325	5,324	5,331	5,326	5,326	5,336	5,335	5,342	5,356	5,362
Services	17,890	18,592	18,615	18,654	18,707	18,773	18,815	18,834	18,831	18,867	18,904	18,929	18,963	19,012	19,066
Government	16,241	16,024	15,964	15,894	15,904	15,917	15,908	15,917	15,864	15,850	15,859	15,852	15,853	15,817	15,850
Federal	2,866	2,772	2,775	2,769	2,764	2,757	2,749	2,756	2,741	2,737	2,736	2,730	2,728	2,739	2,748
State and local	13,375	13,253	13,189	13,125	13,140	13,160	13,159	13,161	13,123	13,113	13,123	13,122	13,125	13,078	13,102

11. Hours and earnings, by industry division, selected years, 1950-81

[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
1955	67.72	39.6	1.71	89.54	40.7	2.20	90.90	37.1	2.45	75.30	40.7	1.85
1960 ¹	80.67	38.6	2.09	105.04	40.4	2.60	112.67	36.7	3.07	89.72	39.7	2.26
1964	91.33	38.7	2.36	117.74	41.9	2.81	132.06	37.2	3.55	102.97	40.7	2.53
1965	95.45	38.8	2.46	123.52	42.3	2.92	138.38	37.4	3.70	107.53	41.2	2.61
1966	98.82	38.6	2.56	130.24	42.7	3.05	146.26	37.6	3.89	112.19	41.4	2.71
1967	101.84	38.0	2.68	135.89	42.6	3.19	154.95	37.7	4.11	114.49	40.6	2.82
1968	107.73	37.8	2.85	142.71	42.6	3.35	164.49	37.3	4.41	122.51	40.7	3.01
1969	114.61	37.7	3.04	154.80	43.0	3.60	181.54	37.9	4.79	129.51	40.6	3.19
1970	119.83	37.1	3.23	164.40	42.7	3.85	195.45	37.3	5.24	133.33	39.8	3.35
1971	127.31	36.9	3.45	172.14	42.4	4.06	211.67	37.2	5.69	142.44	39.9	3.57
1972	136.90	37.0	3.70	189.14	42.6	4.44	221.19	36.5	6.06	154.71	40.5	3.82
1973	145.39	36.9	3.94	201.40	42.4	4.75	235.89	36.8	6.41	166.46	40.7	4.09
1974	154.76	36.5	4.24	219.14	41.9	5.23	249.25	36.6	6.81	176.80	40.0	4.42
1975	163.53	36.1	4.53	249.31	41.9	5.95	266.08	36.4	7.31	190.79	39.5	4.83
1976	175.45	36.1	4.86	273.90	42.4	6.46	283.73	36.8	7.71	209.32	40.1	5.22
1977	189.00	36.0	5.25	301.20	43.4	6.94	295.65	36.5	8.10	228.90	40.3	5.68
1978	203.70	35.8	5.69	332.88	43.4	7.67	318.69	36.8	8.66	249.27	40.4	6.17
1979	219.91	35.7	6.16	365.07	43.0	8.49	342.99	37.0	9.27	269.34	40.2	6.70
1980	235.10	35.3	6.66	397.06	43.3	9.17	367.78	37.0	9.94	288.62	39.7	7.27
1981	255.20	35.2	7.25	439.19	43.7	10.05	398.52	36.9	10.80	318.00	39.8	7.99
	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			
1955				55.16	39.4	1.40	63.92	37.6	1.70			
1960 ¹				66.01	38.6	1.71	75.14	37.2	2.02			
1964	\$118.78	41.1	\$2.89	74.66	37.9	1.97	85.79	37.3	2.30	\$70.03	36.1	\$1.94
1965	125.14	41.3	3.03	76.91	37.7	2.04	88.91	37.2	2.39	73.60	35.9	2.05
1966	128.13	41.2	3.11	79.39	37.1	2.14	92.13	37.3	2.47	77.04	35.5	2.17
1967	130.82	40.5	3.23	82.35	36.6	2.25	95.72	37.1	2.58	80.38	35.1	2.29
1968	138.85	40.6	3.42	87.00	36.1	2.41	101.75	37.0	2.75	83.97	34.7	2.42
1969	147.74	40.7	3.63	91.39	35.7	2.56	108.70	37.1	2.93	90.57	34.7	2.61
1970	155.93	40.5	3.85	96.02	35.3	2.72	112.67	36.7	3.07	96.66	34.4	2.81
1971	168.82	40.1	4.21	101.09	35.1	2.88	117.85	36.6	3.22	103.06	33.9	3.04
1972	187.86	40.4	4.65	106.45	34.9	3.05	122.98	36.6	3.36	110.85	33.9	3.27
1973	203.31	40.5	5.02	111.76	34.6	3.23	129.20	36.6	3.53	117.29	33.8	3.47
1974	217.48	40.2	5.41	119.02	34.2	3.48	137.61	36.5	3.77	126.00	33.6	3.75
1975	233.44	39.7	5.88	126.45	33.9	3.73	148.19	36.5	4.06	134.67	33.5	4.02
1976	256.71	39.8	6.45	133.79	33.7	3.97	155.43	36.4	4.27	143.52	33.3	4.31
1977	278.90	39.9	6.99	142.52	33.3	4.28	165.26	36.4	4.54	153.45	33.0	4.65
1978	302.80	40.0	7.57	153.64	32.9	4.67	178.00	36.4	4.89	163.67	32.8	4.99
1979	325.58	39.9	8.16	164.96	32.6	5.06	190.77	36.2	5.27	175.27	32.7	5.36
1980	351.25	39.6	8.87	176.46	32.2	5.48	209.60	36.2	5.79	190.71	32.6	5.85
1981	382.18	39.4	9.70	190.95	32.2	5.93	229.05	36.3	6.31	208.97	32.6	6.41

¹ Data include Alaska and Hawaii beginning in 1959.

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

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

Industry division and group	Annual average		1981						1982						
	1980	1981	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June ^P	July ^P
TOTAL PRIVATE	35.3	35.2	35.3	35.2	35.0	35.1	35.1	35.0	34.4	35.0	34.9	34.9	35.0	34.8	34.9
MANUFACTURING	39.7	39.8	40.0	39.9	39.4	39.5	39.3	39.1	37.6	39.4	39.0	39.0	39.1	39.2	39.3
Overtime hours	2.8	2.8	3.0	3.0	2.7	2.7	2.5	2.4	2.3	2.4	2.3	2.4	2.3	2.4	2.4
Durable goods	40.1	40.2	40.5	40.4	39.7	40.0	39.7	39.5	38.2	39.8	39.5	39.5	39.6	39.7	39.7
Overtime hours	2.8	2.8	3.0	3.0	2.7	2.6	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.2
Lumber and wood products	38.5	38.7	38.7	38.4	37.6	37.8	37.7	37.7	35.0	37.9	37.6	37.6	38.5	38.5	38.3
Furniture and fixtures	38.1	38.4	38.6	38.4	37.4	38.0	37.6	37.9	33.6	37.7	37.3	37.4	37.5	37.8	37.9
Stone, clay, and glass products	40.8	40.6	40.8	40.7	40.3	40.1	40.1	39.7	38.6	40.1	40.0	40.0	40.2	40.4	40.6
Primary metal industries	40.1	40.5	40.7	40.8	40.6	40.0	39.6	39.2	38.3	39.4	38.8	38.5	38.5	38.9	38.9
Fabricated metal products	40.4	40.3	40.5	40.4	39.6	40.0	39.7	39.5	38.1	39.7	39.5	39.4	39.5	39.4	39.5
Machinery, except electrical	41.0	40.9	41.2	41.1	40.3	40.8	40.7	40.4	39.3	40.7	40.2	40.1	39.8	39.8	40.0
Electric and electronic equipment	39.8	39.9	40.4	40.3	39.7	39.8	39.4	39.5	38.3	39.8	39.4	39.3	39.4	39.5	39.8
Transportation equipment	40.6	40.9	41.2	41.2	40.1	40.6	40.4	39.7	39.0	40.5	40.4	41.1	41.1	41.6	41.1
Instruments and related products	40.5	40.4	40.5	40.6	40.4	40.3	40.2	39.9	39.0	39.9	39.9	39.9	40.2	40.2	40.0
Miscellaneous manufacturing	38.7	38.8	39.0	38.9	38.4	38.9	39.0	38.5	37.3	38.6	38.6	38.5	38.7	38.5	38.6
Nondurable goods	39.0	39.1	39.2	39.2	38.9	38.9	38.7	38.6	36.8	38.9	38.5	38.4	38.5	38.6	38.6
Overtime hours	2.8	2.8	2.9	2.9	2.8	2.8	2.7	2.6	2.5	2.6	2.5	2.6	2.5	2.5	2.6
Food and kindred products	39.7	39.7	39.5	39.4	39.3	39.5	39.5	39.8	39.1	40.2	39.5	39.4	39.4	39.5	39.5
Textile mill products	40.1	39.6	40.1	39.8	38.8	39.0	38.7	37.8	32.3	38.3	37.6	37.7	37.9	37.9	38.1
Apparel and other textile products	35.4	35.7	35.8	35.9	35.2	35.5	35.5	35.1	31.4	35.5	35.0	34.7	34.8	35.1	35.1
Paper and allied products	42.2	42.5	42.7	42.5	43.0	42.4	42.0	41.8	41.3	42.3	41.8	42.1	41.8	42.0	42.2
Printing and publishing	37.1	37.3	37.3	37.3	37.1	37.1	37.1	37.1	36.9	37.4	37.1	37.1	36.8	37.0	36.9
Chemicals and allied products	41.5	41.6	41.7	41.7	42.2	41.5	41.2	41.3	41.0	41.2	40.7	40.7	41.0	41.1	41.0
Petroleum and coal products	41.8	43.2	43.1	42.9	43.1	42.2	42.5	42.7	44.3	43.5	43.5	44.0	44.1	44.0	43.3
Rubber and miscellaneous plastics products	40.0	40.3	40.5	40.5	39.7	39.9	39.6	39.4	37.9	40.0	39.6	39.8	39.9	40.1	40.2
Leather and leather products	36.7	36.8	36.4	36.7	36.2	36.7	36.5	36.1	34.1	35.6	35.8	35.6	35.6	35.8	35.5
WHOLESALE AND RETAIL TRADE	32.2	32.2	32.2	32.2	32.1	32.0	32.1	32.0	31.7	32.0	31.9	31.8	32.0	31.9	31.9
WHOLESALE TRADE	38.5	38.6	38.6	38.6	38.5	38.4	38.5	38.4	38.1	38.5	38.4	38.3	38.5	38.6	38.4
RETAIL TRADE	30.2	30.1	30.1	30.1	30.1	29.9	30.0	29.9	29.7	29.9	29.8	29.8	30.0	29.8	29.9
SERVICES	32.6	32.6	32.6	32.5	32.5	32.6	32.6	32.6	32.5	32.6	32.6	32.7	32.7	32.6	32.6

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 no longer 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.
r= revised.

13. 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		1981							1982						
	1980	1981	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June ^P	July ^P	
TOTAL PRIVATE	\$6.66	\$7.25	\$7.24	\$7.30	\$7.40	\$7.42	\$7.47	\$7.45	\$7.55	\$7.54	\$7.55	\$7.58	\$7.63	\$7.63	\$7.67	
Seasonally adjusted	(¹)	(¹)	7.27	7.34	7.37	7.40	7.45	7.46	7.52	7.53	7.54	7.59	7.65	7.66	7.70	
MINING	9.17	10.05	10.09	10.12	10.27	10.25	10.39	10.41	10.65	10.62	10.62	10.65	10.66	10.82	10.86	
CONSTRUCTION	9.94	10.80	10.79	10.92	11.07	11.65	11.18	11.26	11.59	11.32	11.33	11.32	11.46	11.41	11.52	
MANUFACTURING	7.27	7.99	8.02	8.03	8.16	8.16	8.20	8.27	8.42	8.34	8.37	8.42	8.45	8.50	8.55	
Durable goods	7.75	8.53	8.57	8.59	8.70	8.73	8.77	8.83	8.92	8.89	8.91	8.94	9.01	9.06	9.10	
Lumber and wood products	6.55	7.00	7.15	7.13	7.16	7.10	7.16	7.38	7.27	7.28	7.27	7.24	7.41	7.54	7.62	
Furniture and fixtures	5.49	5.91	5.92	5.99	6.01	6.06	6.05	6.12	6.28	6.19	6.21	6.21	6.23	6.30	6.34	
Stone, clay, and glass products	7.50	8.27	8.40	8.41	8.53	8.50	8.54	8.56	8.70	8.62	8.65	8.72	8.80	8.86	8.92	
Primary metal industries	9.77	10.81	10.78	10.99	11.22	10.97	11.10	11.08	11.23	11.20	11.15	11.24	11.23	11.32	11.42	
Fabricated metal products	7.45	8.20	8.21	8.26	8.33	8.39	8.42	8.53	8.55	8.57	8.64	8.69	8.79	8.82	8.83	
Machinery, except electrical	8.00	8.81	8.83	8.84	8.96	9.04	9.08	9.18	9.19	9.20	9.18	9.24	9.26	9.28	9.34	
Electric and electronic equipment	6.94	7.62	7.65	7.73	7.75	7.80	7.83	7.90	7.98	7.96	8.01	8.03	8.05	8.11	8.17	
Transportation equipment	9.35	10.39	10.44	10.37	10.49	10.74	10.74	10.76	10.79	10.82	10.89	10.89	11.08	11.20	11.20	
Instruments and related products	6.80	7.43	7.43	7.55	7.59	7.60	7.68	7.81	7.93	7.94	8.00	8.07	8.16	8.22	8.26	
Miscellaneous manufacturing	5.46	5.96	5.97	5.96	6.05	6.05	6.11	6.19	6.27	6.29	6.32	6.35	6.38	6.41	6.41	
Nondurable goods	6.55	7.18	7.22	7.23	7.36	7.33	7.38	7.44	7.67	7.54	7.57	7.65	7.66	7.71	7.78	
Food and kindred products	6.85	7.43	7.45	7.48	7.56	7.51	7.61	7.67	7.82	7.74	7.79	7.90	7.92	7.91	7.91	
Tobacco manufactures	7.74	8.88	9.46	8.70	8.76	8.67	9.04	8.96	9.21	9.56	9.72	10.05	9.93	10.39	10.57	
Textile mill products	5.07	5.52	5.50	5.65	5.69	5.72	5.73	5.72	5.76	5.76	5.76	5.79	5.79	5.80	5.81	
Apparel and other textile products	4.56	4.96	4.92	4.96	5.04	5.05	5.04	5.04	5.18	5.13	5.15	5.18	5.16	5.18	5.17	
Paper and allied products	7.84	8.60	8.73	8.67	8.95	8.82	8.89	8.96	9.06	8.99	9.03	9.11	9.14	9.27	9.40	
Printing and publishing	7.53	8.18	8.20	8.25	8.37	8.40	8.42	8.48	8.58	8.56	8.59	8.59	8.61	8.68	8.74	
Chemicals and allied products	8.30	9.12	9.16	9.19	9.38	9.37	9.42	9.53	9.68	9.68	9.71	9.81	9.83	9.95	10.04	
Petroleum and coal products	10.10	11.38	11.43	11.32	11.55	11.47	11.58	11.59	11.91	12.29	12.32	12.50	12.52	12.52	12.51	
Rubber and miscellaneous plastics products	6.52	7.16	7.18	7.23	7.29	7.30	7.31	7.38	7.51	7.49	7.45	7.52	7.56	7.65	7.70	
Leather and leather products	4.58	4.99	4.97	4.97	5.09	5.09	5.11	5.15	5.19	5.22	5.24	5.32	5.32	5.36	5.32	
TRANSPORTATION AND PUBLIC UTILITIES	8.87	9.70	9.67	9.87	9.95	9.94	10.05	10.06	10.10	10.13	10.07	10.14	10.17	10.19	10.24	
WHOLESALE AND RETAIL TRADE	5.48	5.93	5.91	5.94	6.04	6.01	6.04	6.02	6.17	6.16	6.16	6.18	6.20	6.19	6.20	
WHOLESALE TRADE	6.96	7.57	7.58	7.65	7.70	7.73	7.79	7.81	7.94	7.94	7.93	7.97	8.03	8.00	8.07	
RETAIL TRADE	4.88	5.25	5.24	5.25	5.37	5.29	5.32	5.31	5.43	5.42	5.43	5.44	5.47	5.47	5.46	
FINANCE, INSURANCE, AND REAL ESTATE	5.79	6.31	6.28	6.38	6.39	6.43	6.52	6.47	6.56	6.62	6.59	6.64	6.77	6.69	6.75	
SERVICES	5.85	6.41	6.34	6.41	6.52	6.58	6.67	6.66	6.79	6.79	6.77	6.81	6.85	6.82	6.88	

¹ Not available.

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

[1977=100]

Industry	Not seasonally adjusted					Seasonally adjusted						
	July 1981	May 1982	June 1982 ^P	July 1982 ^P	Percent change from: July 1981 to July 1982	July 1981	Mar. 1982	Apr. 1982	May 1982	June 1982 ^P	July 1982 ^P	Percent change from: June 1982 to July 1982
TOTAL PRIVATE (in current dollars)	138.8	147.4	147.5	148.4	6.9	139.1	145.4	146.3	147.7	148.0	148.7	0.4
Mining	149.0	156.8	159.6	160.5	7.7	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)
Construction	132.3	139.3	139.1	140.5	6.2	132.2	138.1	138.7	139.9	139.7	140.3	.5
Manufacturing	142.3	151.5	152.4	153.3	7.7	142.4	149.9	150.8	151.8	152.5	153.3	.5
Transportation and public utilities	138.5	147.2	147.2	147.4	6.4	139.0	146.3	146.9	148.2	148.0	148.0	-.7
Wholesale and retail trade	138.2	145.2	144.8	145.1	5.0	138.4	142.8	143.7	145.1	145.2	145.3	.1
Finance, insurance, and real estate	137.5	147.9	146.5	147.8	7.4	137.8	143.8	144.9	148.0	146.8	148.1	.9
Services	136.5	146.5	146.3	147.9	8.3	137.4	143.9	145.1	146.5	147.1	148.8	1.1
TOTAL PRIVATE (in constant dollars)	91.7	93.4	92.3	(²)	(²)	92.2	93.3	93.7	93.7	93.0	(²)	(²)

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

sufficient precision.
² Not available.

15. 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		1981						1982						
	1980	1981	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June ^P	July ^P
TOTAL PRIVATE:															
Current dollars	\$235.10	\$255.20	\$257.74	\$259.88	\$259.74	\$261.18	\$262.20	\$262.24	\$255.95	\$262.39	\$261.99	\$262.27	\$265.52	\$266.70	\$269.98
Seasonally adjusted	(¹)	(¹)	256.63	258.37	257.95	259.74	261.50	261.10	258.69	263.55	263.15	264.89	267.75	266.57	268.73
Constant (1977) dollars	172.74	170.13	170.35	170.64	168.88	169.49	169.71	169.30	164.70	168.31	168.37	167.80	168.16	167.12	(¹)
MINING	397.06	439.19	439.92	447.30	450.85	456.13	461.32	466.37	456.89	463.03	465.16	454.76	454.12	462.01	\$466.98
CONSTRUCTION	367.78	398.52	407.86	408.41	396.31	419.62	414.78	417.75	385.95	406.39	419.21	415.44	429.75	427.88	437.76
MANUFACTURING															
Current dollars	288.62	318.00	317.59	320.40	322.32	323.95	325.54	329.97	312.38	326.93	327.27	325.85	329.55	334.05	332.60
Constant (1977) dollars	212.06	212.00	209.91	210.37	209.57	210.22	210.71	213.02	201.02	209.70	210.33	208.48	208.71	209.04	(¹)
Durable goods	310.78	342.91	342.80	345.32	346.26	350.07	351.68	356.73	336.28	352.93	352.84	350.45	355.90	360.59	\$356.72
Lumber and wood products	252.18	270.90	276.71	278.07	271.36	271.22	269.93	272.80	248.71	272.63	273.73	270.05	285.29	294.06	291.85
Furniture and fixtures	209.17	226.94	223.78	231.21	226.58	233.92	230.51	238.07	204.10	231.51	233.50	230.39	231.76	238.77	235.21
Stone, clay, and glass products	306.00	335.76	342.72	344.81	346.32	344.25	345.87	343.26	325.38	337.90	344.27	347.93	355.52	361.49	362.15
Primary metal industries	391.78	437.81	434.43	442.90	457.78	435.51	440.67	438.77	431.23	443.52	434.85	434.99	430.11	440.35	439.67
Fabricated metal products	300.98	330.46	327.58	332.88	330.70	337.28	337.64	345.47	323.19	337.66	342.14	338.91	346.33	349.27	343.49
Machinery except electrical	328.00	360.33	357.62	359.79	361.98	367.93	372.28	381.89	360.25	374.44	370.87	367.75	367.62	369.34	367.06
Electric and electronic equipment	276.21	304.04	303.71	309.20	307.68	311.22	311.63	319.16	304.04	316.81	316.40	313.17	315.56	320.35	319.45
Transportation equipment	379.61	424.95	425.95	421.02	418.55	440.34	438.19	445.46	414.34	437.13	439.96	441.05	455.39	465.92	455.84
Instruments and related products	275.40	300.17	296.46	305.02	306.64	307.04	313.34	317.87	306.10	317.60	320.80	318.77	327.22	330.44	325.44
Miscellaneous manufacturing	211.30	231.25	229.85	231.84	234.14	237.77	241.35	242.03	229.48	241.54	244.58	242.57	245.63	246.79	244.22
Nondurable goods	255.45	280.74	282.30	284.86	287.78	286.60	288.56	291.65	277.65	291.04	289.93	291.47	294.14	298.38	300.31
Food and kindred products	271.95	294.97	295.02	298.45	300.89	296.65	302.88	309.87	302.63	307.28	303.81	306.52	312.05	312.45	313.24
Tobacco manufactures	294.89	344.54	365.16	354.09	352.15	341.60	350.75	341.38	332.48	366.15	362.56	367.83	369.40	397.94	387.92
Textile mill products	203.31	218.59	217.80	225.44	221.34	225.37	224.62	220.79	179.71	219.46	217.15	215.39	219.44	221.56	218.46
Apparel and other textile products	161.42	177.07	177.12	180.05	177.41	180.79	180.43	178.92	155.40	180.58	180.77	178.19	180.08	183.89	182.50
Paper and allied products	330.85	365.50	370.15	367.61	386.64	373.97	376.05	382.59	374.18	377.58	376.55	380.80	379.31	389.34	393.86
Printing and publishing	279.36	305.11	305.04	309.38	313.04	312.48	314.07	321.39	312.31	317.58	318.69	316.11	315.99	319.42	321.63
Chemicals and allied products	344.45	379.39	380.14	380.47	395.84	388.86	391.87	398.35	394.94	397.85	395.20	399.27	401.06	407.95	409.63
Petroleum and coal products	422.18	491.62	499.49	486.76	512.82	494.36	499.10	493.73	514.51	518.64	522.37	550.00	549.63	552.13	549.19
Rubber and miscellaneous plastics products	260.80	288.55	286.48	292.09	289.41	293.46	291.67	295.94	283.88	298.85	295.77	297.04	300.13	306.77	304.92
Leather and leather products	168.09	183.63	181.41	183.39	183.24	186.80	187.03	187.46	172.83	184.27	186.54	187.26	191.52	197.25	188.86
TRANSPORTATION AND PUBLIC UTILITIES	351.25	382.18	383.90	389.87	390.04	388.65	393.96	395.36	388.85	397.10	392.73	393.43	394.60	398.43	400.38
WHOLESALE AND RETAIL TRADE	176.46	190.95	193.85	194.83	194.49	192.32	192.68	194.45	191.89	194.66	194.66	195.91	197.78	199.32	202.12
WHOLESALE TRADE	267.96	292.20	294.10	296.06	296.45	298.38	300.69	302.25	300.13	303.31	303.72	304.45	308.35	308.80	311.50
RETAIL TRADE	147.38	158.03	161.92	162.23	162.17	157.64	158.54	160.89	157.47	159.35	159.64	161.02	163.01	164.65	167.62
FINANCE, INSURANCE, AND REAL ESTATE	209.60	229.05	227.96	232.23	230.04	232.77	236.02	234.21	237.47	239.64	239.22	240.37	245.75	241.51	245.03
SERVICES	190.71	208.97	209.85	210.89	211.25	213.85	216.78	217.12	219.32	220.68	220.03	221.33	222.63	223.01	227.73

¹ Not available.

UNEMPLOYMENT INSURANCE DATA

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

Definitions

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

Under both State and Federal unemployment insurance programs for civilian employees, insured workers must report the completion of at least 1 week of unemployment before they are defined as unem-

ployed. 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.

16. Unemployment insurance and employment service operations

[All items except average benefits amounts are in thousands]

Item	1981							1982					
	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June ^P
All programs:													
Insured unemployment	2,949	3,012	2,874	2,680	2,753	3,228	3,935	4,681	4,723	4,892	4,760	4,388	4,328
State unemployment insurance program: ¹													
Initial claims ²	1,741	2,114	1,610	1,681	1,996	2,286	3,272	3,328	2,272	2,418	2,347	1,988	2,369
Insured unemployment (average weekly volume)	2,596	2,743	2,656	2,488	2,592	3,061	3,778	4,470	4,376	4,282	4,067	3,729	3,707
Rate of insured unemployment	3.0	3.1	3.0	2.9	3.0	3.5	4.3	5.1	5.0	4.9	4.6	4.3	4.3
Weeks of unemployment compensated	9,928	10,486	9,594	9,565	9,424	10,052	14,592	15,962	15,631	18,144	16,156	13,670	14,628
Average weekly benefit amount for total unemployment	\$99.02	\$103.47	\$105.94	\$107.39	\$108.92	\$110.52	\$112.83	\$114.83	\$116.95	\$117.10	\$117.51	\$118.07	\$118.65
Total benefits paid	\$1,012,764	\$1,061,899	\$1,004,864	\$1,001,020	\$997,757	\$1,080,810	\$1,592,546	\$1,764,206	\$1,781,830	\$2,072,642	\$1,848,260	\$1,572,503	\$1,690,109
Unemployment compensation for ex-servicemen: ³													
Initial claims ¹	19	22	19	15	11	9	11	8	8	10	9	8	10
Insured unemployment (average weekly volume)	42	44	44	34	26	22	19	16	13	11	10	9	8
Weeks of unemployment compensated	192	203	190	153	116	91	93	65	49	48	37	31	29
Total benefits paid	\$21,145	\$22,785	\$21,425	\$17,144	\$12,952	\$10,043	\$10,155	\$7,098	\$5,304	\$5,141	\$4,029	\$3,416	\$3,210
Unemployment compensation for Federal civilian employees: ⁴													
Initial claims	13	15	17	18	20	16	17	17	12	13	13	11	14
Insured unemployment (average weekly volume)	25	25	25	29	32	36	39	40	40	38	33	29	28
Weeks of unemployment compensated	105	105	102	100	112	127	174	162	154	172	147	119	122
Total benefits paid	\$10,705	\$10,805	\$9,543	\$10,495	\$11,719	\$13,491	\$18,891	\$18,040	\$17,517	\$19,677	\$16,821	\$13,569	\$13,597
Railroad unemployment insurance:													
Applications	26	41	13	15	21	13	19	22	11	9	5	5	36
Insured unemployment (average weekly volume)	30	28	29	34	40	44	54	75	67	65	57	44	44
Number of payments	86	32	63	74	86	83	117	153	140	154	130	95	93
Average amount of benefit payment	\$201.06	\$199.63	\$202.53	\$207.98	\$197.26	\$207.08	\$212.33	\$213.39	\$214.07	\$215.71	\$209.48	\$200.75	\$199.15
Total benefits paid	\$16,206	\$11,541	\$7,071	\$15,046	\$15,994	\$16,377	\$25,292	\$30,544	\$28,011	\$33,853	\$26,262	\$19,110	\$18,574
Employment service: ⁵													
New applications and renewals	12,868	.....	.....	16,502	.....	.....	4,081	.....	.....	7,439	.....	.....	9,907
Nonfarm placements	2,446	.....	.....	3,509	.....	.....	731	.....	.....	1,232	.....	.....	1,692

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

² Excludes transition claims under State programs.

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

⁴ 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 and the Virgin Islands 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 19.)

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.

17. Consumer Price Index for Urban Wage Earners and Clerical Workers, annual averages and changes, 1967-81

[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
1981	272.3	10.2	267.8	7.7	293.2	11.4	186.6	5.2	281.3	12.3	295.1	10.4	219.0	7.5	233.3	9.2

18. 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)						
	1981	1982						1981	1982					
	June	Jan.	Feb.	Mar.	Apr.	May	June	June	Jan.	Feb.	Mar.	Apr.	May	June
All items	271.3	282.5	283.4	283.1	284.3	287.1	290.6	271.4	282.1	282.9	282.5	283.7	286.5	290.1
Food and beverages	266.5	273.6	275.8	275.6	276.5	278.1	280.2	267.0	273.9	276.0	275.9	276.8	278.4	280.5
Housing	292.2	306.1	307.3	306.7	309.4	313.8	317.5	291.9	305.6	306.7	306.2	309.2	313.7	317.5
Apparel and upkeep	185.8	187.3	188.0	191.1	191.9	191.5	190.8	185.8	186.5	187.3	190.5	191.2	190.6	189.6
Transportation	279.9	289.9	288.0	285.1	282.9	285.6	292.8	281.0	291.6	289.6	286.6	284.3	287.1	294.5
Medical care	291.5	313.4	316.2	318.8	321.7	323.8	326.4	292.9	312.0	314.9	317.4	320.2	322.3	324.8
Entertainment	220.8	229.2	231.2	232.8	233.9	234.4	235.6	218.3	226.1	228.1	229.5	230.5	231.1	232.3
Other goods and services	233.4	248.4	250.3	252.2	253.8	255.0	255.8	231.4	245.0	247.1	249.3	250.9	252.4	253.1
Commodities	253.2	258.8	259.5	258.8	258.9	261.5	265.1	253.8	259.3	259.9	259.1	259.2	261.7	265.4
Commodities less food and beverages	243.1	248.0	248.1	247.1	247.0	249.8	254.0	243.8	248.7	248.6	247.5	247.2	250.1	254.5
Nondurables less food and beverages	263.5	265.6	265.3	263.4	259.7	261.0	266.3	266.3	267.8	267.5	265.3	261.3	262.6	268.2
Durables	226.6	233.4	233.7	233.5	235.8	239.8	243.2	225.2	232.4	232.5	232.4	234.8	238.9	242.3
Services	303.5	323.9	325.3	325.5	328.4	331.8	334.9	303.9	324.3	325.5	325.8	329.1	332.4	335.7
Rent, residential	206.8	217.8	218.6	219.6	220.1	221.8	222.6	206.4	217.4	218.1	219.1	219.6	221.3	222.1
Household services less rent	366.7	392.4	393.7	392.5	397.3	403.0	407.7	307.1	396.5	397.7	396.6	402.3	408.2	413.3
Transportation services	269.6	286.6	287.6	288.8	290.3	291.3	294.7	268.2	285.9	286.7	287.9	289.2	290.0	293.2
Medical care services	314.4	338.4	342.4	345.1	348.0	350.2	353.0	315.8	337.5	340.6	343.0	345.8	348.0	350.7
Other services	236.3	251.7	253.0	254.0	255.3	255.9	257.0	235.6	250.0	251.3	252.4	253.8	254.4	255.5
Special indexes:														
All items less food	269.5	281.4	282.1	281.7	282.9	286.0	289.7	269.7	281.3	281.7	281.3	282.5	285.6	289.4
All items less mortgage interest costs	256.9	266.1	267.1	267.2	267.9	270.3	273.6	257.5	266.4	267.2	267.3	267.9	270.3	273.7
Commodities less food	241.1	245.9	246.0	245.2	245.0	247.8	251.9	241.8	246.6	246.6	245.6	245.3	248.1	252.4
Nondurables less food	258.0	260.2	260.1	258.4	255.0	256.2	261.2	260.7	262.4	262.2	260.2	256.6	257.8	263.0
Nondurables less food and apparel	298.0	301.0	300.5	296.6	291.4	293.4	301.0	300.0	302.6	302.0	298.8	292.3	294.4	302.4
Nondurables	266.2	270.8	271.7	270.7	269.3	270.7	274.4	267.6	271.9	272.8	271.6	270.1	271.5	275.4
Services less rent	321.9	344.2	345.7	345.7	349.1	352.8	356.5	322.6	345.0	346.3	346.4	350.2	353.8	357.7
Services less medical care	300.1	320.0	321.1	321.1	324.0	327.5	330.7	300.4	320.5	321.6	321.6	324.9	328.3	331.7
Domestically produced farm foods	255.9	262.4	265.1	263.8	264.5	267.1	270.3	255.3	261.4	264.0	262.7	263.5	266.0	269.2
Selected beef cuts	271.6	269.6	271.7	272.0	275.1	281.6	289.1	274.3	271.1	273.1	273.3	276.4	283.1	290.6
Energy	414.0	416.4	413.0	406.1	395.7	402.1	418.6	417.3	419.0	415.4	407.9	396.9	403.1	420.4
All items less energy	260.2	272.1	273.4	273.6	275.7	278.3	280.7	259.3	270.9	272.1	272.3	274.5	277.0	279.4
All items less food and energy	255.6	268.5	269.5	269.8	272.2	274.9	277.3	254.5	267.1	268.0	268.3	270.9	273.6	276.0
Commodities less food and energy	217.5	223.7	224.5	225.3	227.2	229.9	232.1	216.6	222.8	223.6	224.5	226.4	229.1	231.3
Energy commodities	453.1	446.4	440.1	424.5	406.6	410.2	430.8	453.7	447.0	440.7	425.0	406.9	410.5	431.6
Services less energy	299.8	320.5	321.9	321.5	324.5	327.2	329.9	300.2	321.0	322.2	321.8	325.2	327.9	330.6
Purchasing power of the consumer dollar, 1967 = \$1	\$0.369	\$0.354	\$0.353	\$0.353	\$0.352	\$0.348	\$0.344	\$0.368	\$0.354	\$0.353	\$0.354	\$0.352	\$0.349	\$0.345

18. 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)						
	1981		1982					1981		1982				
	June	Jan.	Feb.	Mar.	Apr.	May	June	June	Jan.	Feb.	Mar.	Apr.	May	June
FOOD AND BEVERAGES	266.5	273.6	275.8	275.6	276.5	278.1	280.2	267.0	273.9	276.0	275.9	276.8	278.4	280.5
Food	273.6	281.0	283.3	283.0	283.9	285.5	287.8	274.0	281.1	283.4	283.1	284.1	285.7	288.0
Food at home	268.7	275.3	278.0	277.1	277.9	279.8	282.6	268.2	274.4	277.0	276.2	277.0	278.8	281.6
Cereals and bakery products	271.5	279.8	280.9	281.3	281.7	283.3	283.6	270.7	278.6	279.8	280.0	280.4	282.0	282.3
Cereals and cereal products (12/77 = 100)	148.3	153.0	154.0	153.9	153.6	154.5	154.5	150.0	153.9	155.0	154.8	154.6	155.4	155.5
Flour and prepared flour mixes (12/77 = 100)	139.0	139.1	139.1	139.2	139.7	141.8	142.1	141.4	139.6	139.6	139.6	140.1	142.1	142.5
Cereal (12/77 = 100)	152.4	163.1	164.8	165.2	165.4	165.7	166.1	154.0	165.1	166.8	167.2	167.4	167.8	168.2
Rice, pasta, and cornmeal (12/77 = 100)	150.9	151.1	152.4	151.2	149.6	150.2	149.4	152.7	152.4	153.6	152.4	150.8	151.5	150.6
Bakery products (12/77 = 100)	142.1	146.4	146.8	147.1	147.5	148.3	148.6	141.0	145.3	145.7	146.0	146.3	147.2	147.4
White bread	236.0	243.3	243.8	242.3	242.8	243.8	242.4	233.1	239.4	240.0	238.3	238.8	240.0	238.3
Other breads (12/77 = 100)	140.2	143.9	143.7	145.1	145.2	146.3	145.6	142.5	145.7	145.5	147.0	147.1	148.2	147.5
Fresh biscuits, rolls, and muffins (12/77 = 100)	141.7	146.5	146.4	148.4	147.6	149.7	149.9	139.7	142.5	142.8	144.6	143.8	146.0	146.2
Fresh cakes and cupcakes (12/77 = 100)	142.3	147.2	147.0	148.0	148.4	149.0	149.2	141.2	145.8	145.8	146.4	146.8	147.4	147.5
Cookies (12/77 = 100)	143.3	148.1	149.2	149.4	150.2	150.5	150.7	143.3	148.9	150.1	150.2	151.2	151.4	151.5
Crackers, bread, and cracker products (12/77 = 100)	130.7	133.4	135.4	135.3	137.3	139.6	140.9	131.5	134.7	136.8	136.5	138.7	141.0	142.3
Fresh sweetrolls, coffeecake, and donuts (12/77 = 100)	142.9	146.2	147.0	146.3	146.8	147.3	148.9	142.3	148.9	149.3	148.7	149.3	149.9	151.5
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	146.1	151.2	151.5	153.5	153.4	153.6	156.3	140.3	144.7	144.8	146.8	146.5	146.7	149.4
Meats, poultry, fish, and eggs	248.7	253.7	256.8	256.9	258.3	261.0	266.0	248.4	253.3	256.4	256.4	257.8	260.7	265.8
Meats, poultry, and fish	255.0	259.1	261.2	262.1	264.2	268.2	274.3	254.5	258.6	260.7	261.5	263.6	267.7	273.9
Meats	254.2	257.8	260.2	261.2	263.6	269.7	277.2	253.9	257.3	259.7	260.6	262.8	269.0	276.5
Beef and veal	271.1	269.4	271.5	271.7	274.8	281.1	288.2	273.0	270.1	272.2	272.2	275.3	281.9	289.0
Ground beef other than canned	264.6	262.2	265.0	265.8	266.9	269.4	274.6	267.9	263.7	266.3	266.9	267.9	270.7	275.9
Chuck roast	281.0	279.6	285.8	284.3	285.4	287.2	295.4	288.9	288.5	295.0	293.1	294.1	296.2	304.9
Round roast	246.2	241.6	245.3	243.0	244.9	252.4	257.0	249.5	244.7	248.9	245.9	247.9	255.9	260.1
Round steak	255.1	257.5	256.1	258.8	262.8	269.2	278.8	253.6	256.1	254.4	256.4	260.8	267.8	277.2
Sirloin steak	274.6	258.2	257.1	260.6	271.1	282.3	294.1	278.6	258.9	257.8	262.2	272.4	283.8	295.5
Other beef and veal (12/77 = 100)	159.9	160.9	161.4	161.5	163.7	169.0	173.3	159.2	159.3	159.7	159.8	162.1	167.5	171.9
Pork	221.2	234.7	238.9	239.5	241.6	249.9	295.9	221.3	234.4	238.5	238.9	241.0	249.2	258.9
Bacon	216.5	235.5	245.6	249.6	255.9	267.7	280.7	220.5	239.3	249.3	253.3	259.7	271.9	285.3
Chops	209.8	219.2	222.1	216.3	223.4	230.0	241.2	209.8	217.6	220.2	214.7	221.7	228.2	239.6
Ham other than canned (12/77 = 100)	98.0	107.3	107.0	109.2	105.4	111.1	112.6	95.1	104.8	107.2	106.5	102.8	108.3	109.6
Sausage	278.9	297.6	300.0	305.8	305.7	313.3	326.3	278.7	298.8	301.0	306.6	306.3	314.2	327.2
Canned ham	229.8	245.4	246.1	247.6	245.6	249.9	253.2	230.1	249.0	249.9	251.2	248.9	253.2	256.4
Other pork (12/77 = 100)	126.7	129.5	133.8	132.6	135.2	138.9	145.4	127.7	128.8	133.1	131.7	134.5	138.2	144.7
Other meats	255.9	258.1	258.1	262.4	262.8	264.0	268.5	253.1	257.3	257.4	261.7	261.8	263.2	267.8
Frankfurters	250.7	256.7	258.0	260.5	259.5	262.7	268.8	249.8	256.1	257.1	260.0	258.4	261.8	268.3
Bologna, liverwurst, and salami (12/77 = 100)	143.9	145.4	146.1	149.2	150.2	150.7	154.6	141.9	145.4	146.2	149.4	150.3	150.7	154.6
Other luncheats (12/77 = 100)	127.6	132.2	131.7	133.7	133.2	134.3	135.5	126.0	130.2	129.7	131.7	131.2	132.3	133.4
Lamb and organ meats (12/77 = 100)	146.5	138.6	137.7	141.0	142.6	141.2	143.1	147.1	141.4	141.0	144.2	145.6	144.4	146.5
Poultry	196.8	194.2	195.7	194.7	193.3	196.0	197.5	194.4	192.4	193.8	192.8	191.5	194.1	195.8
Fresh whole chicken	193.8	193.1	196.3	195.1	194.1	196.8	199.1	190.3	190.9	194.4	192.8	192.0	194.7	197.0
Fresh and frozen chicken parts (12/77 = 100)	128.3	128.5	128.9	127.5	127.6	128.3	129.3	127.0	126.9	127.1	125.9	125.9	126.5	127.5
Other poultry (12/77 = 100)	128.9	123.2	123.2	123.9	121.3	124.3	124.6	128.2	123.0	122.6	123.3	120.8	123.9	124.3
Fish and seafood	352.1	373.3	373.8	376.3	382.0	366.3	365.2	349.8	372.4	373.2	375.5	381.4	365.0	364.2
Canned fish and seafood (12/77 = 100)	139.3	140.6	140.9	141.0	141.5	139.8	139.9	137.9	140.0	140.4	140.5	140.8	139.2	139.4
Fresh and frozen fish and seafood (12/77 = 100)	131.0	143.2	143.2	144.7	147.9	139.4	138.6	130.4	143.0	143.2	144.6	148.0	138.9	138.3
Eggs	172.1	189.4	205.1	195.2	186.9	172.3	162.5	173.0	190.6	206.1	196.3	187.9	173.4	163.4
Dairy products	243.8	245.8	246.5	246.5	247.5	247.0	246.3	243.9	245.2	245.8	245.9	246.8	246.3	245.7
Fresh milk and cream (12/77 = 100)	134.8	135.1	135.5	135.3	135.9	135.7	135.2	134.5	134.6	134.9	134.8	135.3	135.1	134.7
Fresh whole milk	220.7	221.2	221.5	221.7	222.2	222.0	221.3	220.0	220.2	220.5	220.8	221.3	221.1	220.4
Other fresh milk and cream (12/77 = 100)	134.6	135.1	135.8	135.1	136.2	135.2	135.4	135.1	134.7	135.5	134.6	135.7	135.2	134.9
Processed dairy products (12/77 = 100)	142.0	144.4	144.8	144.9	145.6	145.2	144.9	142.9	144.7	145.1	145.3	145.9	145.5	145.2
Butter	245.1	249.3	248.9	250.1	250.1	251.1	250.9	248.7	252.0	251.4	252.7	252.7	253.7	253.4
Cheese (12/77 = 100)	140.5	142.0	142.8	143.3	143.7	144.0	143.2	140.9	142.3	143.1	143.6	144.0	144.3	143.6
Ice cream and related products (12/77 = 100)	146.4	150.8	150.0	149.5	150.9	148.7	149.6	147.8	149.9	149.1	148.9	150.2	147.9	148.7
Other dairy products (12/77 = 100)	136.3	138.4	140.0	139.5	139.9	139.7	138.7	136.8	139.1	140.8	140.3	140.8	140.4	139.4
Fruits and vegetables	278.1	294.7	301.5	293.1	294.0	297.9	305.6	275.3	291.3	297.4	289.1	290.3	293.6	301.0
Fresh fruits and vegetables	285.2	308.0	319.6	302.1	304.1	311.7	325.9	281.0	303.1	313.4	296.1	298.9	305.1	318.6
Fresh fruits	278.9	276.7	291.2	297.8	306.7	318.8	340.8	272.1	287.0	280.1	287.3	295.5	306.9	327.0
Apples	239.9	273.0	279.5	288.7	287.5	299.8	321.4	241.0	272.6	279.9	288.5	287.8	300.1	321.9
Bananas	260.5	253.5	251.0	263.0	268.5	261.6	267.9	259.0	251.1	247.9	261.1	266.1	259.3	265.5
Oranges	287.1	283.1	313.1	316.3	330.8	362.1	406.8	274.0	255.1	281.1	285.9	300.2	328.3	367.5
Other fresh fruits (12/77 = 100)	154.4	145.9	154.5	157.2	163.4	168.2	177.1	149.9	141.0	149.0	151.8	157.6	162.4	170.3
Fresh vegetables	291.1	337.3	346.2	306.1	301.8	305.1	311.9	289.0	335.8	343.5	304.2	302.0	303.7	311.1
Potatoes	414.3	288.8	297.4	301.0	306.1	320.3	344.9	402.7	282.7	291.5	294.8	300.8	313.6	339.7
Lettuce	238.7	514.4	408.9	270.9	355.2	291.6	269.1	237.1	515.8	408.0	271.3	358.6	293.5	270.0
Tomatoes	205.2	245.6	288.5	257.1	220.5	226.5	275.6	200.8	248.8	293.2	261.8	224.9	230.6	279.9
Other fresh vegetables (12/77 = 100)	151.8													

18. 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)							
	1981	1982					1981	1982						
	June	Jan.	Feb.	Mar.	Apr.	May	June	June	Jan.	Feb.	Mar.	Apr.	May	June
FOOD AND BEVERAGES—Continued														
Food—Continued														
Food at home—Continued														
Fruits and vegetables—Continued														
Cut corn and canned beans except lima (12/77=100)	134.6	139.9	140.7	141.2	140.5	140.7	141.1	133.6	137.5	138.3	138.8	137.9	138.5	138.8
Other canned and dried vegetables (12/77=100)	131.4	135.0	134.1	134.8	135.0	134.6	135.2	129.7	133.5	132.6	133.3	133.5	133.2	133.8
Other foods at home	323.6	328.7	330.7	331.7	331.6	332.6	332.6	324.5	329.6	331.5	332.6	332.6	333.5	333.5
Sugar and sweets	361.3	361.6	364.2	365.5	365.3	365.7	366.8	363.0	361.6	364.1	365.4	365.2	365.6	366.9
Candy and chewing gum (12/77=100)	145.2	150.1	150.0	150.3	150.9	150.0	150.4	146.5	150.0	149.8	150.1	150.8	149.9	150.5
Sugar and artificial sweeteners (12/77=100)	168.2	155.6	160.0	161.0	159.9	160.5	161.4	169.3	157.0	161.3	162.4	161.1	161.8	162.8
Other sweets (12/77=100)	142.6	147.1	146.9	147.4	147.2	148.9	148.9	140.8	145.2	145.1	145.5	145.3	147.0	146.9
Fats and oils (12/77=100)	269.6	261.6	260.5	259.6	260.4	260.6	260.7	269.5	261.5	260.6	259.7	260.4	260.6	260.7
Margarine	256.1	257.8	256.7	256.7	259.6	259.7	261.2	256.0	257.2	256.1	256.1	259.1	259.3	260.8
Nondairy substitutes and peanut butter (12/77=100)	181.8	157.7	157.8	156.1	157.3	156.0	156.5	180.5	156.0	156.3	154.4	155.6	154.2	154.9
Other fats, oils, and salad dressings (12/77=100)	129.6	130.5	129.8	129.5	129.0	129.6	129.1	129.6	131.0	130.2	130.0	129.5	130.2	129.7
Nonalcoholic beverages	412.8	418.7	423.4	424.8	424.1	425.6	424.8	414.6	420.5	425.0	426.6	426.0	427.3	426.6
Cola drinks, excluding diet cola	297.0	302.4	304.6	306.6	304.9	306.1	305.9	294.1	300.0	302.0	303.8	302.4	303.6	303.3
Carbonated drinks, including diet cola (12/77=100)	140.8	141.9	143.8	143.4	143.4	144.3	143.1	139.3	139.7	141.7	141.4	141.5	142.3	141.2
Roasted coffee	353.1	353.3	364.4	366.6	369.6	369.3	365.1	348.5	348.8	359.9	362.2	365.0	364.3	360.1
Freeze dried and instant coffee	335.2	336.9	342.8	343.6	343.4	344.3	344.3	337.1	336.5	345.2	343.4	343.0	343.9	343.8
Other noncarbonated drinks (12/77=100)	134.5	138.0	138.4	138.9	138.7	138.9	140.0	134.4	138.2	138.6	139.1	138.9	139.1	140.2
Other prepared foods	254.4	264.6	265.3	266.5	266.6	267.5	267.8	255.8	266.3	266.9	268.1	268.3	269.3	268.5
Canned and packaged soup (12/77=100)	132.6	134.3	135.9	135.6	135.7	135.7	136.3	133.5	136.4	137.9	137.8	137.8	137.7	138.3
Frozen prepared foods (12/77=100)	142.2	147.8	146.2	147.0	147.2	147.8	147.3	140.8	147.4	145.6	146.5	146.7	147.3	146.8
Snacks (12/77=100)	147.2	152.6	153.4	153.4	152.9	153.5	153.2	149.1	154.6	155.2	155.4	155.0	155.6	155.2
Seasonings, olives, pickles, and relish (12/77=100)	141.1	149.7	151.3	153.2	153.6	152.8	153.3	140.3	148.6	150.3	152.2	152.7	151.9	152.4
Other condiments (12/77=100)	140.8	146.4	146.9	148.2	148.7	150.2	150.6	143.2	148.0	148.4	149.9	150.4	151.9	152.4
Miscellaneous prepared foods (12/77=100)	139.3	146.9	147.0	147.7	147.6	148.5	148.3	139.9	147.0	147.1	147.9	147.7	148.7	148.5
Other canned and packaged prepared foods (12/77=100)	137.7	142.5	143.0	143.2	143.3	143.5	144.5	138.5	143.9	144.5	144.5	144.6	144.9	145.8
Food away from home	290.6	299.8	301.2	302.4	303.6	304.8	305.9	293.5	302.8	304.2	305.4	306.7	307.8	309.0
Lunch (12/77=100)	141.5	146.1	146.6	147.0	147.5	148.2	148.9	142.8	147.7	148.2	148.6	149.1	149.8	150.5
Dinner (12/77=100)	140.7	144.8	145.2	145.7	146.3	147.1	147.4	142.6	146.4	146.8	147.3	147.9	148.8	149.1
Other meals and snacks (12/77=100)	140.3	145.4	146.9	147.9	148.6	148.5	149.2	141.3	146.2	147.6	148.7	149.3	149.2	149.9
Alcoholic beverages	199.8	204.0	205.6	206.6	207.4	208.0	208.4	202.1	206.0	207.6	208.8	209.5	210.1	210.4
Alcoholic beverages at home (12/77=100)	129.7	132.2	133.3	134.0	134.6	135.0	135.0	131.5	133.4	134.6	135.4	136.0	136.2	136.3
Beer and ale	202.0	205.0	207.4	209.2	210.5	210.3	210.6	202.4	204.3	206.5	208.3	209.6	209.4	209.6
Whiskey	143.0	145.9	146.8	147.0	147.2	148.2	148.3	144.0	146.8	147.7	147.8	148.0	149.0	149.1
Wine	224.6	232.2	234.2	235.3	236.4	236.9	235.3	233.4	239.8	241.6	243.3	244.4	244.9	242.7
Other alcoholic beverages (12/77=100)	116.1	117.5	117.8	118.1	118.2	119.0	119.7	115.7	117.5	117.8	118.0	118.0	118.9	119.6
Alcoholic beverages away from home (12/77=100)	133.1	137.0	137.6	138.2	138.4	139.1	140.3	133.4	138.6	139.1	139.7	139.9	140.6	141.6
HOUSING	292.2	306.1	307.3	306.7	309.4	313.8	317.5	291.9	305.6	306.7	306.2	309.2	313.7	317.5
Shelter	312.6	328.3	329.5	327.6	331.4	336.7	340.9	313.7	329.4	330.3	328.5	332.8	338.3	342.6
Rent, residential	206.8	217.8	218.6	219.6	220.1	221.8	222.6	206.4	217.4	218.1	219.1	219.6	221.3	222.1
Other rental costs	289.5	313.6	316.9	320.1	323.7	323.6	327.3	289.7	312.3	315.6	318.9	322.8	322.6	326.3
Lodging while out of town	311.8	331.1	335.9	340.9	346.6	346.6	352.2	310.6	328.4	333.0	337.9	343.9	344.0	349.4
Tenants' insurance (12/77=100)	133.1	141.8	143.5	144.1	144.9	144.4	145.5	133.4	142.0	143.6	144.3	144.7	143.8	144.8
Homeownership	350.4	367.5	368.7	365.7	370.6	377.4	382.8	352.7	369.9	370.8	367.9	373.6	380.5	386.0
Home purchase	266.6	269.3	270.4	269.2	272.3	279.3	285.6	266.2	267.4	268.3	267.1	270.5	278.1	284.4
Financing, taxes, and insurance	467.2	506.0	507.2	500.9	508.4	516.2	521.8	473.8	512.2	513.2	507.0	516.0	523.8	529.7
Property insurance	386.6	393.0	393.7	394.1	393.6	396.7	400.6	388.1	395.6	396.0	396.5	396.0	399.2	402.7
Property taxes	200.3	212.9	215.1	216.6	217.2	218.3	218.8	202.2	214.5	217.2	218.5	219.1	220.2	220.7
Contracted mortgage interest cost	610.4	665.2	666.1	655.5	667.1	678.5	686.7	612.9	666.3	666.6	656.4	670.2	681.4	690.0
Mortgage interest rates	226.4	244.4	243.9	240.7	242.1	240.2	238.3	227.2	245.7	245.4	242.3	244.4	242.1	240.2
Maintenance and repairs	315.5	326.7	328.2	327.2	331.6	334.5	336.1	308.2	323.3	324.6	323.7	328.3	330.9	332.4
Maintenance and repair services	344.4	358.2	359.4	357.8	363.6	367.0	369.1	338.7	359.2	360.1	358.6	365.0	368.0	370.0
Maintenance and repair commodities	247.6	252.5	254.6	255.0	256.2	257.8	258.3	241.5	246.4	248.2	248.6	249.7	251.3	252.1
Paint and wallpaper, supplies, tools, and equipment (12/77=100)	145.3	149.4	150.9	151.8	153.1	154.2	153.3	138.4	142.3	143.7	144.7	145.8	147.0	146.0
Lumber, awnings, glass, and masonry (12/77=100)	124.7	124.6	124.6	123.9	124.5	124.5	124.7	122.7	121.9	121.7	121.2	121.9	121.9	122.1
Plumbing, electrical, heating, and cooling supplies (12/77=100)	131.2	131.9	133.8	133.4	133.4	135.1	136.2	128.5	131.8	133.4	133.1	133.1	134.9	136.0
Miscellaneous supplies and equipment (12/77=100)	128.5	133.6	134.8	135.1	135.6	136.3	138.4	131.7	135.7	136.9	137.1	137.4	138.2	140.6
Fuel and other utilities	320.2	336.2	337.1	339.3	339.2	345.4	352.2	321.2	337.0	337.9	340.2	340.3	346.5	353.6
Fuels	411.7	426.9	427.6	430.5	428.2	438.0	448.4	411.2	426.2	426.8	429.9	427.8	437.4	448.3
Fuel oil, coal, and bottled gas	682.0	686.0	683.1	664.0	641.3	644.6	656.6	685.1	688.9	686.0	666.7	644.0	647.7	659.7
Fuel oil	715.7	716.8	713.8	692.3	666.2	670.6	684.8	718.4	719.3	716.3	694.4	668.4	673.3	687.5
Other fuels (6/78=100)	164.3	170.9	170.0	168.0	166.4	165.7	165.6	165.5	172.1	171.4	169.5	167.9	167.1	166.9
Gas (piped) and electricity	350.2	367.4	368.7	375.9	377.8	388.6	398.5	349.0	366.0	367.3	374.8	376.8	387.4	397.8
Electricity	296.7	306.6	306.8	313.3	312.8	314.9	327.5	296.6	305.3	305.5	312.3	311.8	314.4	327.7
Utility (piped) gas	416.9	447.2	450.8	458.6	465.3	493.4	496.0	413.2	445.2	448.7	456.6	463.6	489.7	492.7

18. 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)								
	1981	1982						1981	1982							
		June	Jan.	Feb.	Mar.	Apr.	May		June	June	Jan.	Feb.	Mar.	Apr.	May	June
HOUSING—Continued																
Fuel and other utilities—Continued																
Other utilities and public services	177.1	192.7	193.9	195.0	197.7	198.9	200.4	177.3	193.1	194.3	195.4	198.2	199.5	201.1		
Telephone services	143.5	157.2	157.9	158.5	160.8	161.6	163.2	143.6	157.3	158.0	158.6	161.0	161.9	163.5		
Local charges (12/77 = 100)	114.9	124.0	125.3	125.6	127.9	128.9	131.2	115.1	124.2	125.4	125.7	128.1	129.2	131.6		
Interstate toll calls (12/77 = 100)	101.8	116.8	116.6	117.7	119.9	120.0	119.6	101.9	116.9	117.8	117.8	120.2	120.4	120.1		
Intrastate toll calls (12/77 = 100)	101.5	109.2	109.1	109.0	108.9	109.3	109.8	101.3	109.0	108.8	108.7	108.7	109.0	109.4		
Water and sewerage maintenance	291.2	309.8	313.3	316.9	320.7	323.5	324.9	292.5	312.2	315.7	319.7	323.6	326.7	328.0		
Household furnishings and operations	221.1	228.4	230.2	231.6	232.6	233.4	233.7	217.8	224.9	226.7	228.0	229.1	230.0	230.4		
Household furnishings	185.2	189.8	191.4	192.7	193.8	194.7	194.7	182.8	187.7	189.3	190.4	191.7	192.5	192.6		
Textile household furnishings	202.5	210.1	216.0	217.7	218.7	220.9	220.2	204.4	212.5	218.5	219.9	221.4	223.9	223.3		
Household linens (12/77 = 100)	125.1	127.3	131.0	134.7	135.8	135.4	134.6	125.7	128.6	132.1	135.6	137.0	136.8	135.9		
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100)	127.4	134.8	138.5	136.7	136.9	140.1	140.1	129.5	137.0	141.0	138.7	139.1	142.8	143.0		
Furniture and bedding	204.6	209.5	209.4	212.1	214.7	215.1	214.4	200.1	205.9	205.5	208.2	211.0	211.3	210.9		
Bedroom furniture (12/77 = 100)	134.6	139.7	140.5	140.8	142.3	144.5	143.0	129.2	136.5	137.1	137.2	138.9	140.7	139.7		
Sofas (12/77 = 100)	116.2	117.3	116.4	118.0	119.3	119.1	117.5	116.0	117.6	116.5	118.2	119.6	119.4	118.2		
Living room chairs and tables (12/77 = 100)	116.9	118.9	118.6	121.6	123.2	122.8	123.2	118.2	119.0	118.8	121.8	123.3	122.9	123.3		
Other furniture (12/77 = 100)	135.4	138.5	138.1	140.5	142.3	141.6	142.3	130.5	133.9	133.4	135.8	137.9	137.1	137.7		
Appliances including TV and sound equipment	146.3	148.8	149.9	150.1	150.6	151.4	151.4	145.6	148.5	149.6	149.7	150.3	151.1	151.2		
Television and sound equipment (12/77 = 100)	108.2	108.8	109.2	109.1	108.7	108.8	108.6	107.3	107.9	108.4	108.2	107.7	107.9	107.7		
Television	105.3	104.4	104.5	104.7	104.2	104.3	104.4	103.1	103.3	103.5	103.0	103.0	103.0	103.1		
Sound equipment (12/77 = 100)	111.9	113.8	114.5	114.0	113.7	113.9	113.5	110.9	113.0	113.8	113.2	112.8	113.0	112.7		
Household appliances	173.2	178.0	179.7	180.3	182.1	183.6	183.8	172.6	178.1	179.9	180.4	182.3	183.8	184.2		
Refrigerators and home freezers	172.4	180.8	182.6	183.7	184.8	186.2	187.7	177.1	186.1	187.9	189.3	190.6	191.8	193.2		
Laundry equipment (12/77 = 100)	128.0	132.2	133.5	133.3	136.4	136.6	136.7	127.1	132.4	133.8	133.5	136.6	136.8	136.9		
Other household appliances (12/77 = 100)	118.9	120.6	121.6	122.2	122.9	124.3	123.9	116.6	118.5	119.7	120.0	120.7	122.3	122.6		
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100)	118.4	119.4	121.0	121.9	122.3	123.7	123.1	116.5	117.4	118.9	119.3	119.7	121.4	121.6		
Office machines, small electric appliances, and air conditioners (12/77 = 100)	119.4	121.9	122.4	122.5	123.5	124.9	124.8	116.7	119.7	120.5	120.7	121.8	123.3	123.0		
Other household equipment (12/77 = 100)	131.0	134.9	136.7	137.3	137.8	138.3	139.0	129.3	132.9	134.7	135.3	135.6	136.0	136.9		
Floor and window coverings, infants', laundry, cleaning, and outdoor equipment (12/77 = 100)	132.1	136.3	139.1	140.9	140.3	141.4	142.3	125.3	128.6	131.0	133.3	132.9	133.9	134.9		
Clocks, lamps, and decor items (12/77 = 100)	124.6	128.6	129.8	129.0	130.2	131.4	132.2	121.9	124.8	126.0	125.4	126.5	127.4	128.2		
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100)	139.5	142.3	143.3	143.1	145.0	144.4	145.6	136.0	138.2	139.5	139.0	140.6	139.8	141.4		
Lawn equipment, power tools, and other hardware (12/77 = 100)	122.6	127.8	130.3	132.1	130.8	132.1	131.9	127.1	133.2	135.5	137.3	136.0	137.4	137.1		
Housekeeping supplies	269.8	279.1	282.4	284.2	284.9	285.5	286.5	266.9	275.7	278.8	280.4	281.2	281.8	283.1		
Soaps and detergents	266.0	275.5	278.0	279.5	280.0	278.8	280.8	263.6	272.0	274.4	275.7	276.3	275.2	277.0		
Other laundry and cleaning products (12/77 = 100)	133.4	139.6	141.0	142.1	142.7	143.3	143.8	132.3	138.4	139.8	140.9	141.6	142.3	142.7		
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100)	137.6	145.1	145.7	145.7	146.4	146.0	146.5	138.2	145.1	145.6	145.4	146.2	145.6	146.1		
Stationery, stationery supplies, and gift wrap (12/77 = 100)	125.8	128.8	130.4	130.7	131.4	132.0	132.5	127.2	131.7	133.4	133.8	134.6	135.3	136.0		
Miscellaneous household products (12/77 = 100)	139.5	146.2	146.9	147.5	147.5	149.3	150.2	136.1	141.2	141.8	142.4	142.4	144.1	144.9		
Lawn and garden supplies (12/77 = 100)	138.4	137.1	141.8	144.7	144.7	144.8	144.0	131.3	129.2	134.1	136.7	136.8	136.6	136.7		
Housekeeping services	292.9	307.4	308.1	309.9	310.4	311.3	311.7	291.7	305.9	306.8	308.2	309.2	310.2	310.9		
Postage	308.0	337.5	337.5	337.5	337.5	337.5	337.5	308.1	337.5	337.5	337.5	337.5	337.5	337.5		
Moving, storage, freight, household laundry, and drycleaning services (12/77 = 100)	141.9	148.4	149.4	150.8	152.1	153.1	154.2	141.8	148.0	149.1	150.6	152.2	153.3	154.5		
Appliance and furniture repair (12/77 = 100)	126.3	133.6	134.2	135.0	135.6	136.6	137.0	125.4	132.2	132.8	133.5	134.1	135.1	135.5		
APPAREL AND UPKEEP	185.8	187.3	188.0	191.1	191.9	191.5	190.8	185.8	186.5	187.3	190.5	191.2	190.6	189.6		
Apparel commodities	176.4	177.0	177.6	180.8	181.4	180.9	180.0	177.0	176.7	177.4	180.8	181.3	180.5	179.4		
Apparel commodities less footwear	172.5	172.8	173.4	176.8	177.4	176.7	175.6	173.0	172.2	173.0	176.6	177.1	176.0	174.7		
Men's and boys'	176.6	178.7	179.3	181.7	183.1	183.8	183.1	177.2	178.6	179.4	181.6	182.9	183.7	183.2		
Men's (12/77 = 100)	111.0	112.9	113.0	114.5	115.5	115.9	115.4	111.6	113.3	113.5	114.7	115.7	116.2	115.8		
Suits, sport coats, and jackets (12/77 = 100)	104.3	104.3	104.8	107.2	107.6	108.1	107.3	98.4	97.8	98.2	100.4	101.1	101.4	100.6		
Coats and jackets (12/77 = 100)	98.1	96.4	95.8	98.1	99.1	99.9	99.5	101.2	97.6	97.2	99.7	100.7	101.5	101.1		
Furnishings and special clothing (12/77 = 100)	129.7	133.6	134.7	136.8	138.2	138.7	138.0	124.1	129.8	131.1	133.1	134.5	135.3	134.7		
Shirts (12/77 = 100)	117.9	120.7	119.3	119.9	121.3	121.2	121.5	120.4	123.3	121.8	122.3	123.4	123.1	123.8		
Dungarees, jeans, and trousers (12/77 = 100)	105.0	108.2	108.6	108.6	109.7	110.3	109.7	111.8	113.6	114.1	114.2	115.1	115.6	115.2		
Boys' (12/77 = 100)	115.4	114.6	116.0	117.8	118.3	118.8	118.5	114.3	112.9	114.3	116.1	116.5	117.1	116.9		
Coats, jackets, sweaters, and shirts (12/77 = 100)	108.7	104.7	105.9	109.4	111.2	111.5	110.7	109.8	105.3	106.3	109.7	111.5	112.0	111.5		
Furnishings (12/77 = 100)	123.9	127.3	128.2	128.7	130.3	131.2	131.9	119.5	123.3	124.2	124.7	126.0	127.2	128.0		
Suits, trousers, sport coats, and jackets (12/77 = 100)	117.3	117.2	119.1	120.1	119.0	119.6	119.4	115.9	114.7	116.7	117.8	116.8	117.3	117.1		
Women's and girls'	155.4	154.3	154.7	160.3	160.9	159.1	157.3	158.1	156.4	157.1	163.0	163.4	160.8	158.4		
Women's (12/77 = 100)	102.7	102.3	102.9	106.8	107.1	105.7	104.4	104.9	103.9	104.8	109.0	109.1	107.1	105.4		
Coats and jackets	149.5	158.4	156.4	162.0	163.4	158.3	156.4	148.9	161.6	163.1	173.1	172.9	165.7	162.9		
Dresses	163.7	153.1	152.8	163.1	166.6	162.0	160.1	156.6	140.7	140.9	148.1	151.1	147.1	145.4		
Separates and sportswear (12/77 = 100)	98.0	96.7	96.3	100.3	100.1	101.2	100.2	101.0	97.3	96.8	101.2	101.0	101.9	101.0		
Underwear, nightwear, and hosiery (12/77 = 100)	119.8	124.0	126.2	127.1	127.4	128.1	127.9	120.0	123.7	126.0	126.9	127.3	127.9	127.6		
Suits (12/77 = 100)	86.3	84.2	87.0	92.7	89.4	83.4	78.6	103.6	104.0	105.6	114.1	111.0	100.6	92.7		
Girls' (12/77 = 100)	106.4	104.4	102.7	105.6	106.7	106.3	105.8	106.2	104.2	103.1	106.0	106.9	106.2	105.2		
Coats, jackets, dresses, and suits (12/77 = 100)	100.4	93.4	92.6	98.2	98.8	96.9	95.1	98.1	91.2	91.5	97.2	97.6	95.0	92.4		
Separates and sportswear (12/77 = 100)	105.9	106.3	103.4	104.6	105.4	105.9	106.0	108.1	108.2	106.0	106.9	107.6	108.0	107.7		
Underwear, nightwear, hosiery, and accessories (12/77 = 100)	117.2	119.2	118.0	119.6	122.0	122.4	122.9	116.2	118.2	117.0	118.7	121.0	121.5	121.9		

18. 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)						
	1981		1982					1981		1982				
	June	Jan.	Feb.	Mar.	Apr.	May	June	June	Jan.	Feb.	Mar.	Apr.	May	June
APPAREL AND UPKEEP—Continued														
Apparel commodities—Continued														
Apparel commodities less footwear—Continued														
Infants' and toddlers'	260.0	259.6	262.2	264.7	267.0	269.0	268.7	273.0	270.1	271.4	275.4	278.2	279.3	278.2
Other apparel commodities	212.2	212.9	214.3	212.7	210.8	209.7	209.9	204.8	201.4	202.8	201.6	199.5	198.8	198.9
Sewing materials and notions (12/77 = 100)	114.5	116.2	117.6	118.1	118.5	119.3	119.2	113.2	114.3	115.9	116.5	116.9	117.7	117.6
Jewelry and luggage (12/77 = 100)	146.8	146.7	147.4	145.7	143.8	142.5	142.8	141.2	137.5	138.1	136.7	134.5	133.5	133.6
Footwear	200.4	202.8	202.8	204.9	205.6	206.5	206.6	200.6	203.1	203.3	205.2	206.1	206.9	206.7
Men's (12/77 = 100)	127.7	130.3	130.7	132.5	132.3	132.4	132.1	129.5	132.2	132.6	134.5	134.4	134.5	134.1
Boys' and girls' (12/77 = 100)	129.1	130.1	129.5	129.2	130.4	131.5	132.1	128.6	132.5	132.3	132.1	133.6	134.6	134.8
Women's (12/77 = 100)	121.6	122.6	122.7	124.7	125.1	125.8	125.8	120.2	118.9	119.0	120.8	121.1	121.6	121.6
Apparel services	257.8	267.6	269.4	271.3	273.4	274.7	275.3	255.7	265.5	267.2	269.0	271.0	272.3	273.0
Laundry and drycleaning other than coin operated (12/77 = 100)	153.2	160.0	161.4	162.4	163.5	164.4	164.8	152.5	158.5	159.9	160.9	162.0	162.8	163.3
Other apparel services (12/77 = 100)	136.0	139.4	139.8	141.1	142.5	142.9	143.1	135.0	139.9	140.3	141.5	142.7	143.1	143.4
TRANSPORTATION														
Private	277.9	286.6	284.5	281.3	278.8	281.5	288.9	279.7	289.0	286.9	283.7	281.2	284.0	291.6
New cars	192.2	197.4	195.5	194.4	196.0	197.5	198.1	192.5	197.3	195.3	194.2	195.9	197.3	197.9
Used cars	252.9	280.5	279.7	280.9	285.1	291.4	298.2	252.9	280.5	279.7	280.9	285.2	291.4	298.2
Gasoline	414.4	406.0	399.1	383.9	366.7	370.4	392.3	415.6	407.5	400.6	385.4	367.9	371.7	393.8
Automobile maintenance and repair	291.9	305.5	307.7	310.2	311.9	313.6	316.0	292.6	306.2	308.4	311.1	312.8	314.4	316.8
Body work (12/77 = 100)	142.3	151.5	153.7	154.5	155.0	155.7	156.3	142.2	149.8	152.1	152.7	153.3	154.0	154.7
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100)	138.9	145.7	146.5	148.7	149.5	150.8	151.6	141.7	149.5	150.2	152.8	153.7	154.9	155.7
Maintenance and servicing (12/77 = 100)	137.1	142.0	142.7	143.9	144.5	145.0	146.8	136.9	141.5	142.3	143.4	144.0	144.4	146.2
Power plant repair (12/77 = 100)	139.2	146.2	147.3	148.0	149.1	150.1	150.8	138.3	145.7	146.8	147.5	148.6	149.6	150.3
Other private transportation	241.0	253.3	253.4	254.5	255.1	255.7	258.7	243.9	256.9	256.8	257.8	258.2	258.8	261.8
Other private transportation commodities	208.5	215.5	214.8	215.6	214.9	216.9	217.5	211.1	218.0	217.3	218.2	217.3	219.4	220.0
Motor oil, coolant, and other products (12/77 = 100)	144.5	148.2	149.3	150.2	150.7	149.9	150.7	142.7	146.9	147.8	148.7	149.2	148.4	149.0
Automobile parts and equipment (12/77 = 100)	133.4	138.1	137.4	137.9	137.2	138.8	139.2	135.5	140.0	139.4	139.9	139.2	140.9	141.2
Tires	186.1	192.8	191.3	191.7	190.1	192.3	192.8	189.9	196.5	195.1	195.5	193.7	196.0	196.4
Other parts and equipment (12/77 = 100)	130.2	134.3	134.6	135.7	136.2	138.0	138.3	130.7	134.5	134.9	135.9	136.6	138.4	138.6
Other private transportation services	252.0	265.8	266.1	267.2	268.2	268.4	272.2	255.0	269.7	269.8	270.8	271.6	271.8	275.5
Automobile insurance	257.4	266.8	268.1	269.8	270.4	271.6	274.0	256.9	266.6	268.0	269.6	270.2	271.3	273.5
Automobile finance charges (12/77 = 100)	178.5	190.9	188.9	188.9	187.2	186.3	190.3	177.2	190.3	188.3	188.2	186.7	185.9	191.2
Automobile rental, registration, and other fees (12/77 = 100)	117.8	127.6	128.9	129.7	133.3	133.3	133.3	118.2	128.4	129.5	130.1	133.7	133.7	133.8
State registration	148.0	166.9	167.1	168.5	174.2	174.2	174.3	148.1	166.2	166.5	167.7	173.8	173.8	173.9
Drivers' licenses (12/77 = 100)	105.8	117.3	121.7	122.9	123.0	127.7	127.7	105.6	117.1	121.7	123.0	123.0	127.9	127.9
Vehicle inspection (12/77 = 100)	125.7	129.2	129.3	129.3	129.0	126.7	126.5	130.5	130.6	130.6	130.4	128.3	128.3	128.3
Other vehicle-related fees (12/77 = 100)	136.3	142.5	144.8	145.3	149.5	149.2	149.3	142.6	150.4	152.4	152.5	156.4	156.2	156.3
Public	303.9	334.9	336.8	336.7	339.3	342.1	345.6	293.6	329.4	331.0	331.0	333.3	335.1	337.9
Airline fare	360.7	375.5	379.3	379.0	382.7	388.9	396.0	359.3	372.7	376.3	376.3	379.8	385.2	392.4
Intercity bus fare	337.6	367.3	365.7	365.6	367.0	366.0	363.7	366.8	368.9	367.4	367.0	368.7	367.5	365.4
Intracity mass transit	253.5	305.9	306.7	306.6	308.1	308.3	309.2	251.5	305.1	305.8	305.7	307.2	307.1	307.9
Taxi fare	281.7	296.3	296.7	297.2	297.6	297.6	298.0	289.2	305.6	306.1	306.6	307.3	307.2	307.6
Intercity train fare	304.1	318.1	314.0	314.1	332.1	337.9	338.2	304.6	317.9	314.5	314.5	332.1	337.9	338.2
MEDICAL CARE	291.5	313.4	316.2	318.8	321.7	323.8	326.4	292.9	312.0	314.9	317.4	320.2	322.3	324.8
Medical care commodities	186.3	195.9	197.7	200.0	202.4	204.1	205.6	187.3	196.4	198.3	200.6	203.0	204.8	206.3
Prescription drugs	172.3	181.9	183.7	186.1	188.8	190.4	191.8	173.5	182.8	184.7	187.0	189.7	191.4	192.7
Anti-infective drugs (12/77 = 100)	132.2	138.2	138.4	139.3	140.9	142.5	143.3	134.3	140.1	140.4	141.1	142.5	144.1	145.1
Tranquilizers and sedatives (12/77 = 100)	137.3	145.4	146.8	146.6	152.0	153.8	154.9	136.5	144.9	146.5	148.3	151.8	153.8	154.7
Circulatories and diuretics (12/77 = 100)	125.5	132.2	134.0	135.7	136.7	137.0	138.4	126.8	132.1	134.0	135.6	136.6	136.8	138.2
Hormones, diabetic drugs, biologicals, and prescription medical supplies (12/77 = 100)	157.2	165.6	168.4	170.8	173.3	175.4	177.2	158.1	166.9	169.7	172.0	174.6	176.9	178.6
Pain and symptom control drugs (12/77 = 100)	137.7	147.3	148.8	150.8	153.1	153.7	154.6	138.9	148.7	150.3	152.3	154.6	155.2	156.0
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100)	131.1	138.8	139.9	142.7	144.7	145.9	146.3	132.0	138.8	139.9	142.7	144.8	146.0	146.4
Nonprescription drugs and medical supplies (12/77 = 100)	133.5	139.9	141.1	142.5	143.9	145.1	146.3	134.4	140.4	141.6	143.2	144.6	145.9	147.1
Eyeglasses (12/77 = 100)	125.3	128.3	128.9	129.5	130.1	130.9	131.6	124.7	127.1	127.6	128.1	128.7	129.7	130.4
Internal and respiratory over-the-counter drugs	211.5	222.8	225.1	228.1	231.1	233.4	235.2	212.6	223.9	226.4	229.6	232.5	235.0	236.8
Nonprescription medical equipment and supplies (12/77 = 100)	128.6	135.9	137.1	138.1	138.9	139.5	141.1	130.7	136.6	137.7	138.8	139.7	140.4	142.0
Medical care services	314.4	339.4	342.4	345.1	348.0	350.2	353.0	315.8	337.5	340.6	343.0	345.8	348.0	350.7
Professional services	275.8	292.0	294.2	295.8	297.8	299.2	301.2	279.4	292.2	294.3	295.9	297.9	299.3	301.3
Physicians' services	297.5	315.5	318.8	320.3	322.2	324.0	326.4	302.4	318.6	321.7	323.2	325.2	327.0	329.4
Dental services	260.2	276.8	276.8	278.6	281.1	282.1	283.9	264.0	274.1	279.2	276.6	279.2	280.3	282.1
Other professional services (12/77 = 100)	134.2	140.3	141.5	142.4	142.5	143.4	143.8	132.6	137.2	138.5	139.4	139.4	140.2	140.7
Other medical care services	361.1	396.8	400.8	404.7	408.7	411.9	415.7	360.3	393.8	398.0	401.6	405.4	408.5	412.0
Hospital and other medical services (12/77 = 100)	149.6	165.6	167.1	168.5	169.8	170.6	171.6	148.6	164.0	165.7	166.9	168.3	169.1	170.1
Hospital room	470.4	529.4	533.8	538.5	542.2	543.8	546.8	467.1	522.0	527.0	531.0	535.2	536.7	539.4
Other hospital and medical care services (12/77 = 100)	148.7	162.2	163.8	165.2	166.4	167.6	168.5	147.6	161.2	163.0	164.2	165.5	166.6	167.5

18. 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)						
	1981	1982						1981	1982					
	June	Jan.	Feb.	Mar.	Apr.	May.	June	June	Jan.	Feb.	Mar.	Apr.	May	June
ENTERTAINMENT	220.8	229.2	231.2	232.8	233.9	234.4	235.6	218.3	226.1	228.1	229.5	230.5	231.1	232.3
Entertainment commodities	225.4	232.0	234.3	236.6	238.0	238.8	239.6	220.8	226.7	228.9	230.8	232.0	232.8	233.8
Reading materials (12/77 = 100)	136.2	142.9	144.1	146.1	146.8	148.5	149.4	136.1	142.1	143.3	145.3	146.1	147.7	148.6
Newspapers	264.9	270.5	273.1	276.4	280.1	281.6	283.9	264.8	270.1	272.8	276.0	279.7	281.2	283.4
Magazines, periodicals, and books (12/77 = 100)	137.9	149.0	149.9	152.4	151.6	154.4	155.0	138.2	148.8	149.7	152.2	151.4	154.2	154.8
Sporting goods and equipment (12/77 = 100)	126.8	129.5	131.5	132.3	132.9	132.8	132.7	120.4	122.4	123.9	124.3	124.7	124.9	125.3
Sport vehicles (12/77 = 100)	128.7	(¹)	133.9	135.4	136.1	135.4	135.7	118.4	(¹)	121.9	122.5	122.8	122.6	123.9
Indoor and warm weather sport equipment (12/77 = 100)	116.9	120.1	119.6	119.9	120.4	121.0	119.6	116.9	118.2	117.7	118.1	118.6	119.2	117.1
Bicycles	191.0	194.8	197.3	197.6	198.9	199.4	197.6	192.0	196.2	198.9	198.9	200.2	200.7	198.8
Other sporting goods and equipment (12/77 = 100)	122.7	125.3	127.0	125.6	126.3	127.6	127.9	122.2	125.2	127.4	126.0	126.5	127.9	128.3
Toys, hobbies, and other entertainment (12/77 = 100)	129.3	132.2	133.2	134.5	135.4	135.5	136.1	128.1	131.2	132.3	133.5	134.3	134.4	134.9
Toys, hobbies, and music equipment (12/77 = 100)	127.9	130.8	131.7	133.4	134.1	134.8	135.9	125.3	127.7	128.6	130.2	130.7	131.4	132.4
Photographic supplies and equipment (12/77 = 100)	126.2	125.2	126.9	128.3	129.8	130.0	130.3	126.5	126.3	127.9	129.5	131.0	131.2	131.5
Pet supplies and expenses (12/77 = 100)	134.2	139.7	140.6	140.8	141.9	141.0	140.6	134.3	140.5	141.6	141.7	142.7	141.8	141.5
Entertainment services	214.7	225.5	227.1	227.8	228.5	228.7	230.5	215.1	226.1	227.8	228.4	229.2	229.2	230.9
Fees for participant sports (12/77 = 100)	131.3	139.6	140.9	141.9	142.0	141.6	142.5	131.4	141.2	142.5	143.5	143.7	142.9	143.8
Admissions (12/77 = 100)	124.9	131.2	131.6	131.2	132.2	133.0	133.5	124.8	130.1	130.6	130.3	131.2	132.1	132.6
Other entertainment services (12/77 = 100)	122.2	124.2	125.0	125.1	125.2	125.7	127.9	123.4	124.7	125.9	125.9	125.9	126.4	128.7
OTHER GOODS AND SERVICES	233.4	248.4	250.3	252.2	253.8	255.0	255.8	231.4	245.0	247.1	249.3	250.9	252.4	253.1
Tobacco products	219.1	227.1	230.7	234.1	235.1	237.4	237.8	218.4	226.2	229.8	233.2	234.0	236.6	237.0
Cigarettes	221.4	230.0	233.6	237.3	238.0	240.4	240.7	220.8	229.1	232.7	236.3	236.9	239.6	239.9
Other tobacco products and smoking accessories (12/77 = 100)	132.3	134.7	136.8	138.1	139.9	141.0	141.8	132.7	135.0	136.9	138.2	140.1	141.1	142.0
Personal care	232.1	240.9	242.3	243.7	245.9	246.5	247.8	229.7	238.8	240.4	241.8	244.1	244.7	246.0
Toilet goods and personal care appliances	228.6	236.4	238.5	240.6	243.8	244.5	246.3	227.2	236.9	239.2	241.5	244.7	245.4	247.0
Products for the hair, hairpieces, and wigs (12/77 = 100)	132.8	137.2	138.4	140.8	142.9	142.1	143.2	130.4	136.4	137.8	140.0	142.3	141.7	142.6
Dental and shaving products (12/77 = 100)	139.4	144.0	145.6	148.0	149.0	150.1	150.5	136.6	142.6	144.2	146.6	147.6	148.6	148.9
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100)	129.0	134.1	135.0	135.1	136.5	137.6	139.6	128.0	134.5	135.8	136.1	137.5	138.5	140.1
Other toilet goods and small personal care appliances (12/77 = 100)	132.0	135.9	137.0	137.4	140.3	140.5	140.8	135.4	138.9	140.2	140.7	143.5	144.0	144.4
Personal care services	236.0	245.7	246.5	247.3	248.7	249.2	250.1	232.5	241.0	241.8	242.6	244.0	244.4	245.4
Beauty parlor services for women	237.7	246.9	247.7	248.9	250.7	251.3	252.3	232.7	240.5	241.3	242.5	244.3	245.0	245.9
Haircuts and other barber shop services for men (12/77 = 100)	131.9	138.0	138.4	138.4	138.8	138.9	139.4	131.3	136.8	137.2	137.2	137.6	137.7	138.2
Personal and educational expenses	257.8	288.1	289.2	290.4	291.9	292.8	293.3	258.5	288.9	290.2	291.7	293.5	294.6	295.2
Schoolbooks and supplies	230.9	260.7	262.9	263.3	263.8	264.2	264.6	234.7	264.8	267.1	267.5	268.0	268.4	268.8
Personal and educational services	264.2	294.8	295.8	297.1	298.7	299.8	300.3	264.6	295.2	296.3	298.0	300.0	301.4	302.0
Tuition and other school fees	132.9	150.5	150.6	151.1	151.4	151.4	151.5	133.1	150.7	150.9	151.7	152.0	152.0	152.1
College tuition (12/77 = 100)	132.4	149.9	150.1	150.7	151.0	151.0	151.2	132.4	149.6	149.8	150.9	151.3	151.3	151.4
Elementary and high school tuition (12/77 = 100)	134.4	152.1	152.2	152.2	152.2	152.2	152.2	134.4	152.8	152.9	152.9	152.9	152.9	152.9
Personal expenses (12/77 = 100)	146.3	154.3	156.1	157.4	160.9	163.6	164.5	144.8	153.7	155.3	156.7	160.5	163.6	164.6
Special indexes:														
Gasoline, motor oil, coolant, and other products	408.4	400.5	393.9	379.3	362.6	366.1	387.3	409.5	401.8	395.3	380.6	363.7	367.2	388.6
Insurance and finance	393.4	423.9	424.8	420.9	426.3	431.5	436.5	393.1	422.8	423.5	419.9	425.9	430.9	436.0
Utilities and public transportation	278.5	297.7	299.1	302.7	305.1	310.8	316.4	276.7	296.4	297.7	301.5	304.0	309.6	315.5
Housekeeping and home maintenance services	328.6	343.0	344.0	344.0	347.5	349.8	351.2	325.1	343.3	344.2	344.0	348.2	350.4	351.8

¹ Not available.

19. 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)		
	1982			1982			1982			1982		
	Feb.	Apr.	June	Feb.	Apr.	June	Feb.	Apr.	June	Feb.	Apr.	June
Northeast												
EXPENDITURE CATEGORY												
All items	144.2	143.6	147.7	150.7	150.0	155.5	158.1	158.6	163.5	151.4	151.9	156.9
Food and beverages	143.3	143.7	145.9	142.7	142.2	144.1	145.7	147.4	148.8	140.4	140.4	142.9
Housing	146.0	144.5	151.6	155.7	155.3	165.2	172.5	173.3	182.1	159.5	160.5	169.3
Apparel and upkeep	117.0	119.1	118.6	120.5	122.5	122.8	123.1	127.4	128.3	119.9	125.1	123.4
Transportation	156.5	153.7	157.2	164.2	160.0	164.6	161.6	158.6	162.2	161.7	158.1	161.2
Medical care	145.1	146.4	147.5	147.0	148.9	150.2	148.7	150.4	152.7	144.8	151.5	155.4
Entertainment	133.3	135.5	136.5	132.4	136.2	137.5	136.1	135.8	136.4	137.6	139.0	141.1
Other goods and services	136.9	139.0	139.8	140.6	141.1	142.1	142.9	145.3	146.7	140.6	142.9	144.0
COMMODITY AND SERVICE GROUP												
Commodities	142.1	140.8	144.6	147.9	146.6	151.5	150.1	149.6	153.8	147.6	146.5	150.6
Commodities less food and beverages	141.4	139.0	143.8	150.5	148.7	155.1	152.2	150.6	156.2	151.0	149.4	154.3
Services	146.9	147.4	151.8	155.1	155.4	161.9	171.0	173.4	179.1	157.3	160.4	166.8
North Central region												
EXPENDITURE CATEGORY												
All items	153.6	155.2	159.6	151.9	155.1	155.3	149.1	151.2	155.2	151.0	153.3	156.4
Food and beverages	141.6	141.9	144.1	140.8	141.7	142.8	143.1	143.1	145.0	144.7	146.2	148.7
Housing	164.9	168.8	175.1	159.9	167.2	163.3	152.7	157.2	162.1	155.5	160.7	164.0
Apparel and upkeep	112.7	114.8	114.0	121.1	122.7	123.0	121.8	125.8	124.7	119.5	123.5	120.5
Transportation	161.1	158.7	165.1	159.7	156.9	163.2	161.0	158.4	165.7	160.3	157.2	163.1
Medical care	148.4	150.9	153.0	150.8	152.8	155.2	150.3	153.8	155.6	154.5	157.0	158.3
Entertainment	137.1	137.0	137.1	126.4	130.3	129.5	136.1	138.1	139.2	132.5	130.9	131.5
Other goods and services	138.8	140.3	141.4	145.1	146.5	152.5	137.3	139.0	141.2	144.6	146.4	148.3
COMMODITY AND SERVICE GROUP												
Commodities	145.2	145.4	149.4	145.4	146.4	148.5	143.5	144.3	148.8	142.1	143.7	147.9
Commodities less food and beverages	146.9	147.0	151.9	147.3	148.3	150.9	143.6	144.8	150.5	141.0	142.6	147.6
Services	166.1	169.8	174.8	162.6	169.3	166.2	158.4	162.4	165.6	165.0	168.7	169.8
South												
EXPENDITURE CATEGORY												
All items	152.6	152.9	156.3	157.2	155.7	158.4	154.0	152.3	157.6	152.3	153.5	156.5
Food and beverages	144.2	145.0	146.7	144.8	144.9	146.9	144.1	144.0	146.0	146.1	145.9	147.7
Housing	160.2	161.1	165.2	168.3	165.2	167.2	162.7	159.1	167.0	158.8	161.5	164.6
Apparel and upkeep	122.6	125.6	124.9	121.1	124.3	123.6	117.0	120.2	118.6	105.7	111.1	109.4
Transportation	161.5	157.5	163.4	162.8	159.7	167.0	160.7	157.1	165.1	159.9	155.8	163.3
Medical care	145.9	149.5	152.8	150.5	152.3	154.5	155.4	160.1	162.5	162.5	165.1	166.6
Entertainment	129.3	130.1	132.0	140.0	141.2	143.1	140.4	141.1	142.7	140.4	145.7	145.2
Other goods and services	141.2	142.8	144.1	140.7	142.4	143.3	142.0	143.7	144.5	147.9	150.2	150.4
COMMODITY AND SERVICE GROUP												
Commodities	146.8	146.3	149.1	148.4	147.6	150.9	146.0	144.3	149.2	145.0	146.0	149.7
Commodities less food and beverages	148.0	146.9	150.1	149.9	148.8	152.6	146.8	144.5	150.6	144.6	146.0	150.5
Services	160.7	162.1	166.5	170.4	167.8	169.8	166.3	164.5	170.6	163.3	164.8	166.8
West												
EXPENDITURE CATEGORY												
All items	157.9	158.5	160.8	157.1	157.0	158.6	150.2	151.1	149.7	153.3	157.9	159.9
Food and beverages	143.9	144.5	146.4	147.9	147.6	148.9	143.4	143.5	145.1	148.1	148.5	149.9
Housing	167.2	168.1	170.1	164.9	164.8	165.6	154.4	156.3	150.3	153.9	163.5	165.5
Apparel and upkeep	121.7	120.6	120.0	126.4	126.6	125.2	118.8	119.7	122.3	131.9	140.4	140.5
Transportation	164.2	162.9	167.7	163.6	161.7	165.9	160.9	158.3	163.5	164.5	160.5	162.8
Medical care	157.8	160.7	164.4	153.7	156.0	159.5	154.8	157.3	159.6	157.9	162.4	166.2
Entertainment	135.1	137.7	138.5	135.5	136.8	139.4	130.4	133.9	134.2	147.8	148.9	150.6
Other goods and services	144.5	147.5	147.0	145.3	148.9	149.1	137.1	139.5	139.9	147.6	149.8	153.3
COMMODITY AND SERVICE GROUP												
Commodities	146.0	145.5	147.8	148.4	148.1	149.5	145.2	146.4	147.5	147.5	148.9	151.3
Commodities less food and beverages	146.9	145.9	148.4	148.6	148.3	149.7	145.9	147.5	148.5	147.3	149.1	152.0
Services	173.7	175.9	178.1	169.1	169.3	171.1	157.3	157.9	152.8	161.8	171.2	172.5

20. 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)						
	1981	1982						1981	1982					
	June	Jan.	Feb.	Mar.	Apr.	May	June	June	Jan.	Feb.	Mar.	Apr.	May	June
U.S. city average ²	271.3	282.5	283.4	283.1	284.3	287.1	290.6	271.4	282.1	282.9	282.5	283.7	286.5	290.1
Anchorage, Alaska (10/67=100)	...	253.0	...	260.0	...	263.8	...	...	248.6	...	254.5	...	258.0	...
Atlanta, Ga.	269.2	...	279.8	...	280.2	...	291.1	268.8	...	282.7	...	282.9	...	282.9
Baltimore, Md.	...	282.1	...	281.9	...	283.6	...	...	282.3	...	282.2	...	283.7	...
Boston, Mass.	...	274.0	...	269.8	...	272.5	...	...	273.4	...	269.8	...	272.0	...
Buffalo, N.Y.	257.2	...	259.9	...	258.3	...	265.8	256.1	...	258.0	...	256.4	...	264.1
Chicago, Ill.-Northwestern Ind.	269.1	275.4	274.9	276.4	280.2	287.7	291.8	267.9	275.9	275.4	276.5	280.0	287.0	291.5
Cincinnati, Ohio-Ky.-Ind.	...	285.7	...	284.9	...	288.7	...	...	288.4	...	287.2	...	291.2	...
Cleveland, Ohio	285.3	...	285.9	...	286.5	...	297.8	283.8	...	285.0	...	285.7	...	297.0
Dallas-Ft. Worth, Tex.	286.0	...	293.6	...	297.2	...	304.8	284.0	...	289.8	...	292.7	...	300.5
Denver-Boulder, Colo.	...	305.4	...	309.2	...	313.4	...	...	310.5	...	315.0	...	319.5	...
Detroit, Mich.	280.5	280.8	277.8	278.2	283.7	285.9	289.1	275.9	277.8	274.8	275.1	280.3	282.7	286.0
Honolulu, Hawaii	252.8	...	262.2	...	263.8	...	269.5	253.8	...	263.2	...	264.7	...	269.5
Houston, Tex.	292.9	...	304.1	...	304.9	...	313.9	289.4	...	300.3	...	302.1	...	310.9
Kansas City, Mo.-Kansas	270.5	...	276.0	...	274.0	...	281.6	269.1	...	274.1	...	272.1	...	280.1
Los Angeles-Long Beach, Anaheim, Calif.	267.9	285.8	285.6	286.6	286.8	287.1	290.1	271.7	289.8	289.4	290.4	290.5	290.6	293.9
Miami, Fla. (11/77=100)	...	155.2	...	155.1	...	155.7	...	...	156.4	...	156.4	...	157.0	...
Milwaukee, Wis.	...	291.3	...	289.3	...	292.9	...	...	295.3	...	292.5	...	296.0	...
Minneapolis-St. Paul, Minn.-Wis.	376.1	...	306.0	...	301.7	...	304.1	276.6	...	305.3	...	301.2	...	303.8
New York, N.Y.-Northeastern N.J.	258.6	268.5	269.0	267.4	268.2	270.9	276.7	257.9	267.5	267.8	265.9	266.5	269.4	275.3
Northeast, Pa. (Scranton)	...	272.5	...	267.2	...	270.2	...	...	274.5	...	268.4	...	272.1	...
Philadelphia, Pa.-N.J.	265.4	275.7	275.5	274.7	275.1	275.1	279.7	265.6	275.1	275.1	274.3	274.5	274.7	279.1
Pittsburgh, Pa.	271.3	...	278.6	...	275.3	...	285.1	273.0	...	280.0	...	276.7	...	285.9
Portland, Oreg.-Wash.	...	288.4	...	286.7	...	282.1	...	...	285.5	...	283.9	...	279.7	...
St. Louis, Mo.-Ill.	...	278.4	...	280.7	...	285.7	...	...	277.1	...	279.3	...	284.5	...
San Diego, Calif.	...	323.1	...	319.0	...	329.2	...	...	317.4	...	313.9	...	323.3	...
San Francisco-Oakland, Calif.	274.0	...	295.8	...	298.8	...	304.6	274.3	...	294.9	...	297.8	...	303.4
Seattle-Everett, Wash.	...	295.9	...	293.4	...	301.2	...	...	291.9	...	289.6	...	297.1	...
Washington, D.C.-Md.-Va.	...	278.0	...	278.8	...	278.4	...	...	281.8	...	283.8	...	283.3	...

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

 Area is used for New York and Chicago.
²Average of 85 cities.

21. Producer Price Indexes, by stage of processing

[1967=100]

Commodity grouping	Annual average 1981	1981						1982						
		July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar. ¹	Apr.	May	June	July
FINISHED GOODS														
Finished goods	'269.8	271.8	271.5	271.5	274.3	274.7	275.4	277.9	277.9	'277.3	276.9	277.7	279.9	281.7
Finished consumer goods	'271.3	273.5	273.0	273.1	275.1	275.2	275.8	278.3	278.6	'277.7	276.9	277.6	280.0	282.0
Finished consumer foods	'253.6	257.6	256.3	256.2	254.0	252.7	252.9	256.4	258.2	'257.1	259.8	262.3	263.4	260.7
Crude	'263.8	262.7	256.9	253.5	253.8	260.0	273.9	280.6	282.5	'263.3	266.1	259.4	254.3	240.6
Processed	250.6	255.0	254.2	254.4	252.0	249.9	249.0	252.1	254.0	'254.5	257.1	260.4	262.0	260.4
Nondurable goods less foods	'319.6	322.5	322.1	324.2	324.3	325.4	326.3	329.3	330.3	'328.8	324.9	324.1	328.1	334.7
Durable goods	'218.6	218.1	218.3	215.8	224.5	224.7	225.4	226.2	224.0	'223.9	223.8	224.7	226.2	227.0
Consumer nondurable goods less food and energy	'208.8	209.5	210.4	211.8	212.6	213.6	213.9	217.4	219.6	'220.5	221.4	222.9	222.9	223.3
Capital equipment	264.3	265.4	265.8	265.3	271.5	273.0	274.1	276.2	275.0	'275.8	277.1	278.3	279.6	280.9
INTERMEDIATE MATERIALS														
Intermediate materials, supplies, and components	306.0	308.5	310.1	309.7	309.4	309.0	309.4	311.0	311.1	'310.6	310.1	309.8	310.0	311.4
Materials and components for manufacturing	'286.1	287.9	289.8	290.2	290.2	289.5	289.3	290.4	290.9	'290.4	290.9	291.5	290.0	289.6
Materials for food manufacturing	'260.4	260.5	261.0	254.6	250.9	246.8	245.6	250.7	252.8	'252.0	254.3	260.0	260.9	260.0
Materials for nondurable manufacturing	'285.8	289.2	291.0	291.2	290.9	289.4	288.8	289.0	289.3	'288.8	288.1	288.1	285.8	283.6
Materials for durable manufacturing	'312.1	314.4	316.0	317.1	316.7	314.9	314.0	313.6	313.1	'310.9	311.2	310.6	307.3	308.2
Components for manufacturing	'259.3	259.5	261.8	263.8	265.1	266.9	267.8	269.8	270.9	'271.8	272.9	273.8	273.9	274.2
Materials and components for construction	'287.6	290.4	290.7	290.0	290.1	290.2	291.1	292.0	293.0	'293.3	293.8	293.4	294.2	294.0
Processed fuels and lubricants	'595.4	602.0	607.8	601.4	596.9	595.1	598.1	604.4	596.8	'593.0	579.8	569.9	581.2	601.6
Manufacturing industries	'498.6	500.3	508.3	500.5	497.5	496.4	499.0	505.9	497.8	'496.1	487.6	482.3	492.0	508.4
Nonmanufacturing industries	'680.8	692.0	695.6	690.5	684.7	682.2	685.6	691.3	684.2	'678.3	660.9	646.7	659.3	683.4
Containers	'276.1	278.8	280.3	280.6	280.9	280.6	280.2	282.5	285.5	'286.3	287.4	287.1	286.7	286.4
Supplies	'263.8	266.0	266.1	266.1	266.6	267.2	268.3	269.8	270.4	'270.6	272.3	273.6	273.6	273.5
Manufacturing industries	'253.1	255.0	256.0	256.8	258.2	259.2	261.0	262.6	263.3	'264.5	265.6	267.2	267.3	267.3
Nonmanufacturing industries	269.6	272.0	271.6	271.1	271.2	271.6	272.4	273.8	274.4	'274.1	276.0	277.2	277.1	277.0
Feeds	230.4	232.8	229.1	221.3	215.9	212.0	214.6	214.8	212.0	'208.1	212.9	214.2	213.1	211.1
Other supplies	276.4	278.7	279.3	280.7	282.3	283.7	284.1	285.7	287.3	'287.9	289.1	290.2	290.4	290.7
CRUDE MATERIALS														
Crude materials for further processing	'329.0	337.3	333.0	327.4	319.9	313.9	311.5	318.4	321.6	'320.0	322.8	328.1	325.7	323.4
Foodstuffs and feedstuffs	257.4	267.2	261.8	253.4	245.7	238.3	233.7	242.6	248.3	247.9	254.3	262.3	259.8	255.5
Nonfood materials	'482.3	487.2	485.3	486.0	479.2	476.3	478.6	481.5	479.3	'475.2	470.4	470.4	467.9	470.0
Nonfood materials except fuel	'413.7	413.1	413.9	410.2	404.1	397.8	396.2	399.5	394.8	'387.1	379.0	376.6	370.0	369.1
Manufacturing industries	'429.4	428.7	429.6	425.4	418.6	411.7	409.8	413.2	407.5	'398.4	389.0	386.4	378.9	378.4
Construction	'261.8	262.6	263.1	263.6	264.7	264.8	265.2	267.6	270.5	'273.2	275.3	274.0	273.7	270.4
Crude fuel	'751.2	781.2	766.7	788.7	779.0	792.5	813.0	812.9	824.5	'839.7	853.7	866.1	885.2	903.1
Manufacturing industries	'864.9	902.6	883.0	911.4	898.4	915.8	942.5	940.3	954.4	'974.7	992.4	1,008.2	1,033.6	1,056.0
Nonmanufacturing industries	'674.0	698.1	687.8	704.8	697.8	708.2	724.0	725.6	735.4	'746.6	757.6	767.4	781.7	796.0
SPECIAL GROUPINGS														
Finished goods excluding foods	'273.3	274.7	274.6	274.7	279.1	280.0	280.9	283.0	282.4	'281.9	280.6	280.9	283.4	286.7
Finished consumer goods excluding foods	'276.5	277.9	277.7	277.9	281.6	282.4	283.2	285.2	284.9	'284.0	281.7	281.6	284.6	288.7
Finished consumer goods less energy	233.6	235.0	235.0	234.9	237.2	237.2	237.6	240.5	241.3	'241.3	242.4	244.1	244.9	244.5
Intermediate materials less foods and feeds	310.1	312.7	314.5	314.6	314.6	314.5	314.9	316.4	316.4	'316.0	315.3	314.6	314.8	316.4
Intermediate materials less energy	285.2	287.2	288.5	288.7	288.8	288.5	288.7	289.9	290.7	'290.5	291.2	291.7	290.9	290.6
Intermediate foods and feeds	'250.3	251.1	250.2	243.5	239.3	235.2	235.2	238.8	239.4	'237.7	240.7	245.0	245.3	244.1
Crude materials less agricultural products	'545.6	550.6	549.1	551.4	543.4	540.7	543.5	546.1	543.9	'538.4	532.2	531.7	529.4	531.8
Crude materials less energy	254.0	261.8	258.0	250.4	243.2	235.8	231.6	239.1	243.4	242.8	247.3	252.5	248.6	245.0

¹ Data for March 1982 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.

22. Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1981	1981						1982						
			July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar. ¹	Apr.	May	June	July
	All commodities	293.4	296.2	296.4	295.7	296.1	295.5	295.8	298.3	298.6	298.0	297.9	298.6	299.4	300.6
	All commodities (1957-59 = 100)	311.3	314.3	314.5	313.7	314.2	313.5	313.8	316.5	316.8	316.2	316.1	316.8	317.7	318.9
	Farm products and processed foods and feeds	251.5	256.8	254.2	250.3	246.0	242.5	241.0	246.0	248.4	247.5	251.4	255.6	255.3	252.5
	Industrial commodities	304.1	306.2	307.2	307.4	309.0	309.3	310.0	311.8	311.6	311.0	309.9	309.5	310.7	313.0
FARM PRODUCTS AND PROCESSED FOODS AND FEEDS															
01	Farm products	254.9	263.3	257.9	251.1	243.1	237.4	234.6	242.2	247.1	244.7	250.6	256.1	252.7	246.5
01-1	Fresh and dried fruits and vegetables	267.3	265.6	258.1	252.8	248.8	254.0	280.5	289.2	290.1	257.3	266.7	270.7	263.8	238.4
01-2	Grains	248.4	257.4	242.7	227.0	227.6	226.5	213.6	225.2	223.2	220.9	226.0	228.2	225.7	212.8
01-3	Livestock	248.0	266.5	262.0	257.3	244.5	231.1	225.0	236.8	251.2	255.6	267.6	282.9	277.5	270.3
01-4	Live poultry	201.2	215.3	210.3	196.7	185.7	175.0	171.4	186.8	197.3	197.7	186.2	192.7	207.2	212.5
01-5	Plant and animal fibers	242.0	251.3	232.5	206.5	211.7	198.5	188.4	198.2	193.5	199.5	207.4	214.1	203.1	220.8
01-6	Fluid milk	287.4	284.3	285.0	287.3	294.3	288.2	286.7	287.6	285.8	282.5	280.3	278.8	278.9	279.0
01-7	Eggs	187.1	185.1	180.7	193.2	193.8	209.7	195.5	187.0	200.6	204.0	192.1	164.3	159.3	171.7
01-8	Hay, hayseeds, and oilseeds	274.1	290.0	284.3	267.2	230.4	221.1	218.8	218.4	217.6	213.7	222.8	224.3	219.3	220.0
01-9	Other farm products	273.8	250.2	263.9	268.9	263.3	273.1	280.2	280.1	273.7	273.0	274.2	273.9	271.8	265.5
02	Processed foods and feeds	248.7	252.2	251.2	248.9	246.6	244.3	243.6	247.1	248.1	248.1	250.8	254.4	255.8	254.8
02-1	Cereal and bakery products	255.5	258.3	257.7	258.5	256.9	256.5	255.1	256.6	253.3	253.3	253.8	253.9	253.3	253.6
02-2	Meats, poultry, and fish	246.2	257.1	254.4	253.3	246.6	240.0	236.1	243.7	247.9	250.0	257.1	267.1	271.1	266.1
02-3	Dairy products	245.6	245.1	245.3	245.5	246.8	246.9	247.2	247.7	248.0	248.0	248.4	248.5	248.7	248.8
02-4	Processed fruits and vegetables	261.2	265.9	267.3	270.0	271.7	270.5	271.8	273.2	276.3	275.9	274.5	273.4	275.4	275.9
02-5	Sugar and confectionery	275.9	266.0	267.3	246.8	246.7	244.1	247.6	256.8	257.2	255.0	256.4	265.8	269.5	276.1
02-6	Beverages and beverage materials	248.0	249.0	249.4	249.1	250.0	251.4	251.9	253.9	255.1	256.4	256.6	256.7	256.5	256.7
02-7	Fats and oils	227.4	234.8	229.5	224.3	223.4	221.5	219.1	216.6	213.7	213.7	218.6	222.2	222.0	221.4
02-8	Miscellaneous processed foods	250.1	252.2	252.1	253.0	249.9	250.1	250.1	251.0	250.9	249.5	249.5	248.0	248.6	248.0
02-9	Prepared animal feeds	230.2	232.2	228.9	222.9	218.1	214.7	217.2	217.4	214.9	211.4	216.1	217.4	216.4	214.6
INDUSTRIAL COMMODITIES															
03	Textile products and apparel	199.7	201.3	202.4	202.9	204.0	203.6	203.4	205.0	205.6	205.0	204.7	205.1	204.5	204.1
03-1	Synthetic fibers (12/75 = 100)	156.3	159.7	161.2	161.0	162.7	161.6	161.5	162.9	163.2	161.3	162.1	164.3	163.8	162.4
03-2	Processed yarns and threads (12/75 = 100)	138.0	140.3	142.0	142.3	144.4	140.3	139.6	139.2	140.7	140.5	140.4	141.0	139.4	139.2
03-3	Gray fabrics (12/75 = 100)	146.8	148.2	149.0	149.1	148.0	147.4	147.2	148.2	147.3	146.6	145.8	145.5	145.8	144.8
03-4	Finished fabrics (12/75 = 100)	125.2	126.0	126.8	126.8	126.7	126.5	125.6	126.8	127.1	125.6	125.5	125.4	124.0	123.8
03-81	Apparel	186.0	187.2	187.8	188.0	189.9	190.8	191.0	192.7	193.2	193.4	192.2	192.7	193.0	193.1
03-82	Textile housefurnishings	226.7	227.1	228.8	232.2	233.0	233.4	233.6	237.6	240.8	241.4	246.5	246.4	244.4	243.0
04	Hides, skins, leather, and related products	260.9	261.1	261.3	261.7	260.0	259.8	260.7	261.8	261.6	260.6	264.4	263.4	262.7	261.3
04-2	Leather	319.8	319.0	313.7	313.2	313.7	311.3	312.3	319.0	317.7	313.3	313.2	309.5	306.7	307.4
04-3	Footwear	240.9	242.4	242.5	242.9	239.6	238.8	240.1	238.9	238.6	239.8	243.7	242.5	243.8	241.7
04-4	Other leather and related products	241.8	242.9	245.1	245.0	245.0	245.4	245.4	247.5	248.1	248.1	253.2	253.2	250.5	252.0
05	Fuels and related products and power	694.5	704.9	704.3	703.5	698.1	698.1	702.5	705.1	697.8	689.7	671.2	661.9	677.4	701.8
05-1	Coal	497.2	505.5	507.0	510.2	510.8	512.7	515.2	525.3	529.9	529.6	532.5	534.4	534.1	538.6
05-2	Coke	456.4	469.7	469.7	469.7	469.7	469.7	469.7	469.7	469.7	467.5	468.1	468.2	462.7	463.9
05-3	Gas fuels ²	939.4	969.4	949.3	976.6	965.6	983.0	1,003.7	987.9	987.6	990.5	996.6	1,003.4	1,029.7	1,055.4
05-4	Electric power	367.2	374.6	385.8	383.8	378.4	378.3	384.2	392.8	392.9	403.7	406.7	405.5	406.6	416.9
05-61	Crude petroleum ³	803.5	798.9	796.8	796.8	788.2	785.9	787.2	770.3	744.8	718.0	718.2	718.2	718.5	718.7
05-7	Petroleum products, refined ⁴	805.9	816.3	813.4	806.1	802.3	798.3	798.6	801.9	789.7	770.6	733.4	712.7	738.5	777.1
06	Chemicals and allied products	287.6	291.3	293.3	293.3	292.4	292.0	291.8	292.9	293.6	294.6	294.5	296.2	293.5	291.6
06-1	Industrial chemicals ⁵	363.3	370.4	371.5	371.8	367.9	363.7	362.8	362.9	362.2	361.4	359.6	358.1	352.9	349.7
06-21	Prepared paint	249.8	250.7	250.7	250.7	250.7	254.5	256.4	258.9	258.9	258.9	259.3	265.1	265.1	265.1
06-22	Paint materials	300.1	304.5	308.5	308.0	308.1	308.3	305.8	306.6	306.4	306.8	306.8	306.2	304.2	304.3
06-3	Drugs and pharmaceuticals	193.5	195.5	195.0	197.8	198.5	198.2	198.9	202.2	204.4	205.9	208.6	209.4	209.6	209.9
06-4	Fats and oils, inedible	295.6	290.9	305.6	285.6	277.7	282.5	280.4	272.8	274.2	290.1	282.6	288.4	287.5	278.2
06-5	Agricultural chemicals and chemical products	285.0	288.9	293.4	292.6	293.1	295.7	294.9	296.8	298.0	297.1	296.3	294.9	294.0	291.5
06-6	Plastic resins and materials	289.2	295.9	297.5	296.8	299.5	293.2	294.2	286.1	287.3	285.5	286.1	285.4	281.9	280.6
06-7	Other chemicals and allied products	254.2	254.8	257.3	257.4	256.9	259.9	260.0	263.8	264.9	268.5	269.0	275.9	273.0	270.7
07	Rubber and plastic products	232.6	232.1	234.1	235.7	237.3	238.0	238.3	237.3	239.3	240.8	241.9	242.9	243.3	243.1
07-1	Rubber and rubber products	256.2	254.7	256.9	260.3	262.9	264.4	264.6	262.5	266.0	266.7	268.7	271.2	271.5	271.6
07-11	Crude rubber	281.8	284.2	284.7	283.1	279.8	279.0	280.8	281.8	282.1	283.5	283.2	283.6	282.4	280.2
07-12	Tires and tubes	250.6	246.8	249.9	256.5	257.1	255.9	255.4	253.6	256.7	253.7	254.4	255.0	253.3	255.6
07-13	Miscellaneous rubber products	251.4	251.4	253.1	253.9	261.1	266.7	267.2	263.8	268.8	274.3	278.8	284.6	285.4	286.1
07-2	Plastic products (6/78 = 100)	128.5	128.7	129.8	129.9	130.3	130.3	130.6	130.5	131.0	132.3	132.4	132.3	132.6	132.3
08	Lumber and wood products	292.8	296.5	294.5	289.3	284.3	282.1	285.4	285.5	285.2	285.3	286.1	283.9	288.7	288.3
08-1	Lumber	325.1	332.4	329.9	320.2	311.7	306.6	309.9	310.0	308.1	308.2	311.5	309.2	315.2	319.2
08-2	Millwork	273.4	273.6	272.3	271.4	271.3	271.8	273.7	277.1	278.6	276.5	276.4	275.8	280.1	281.8
08-3	Plywood	245.7	247.8	245.6	240.8	234.3	233.5	239.7	237.4	235.1	236.5	234.1	230.6	238.9	232.4
08-4	Other wood products	239.1	240.7	239.8	240.5	239.9	239.3	239.4	238.2	238.7	238.6	237.7	237.3	237.1	236.0

See footnotes at end of table.

22. Continued—Producer Price Indexes, by commodity groupings

[1967=100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1981	1981						1982						
			July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar. ¹	Apr.	May	June	July
INDUSTRIAL COMMODITIES—Continued															
09	Pulp, paper, and allied products	'273.8	274.9	275.9	277.8	279.2	280.4	281.0	285.5	286.3	'287.4	287.9	289.1	289.3	288.9
09-1	Pulp, paper, and products, excluding building paper and board	'270.8	272.3	273.7	274.8	275.7	275.8	275.6	276.1	276.8	'276.6	276.4	275.4	274.6	272.9
09-11	Woodpulp	'397.1	394.2	394.2	394.2	402.3	413.7	413.7	410.3	410.3	'411.6	392.3	398.2	390.3	370.5
09-12	Wastepaper	'175.7	182.1	182.1	178.5	165.1	144.5	143.4	135.2	128.8	'129.2	128.1	121.5	115.2	115.6
09-13	Paper	'279.8	279.7	282.1	285.9	287.8	287.4	287.2	289.2	289.8	'289.6	291.7	288.8	288.2	287.0
09-14	Paperboard	'258.1	259.4	260.6	261.6	261.7	261.6	260.0	259.7	261.4	'261.1	261.2	258.8	255.9	255.0
09-15	Converted paper and paperboard products	'258.8	261.2	262.4	262.8	263.2	263.1	263.2	263.9	264.7	'264.5	265.0	264.7	265.0	264.6
09-2	Building paper and board	'231.7	235.5	234.2	234.2	233.3	232.1	230.3	233.8	231.4	'239.6	235.5	239.5	239.4	239.2
10	Metals and metal products	300.4	302.0	304.1	304.9	305.3	304.2	303.3	304.7	304.2	'302.9	303.8	303.4	300.1	300.2
10-1	Iron and steel	333.8	338.8	339.9	339.8	341.3	340.0	339.9	343.1	342.9	'342.5	342.6	341.2	338.3	337.4
10-17	Steel mill products	337.6	344.9	344.9	345.3	348.7	348.6	348.9	350.6	350.3	'350.5	352.2	352.1	349.9	349.1
10-2	Nonferrous metals	'285.8	282.8	287.3	289.4	285.4	281.1	277.1	274.4	273.6	'267.2	266.1	263.5	253.7	256.1
10-3	Metal containers	'315.6	315.2	318.7	318.8	318.2	318.1	316.8	324.3	326.2	'327.2	329.7	330.1	330.2	329.9
10-4	Hardware	'263.2	263.8	265.3	267.8	269.5	271.5	272.0	274.1	274.8	'278.2	276.2	276.7	277.9	278.9
10-5	Plumbing fixtures and brass fittings	'267.5	270.9	271.2	271.6	272.9	273.1	274.0	274.6	276.4	'279.1	280.3	281.0	282.5	283.0
10-6	Heating equipment	'224.2	226.4	227.9	228.5	229.0	228.8	229.9	233.4	233.1	'235.4	235.8	237.3	238.6	239.1
10-7	Fabricated structural metal products	'295.5	297.9	299.3	300.0	302.6	303.2	303.0	303.4	304.0	'304.5	305.0	304.8	305.2	303.8
10-8	Miscellaneous metal products	'270.5	272.0	272.9	273.7	276.1	278.0	278.3	281.2	278.7	'279.5	283.5	290.0	289.5	288.8
11	Machinery and equipment	'263.3	264.8	266.2	268.1	269.3	270.4	272.0	274.1	275.4	'276.2	277.3	278.1	278.4	279.4
11-1	Agricultural machinery and equipment	'288.3	288.1	290.3	292.8	295.5	300.8	302.8	303.1	304.6	'306.4	306.1	307.0	308.8	310.2
11-2	Construction machinery and equipment	320.8	323.8	325.0	326.5	328.3	329.6	332.0	337.0	337.9	'339.2	341.4	343.4	343.7	346.1
11-3	Metalworking machinery and equipment	'301.3	302.9	303.5	305.3	306.6	307.9	312.9	315.9	317.2	'317.8	318.7	320.3	320.8	321.9
11-4	General purpose machinery and equipment	'288.7	290.6	292.3	293.9	295.1	296.2	297.9	300.0	301.3	'302.0	302.9	303.3	303.1	304.4
11-6	Special industry machinery and equipment	'307.9	311.0	310.3	312.8	314.6	315.0	316.4	320.4	320.7	'321.3	323.1	324.1	324.7	327.1
11-7	Electrical machinery and equipment	'220.2	221.1	222.8	224.2	225.3	226.0	227.0	228.7	229.5	'230.3	231.6	231.7	231.9	232.0
11-9	Miscellaneous machinery	'252.6	254.0	256.0	258.5	259.0	259.8	260.4	261.4	264.0	'264.9	265.4	267.2	268.0	268.9
12	Furniture and household durables	'198.5	199.5	199.6	201.0	201.3	202.1	202.9	203.5	204.6	'205.5	205.6	206.1	206.6	206.8
12-1	Household furniture	'219.7	220.0	220.7	222.2	222.8	225.1	226.6	227.5	227.4	'227.6	230.6	230.9	231.1	230.9
12-2	Commercial furniture	'257.5	258.7	259.1	261.6	262.1	263.3	263.9	266.7	271.2	'273.6	274.5	275.5	276.2	277.8
12-3	Floor coverings	'178.7	182.8	181.9	181.7	180.9	182.3	181.4	180.3	180.6	'180.6	180.3	180.5	180.7	180.1
12-4	Household appliances	'187.3	188.8	189.1	190.1	190.8	190.9	191.3	193.4	195.3	'197.3	196.3	197.8	198.5	199.3
12-5	Home electronic equipment	'89.2	87.4	87.6	87.8	88.1	88.0	89.6	89.3	89.6	'89.1	88.2	88.1	88.2	88.2
12-6	Other household durable goods	'281.0	282.1	280.9	285.8	285.8	285.3	286.2	283.4	283.7	'285.0	283.5	283.1	284.6	283.6
13	Nonmetallic mineral products	309.5	314.3	314.1	313.2	313.3	313.7	313.5	315.6	319.0	'319.9	320.0	319.1	318.7	320.3
13-11	Flat glass	'212.6	218.3	218.3	218.3	218.5	218.5	216.1	216.2	216.2	'216.2	216.2	216.2	216.2	226.1
13-2	Concrete ingredients	296.3	297.7	298.0	298.5	298.4	298.5	298.7	306.2	308.4	'309.8	309.2	310.7	310.9	310.6
13-3	Concrete products	291.2	293.4	293.4	292.9	293.3	293.4	293.6	295.5	295.9	'296.3	297.3	297.1	297.9	298.2
13-4	Structural clay products, excluding refractories	'249.8	250.9	250.9	255.3	256.2	256.5	257.5	257.5	257.7	'257.7	260.7	258.1	258.4	258.8
13-5	Refractories	'302.4	307.1	307.1	307.1	307.8	308.9	311.3	316.8	335.1	'337.4	339.7	339.4	340.9	340.9
13-6	Asphalt roofing	'407.5	421.9	420.9	401.6	402.9	410.2	405.6	401.3	400.4	'394.4	385.2	384.0	388.8	392.3
13-7	Gypsum products	256.2	259.7	255.3	252.9	252.4	251.3	249.7	250.4	255.0	260.7	262.8	259.4	256.4	255.8
13-8	Glass containers	'328.7	335.5	335.5	335.5	335.5	335.5	335.5	335.4	352.2	'356.0	357.4	357.4	357.4	357.4
13-9	Other nonmetallic minerals	'463.8	476.2	475.3	474.3	473.3	473.5	474.7	474.7	478.7	'479.6	478.8	472.1	465.2	466.4
14	Transportation equipment (12/68 = 100)	235.4	235.0	235.9	231.8	244.5	246.3	246.8	248.6	245.2	'245.2	245.6	247.2	249.6	250.4
14-1	Motor vehicles and equipment	'237.6	237.4	238.4	232.8	247.8	248.9	249.5	250.8	246.8	'246.8	246.6	248.7	251.5	252.5
14-4	Railroad equipment	'336.1	338.1	338.7	338.7	338.7	341.3	340.1	345.8	345.8	'346.3	353.9	349.6	349.6	349.3
15	Miscellaneous products	'265.7	263.2	262.6	267.0	268.5	269.5	267.6	268.3	273.5	'272.7	273.3	272.3	271.6	273.8
15-1	Toys, sporting goods, small arms, ammunition	'211.9	213.2	212.7	213.6	213.0	212.7	213.3	218.4	220.1	'220.7	221.9	222.7	222.9	222.9
15-2	Tobacco products	268.3	268.8	268.8	274.5	278.2	278.2	278.2	278.2	306.6	'306.6	306.5	306.7	306.7	311.3
15-3	Notions	'259.8	267.5	267.7	267.8	269.7	269.7	269.7	270.3	270.4	'271.5	271.8	280.3	280.3	280.3
15-4	Photographic equipment and supplies	'210.0	211.4	207.1	208.7	208.9	209.0	209.1	209.9	210.5	'212.1	214.6	210.9	210.8	210.6
15-5	Mobile homes (12/74 = 100)	156.8	158.1	158.3	158.7	159.1	159.3	159.3	159.5	159.6	'161.9	162.0	162.1	162.5	162.5
15-9	Other miscellaneous products	'347.4	333.1	334.6	345.5	348.5	344.8	344.6	342.2	341.1	'334.5	333.5	330.8	328.0	333.1

¹ Data for March 1982 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 Prices for natural gas are lagged 1 month.

³ Includes only domestic production.

⁴ Most prices for refined petroleum products are lagged 1 month.

⁵ Some prices for industrial chemicals are lagged 1 month.

r = revised.

23. Producer Price Indexes, for special commodity groupings

[1967 = 100 unless otherwise specified]

Commodity grouping	Annual average 1981	1981						1982						
		July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar. ¹	Apr.	May	June	July
All commodities — less farm products	295.7	298.0	298.7	298.5	299.5	299.4	300.0	302.0	301.9	301.4	300.9	301.1	302.3	304.1
All foods	'251.8	252.2	253.7	251.7	249.1	247.4	247.6	251.6	253.2	'251.6	254.4	257.9	259.0	356.8
Processed foods	'252.1	256.0	255.0	252.8	250.0	247.6	246.5	250.5	251.9	252.1	254.9	259.0	260.9	259.8
Industrial commodities less fuels	263.7	265.0	266.1	266.4	268.7	269.0	269.4	271.1	271.5	'271.7	272.2	272.8	272.5	272.7
Selected textile mill products (Dec. 1975 = 100)	'135.8	136.8	137.2	138.1	138.2	138.4	137.9	139.3	139.7	139.0	138.9	138.9	138.1	137.5
Hosiery	134.3	135.8	135.3	135.5	136.5	136.5	136.7	136.9	136.9	137.5	138.1	138.5	138.5	138.5
Underwear and nightwear	'203.4	204.7	204.7	204.7	205.7	206.3	205.7	213.9	215.6	'215.9	216.4	216.3	217.8	218.0
Chemicals and allied products, including synthetic rubber and fibers and yarns	'278.4	282.3	284.0	284.4	283.8	283.2	283.1	284.3	285.1	'285.6	285.7	287.3	284.8	283.0
Pharmaceutical preparations	'186.9	189.0	188.4	191.6	192.8	192.5	193.3	196.8	199.3	'201.1	204.4	205.3	205.3	205.7
Lumber and wood products, excluding millwork	'303.0	308.7	306.2	298.0	290.1	286.4	290.7	289.9	287.9	'288.5	289.9	287.2	294.0	294.6
Steel mill products, including fabricated wire products	337.6	344.9	344.9	345.3	348.7	348.6	348.9	350.6	350.3	350.5	352.2	352.1	349.9	348.7
Finished steel mill products, excluding fabricated wire products	336.2	343.3	343.3	343.7	347.4	347.2	347.5	349.3	348.9	349.2	351.0	350.9	348.6	347.7
Finished steel mill products, including fabricated wire products	336.2	343.3	343.3	343.7	347.4	347.2	347.5	349.3	348.9	349.2	351.0	350.9	348.6	347.4
Special metals and metal products	279.4	280.2	281.9	280.1	286.7	286.8	286.6	287.9	286.0	285.3	285.7	286.4	285.8	286.3
Fabricated metal products	280.0	281.7	283.1	283.9	286.0	287.0	287.1	289.4	289.0	'289.9	292.5	294.3	294.6	294.0
Copper and copper products	'203.8	202.5	206.2	205.1	201.9	198.9	195.4	194.5	194.1	'190.8	190.5	191.6	180.0	179.5
Machinery and motive products	256.7	257.4	258.6	257.7	264.3	265.8	266.9	268.9	268.1	'268.5	269.3	270.5	271.8	272.8
Machinery and equipment, except electrical	'288.5	290.4	291.7	293.8	295.0	296.4	298.4	300.7	302.3	'303.1	304.1	305.2	305.7	307.2
Agricultural machinery, including tractors	'297.3	295.6	298.2	301.6	305.7	312.5	314.7	315.1	316.0	'318.4	317.7	318.2	319.8	320.5
Metalworking machinery	'329.7	330.1	331.4	333.9	336.7	338.3	341.2	343.8	344.9	346.4	348.8	349.4	350.3	352.7
Numerically controlled machine tools (Dec. 1971 = 100)	'239.3	241.7	241.8	241.8	242.2	242.0	242.0	240.1	239.8	'239.9	240.2	240.3	240.3	239.6
Total tractors	'324.7	325.5	327.8	330.7	338.3	342.2	342.3	346.9	346.9	'349.1	351.7	352.4	353.2	354.2
Agricultural machinery and equipment less parts	'289.8	288.6	291.1	294.0	297.6	303.5	305.8	306.5	307.4	'309.7	309.2	309.6	311.0	311.8
Farm and garden tractors less parts	'300.1	298.0	301.4	305.5	313.0	319.6	319.7	319.7	319.7	'323.5	322.3	322.9	324.3	324.2
Agricultural machinery, excluding tractors less parts	'295.2	293.9	295.8	298.7	299.9	303.5	310.9	311.6	313.2	'314.6	314.3	314.7	316.5	317.7
Industrial valves	'315.9	317.5	319.8	322.7	322.4	323.4	325.3	328.6	330.2	'330.5	327.3	327.9	327.2	329.2
Industrial fittings	302.1	303.0	303.0	304.3	304.1	304.1	304.1	304.1	304.1	304.1	309.1	309.1	309.1	310.2
Construction materials	283.0	285.7	285.5	284.4	284.6	284.1	285.2	286.6	286.9	'287.5	288.1	287.9	289.1	289.0

¹ Data for March 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication. r = revised.

24. Producer Price Indexes, by durability of product

[1967 = 100]

Commodity grouping	Annual average 1981	1981						1982						
		July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar. ¹	Apr.	May	June	July
Total durable goods	269.8	270.8	271.9	271.8	275.0	275.4	276.0	277.6	277.4	'277.4	278.1	278.4	278.4	279.1
Total nondurable goods	312.4	316.8	316.2	315.0	312.8	311.4	311.4	314.7	315.4	314.2	313.5	314.5	316.0	317.7
Total manufactures	'286.0	288.0	288.6	288.3	289.8	289.7	289.9	291.9	292.0	'291.4	290.9	291.3	292.4	293.9
Durable	269.7	270.6	271.7	271.7	275.1	275.8	276.5	278.0	277.8	'277.8	278.7	279.1	279.4	280.1
Nondurable	303.6	306.9	306.9	306.3	305.5	304.5	304.3	306.8	307.2	'305.9	303.9	304.1	306.2	308.6
Total raw or slightly processed goods	330.7	337.9	335.8	332.7	326.4	323.3	323.6	328.9	330.6	'329.7	332.2	334.9	333.6	333.3
Durable	'271.2	271.2	275.9	270.4	263.7	253.4	247.8	253.8	253.7	'250.1	245.9	239.4	225.2	225.0
Nondurable	334.0	341.8	339.1	336.3	330.0	327.4	328.2	333.4	335.2	'334.5	337.5	340.8	340.6	340.2

¹ Data for March 1982 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.

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

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981						1982						
			July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar. ¹	Apr.	May	June	July
MINING															
1011	Iron ores (12/75 = 100)	'167.6	168.1	168.1	168.1	168.1	171.3	171.3	171.3	171.3	171.3	171.3	177.1	177.1	177.1
1092	Mercury ores (12/75 = 100)	346.0	358.3	365.4	364.5	354.1	354.1	343.7	347.9	313.7	325.0	327.0	308.3	307.5	306.2
1211	Bituminous coal and lignite	'493.7	502.1	503.4	506.0	506.2	507.8	510.3	520.9	525.8	'524.9	527.2	529.4	529.8	533.5
1311	Crude petroleum and natural gas	'898.6	911.5	900.3	913.6	900.8	907.5	921.7	919.7	913.9	'905.4	894.9	902.0	915.1	925.3
1442	Construction sand and gravel	'277.4	278.4	278.2	279.2	279.7	279.8	280.7	287.4	289.9	'293.1	292.2	294.4	295.2	295.3
1455	Kaolin and ball clay (6/76 = 100)	138.7	137.1	137.1	137.1	143.4	143.4	143.4	149.6	149.6	149.6	151.7	151.7	151.7	151.7
MANUFACTURING															
2011	Meatpacking plants	243.1	252.6	250.9	252.7	244.1	237.0	234.1	237.6	244.4	'247.3	253.3	264.3	265.7	258.4
2013	Sausages and other prepared meats	'241.4	246.0	254.0	253.9	252.2	248.9	247.0	245.6	251.0	'248.6	253.4	265.9	273.7	272.2
2016	Poultry dressing plants	192.0	203.6	201.2	188.8	175.5	172.8	166.7	(²)	(²)	(²)	(²)	(²)	(²)	(²)
2021	Creamery butter	274.8	273.8	273.7	275.0	279.2	279.5	275.0	275.0	276.4	276.8	275.3	274.9	274.9	275.0

See footnotes at end of table.

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

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981						1982						
			July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar. ¹	Apr.	May	June	July
MANUFACTURING—Continued															
2022	Cheese, natural and processed (12/72 = 100)	215.7	213.8	214.5	215.0	215.4	215.9	218.4	218.6	217.9	216.7	216.6	217.1	217.9	218.6
2024	Ice cream and frozen desserts (12/72 = 100)	211.9	212.7	212.7	212.7	212.5	212.5	212.7	212.8	212.8	210.9	214.2	214.2	214.2	213.6
2033	Canned fruits and vegetables	248.5	251.6	252.9	254.3	257.0	256.4	258.9	260.8	262.6	262.4	261.5	262.3	264.6	265.5
2034	Dehydrated food products (12/73 = 100)	177.6	180.5	178.7	183.4	182.1	181.4	182.1	184.0	181.8	181.5	181.5	178.5	178.5	180.4
2041	Flour mills (12/71 = 100)	196.0	196.5	191.0	195.3	191.1	191.5	189.2	191.5	187.5	187.3	192.5	188.4	189.1	185.5
2044	Rice milling	277.2	297.4	284.3	268.2	247.3	235.4	215.1	205.9	192.2	183.5	177.9	183.0	180.3	177.6
2048	Prepared foods, n.e.c. (12/75 = 100)	124.5	125.9	124.8	119.6	117.3	116.4	116.0	116.0	115.9	114.6	115.4	116.7	115.7	115.4
2061	Raw cane sugar	273.5	272.2	254.6	212.3	219.9	224.3	230.8	247.6	245.1	233.0	242.9	269.2	286.7	311.5
2063	Beet sugar	314.3	274.1	287.5	270.7	250.3	230.4	250.5	266.4	272.2	272.2	272.6	280.2	280.2	290.3
2067	Chewing gum	309.8	303.1	303.2	303.2	303.2	303.2	303.2	303.2	303.3	303.3	303.4	303.4	303.4	303.5
2074	Cottonseed oil mills	199.0	212.0	206.0	182.3	172.0	167.2	182.4	184.9	170.5	158.1	164.6	167.9	170.2	174.6
2075	Soybean oil mills	245.8	253.7	245.8	234.2	229.7	221.2	221.9	223.1	220.4	216.6	225.0	232.0	226.4	224.1
2077	Animal and marine fats and oils	288.0	288.8	294.1	281.2	274.0	272.3	266.6	260.4	262.6	271.8	273.3	271.5	272.3	264.3
2083	Malt	282.5	286.1	286.1	275.4	275.4	275.4	275.4	267.1	267.1	267.1	259.1	259.8	259.8	259.8
2085	Distilled liquor, except brandy (12/75 = 100)	134.7	134.6	135.5	135.5	135.5	137.9	137.9	140.1	137.9	140.2	140.2	139.8	139.8	139.8
2091	Canned and cured seafoods (12/73 = 100)	187.8	187.4	188.4	188.8	188.2	188.3	188.5	187.2	187.0	187.7	188.2	188.0	188.4	187.8
2092	Fresh or frozen packaged fish	369.1	367.6	347.1	353.5	356.9	360.8	369.5	396.8	389.2	419.1	433.8	427.5	442.8	418.9
2095	Roasted coffee (12/72 = 100)	238.1	236.4	235.7	237.3	238.2	239.2	240.4	245.1	247.7	248.8	250.7	249.5	247.6	247.0
2098	Macaroni and spaghetti	252.0	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5
2111	Cigarettes	277.7	278.3	278.3	284.2	288.4	288.4	288.4	288.4	319.7	319.7	319.7	319.8	319.8	324.9
2121	Cigars	170.0	169.7	169.7	174.5	174.5	174.5	174.5	174.5	178.6	178.6	178.6	176.6	176.6	176.6
2131	Chewing and smoking tobacco	320.7	321.0	321.3	325.3	326.1	326.1	326.1	349.4	349.4	349.4	353.6	353.6	358.3	358.3
2211	Weaving mills, cotton (12/72 = 100)	232.7	234.7	237.4	236.0	233.2	228.8	227.6	227.3	227.1	226.4	226.1	227.7	226.0	222.0
2221	Weaving mills, synthetic (12/72 = 100)	136.7	138.0	139.3	139.5	139.4	139.8	139.5	139.8	139.7	140.0	139.2	138.9	138.0	137.5
2251	Women's hosiery, except socks (12/75 = 100)	113.5	115.5	115.0	115.0	115.2	115.1	115.2	115.6	115.6	116.1	116.3	117.0	117.0	117.0
2254	Knit underwear mills	210.2	210.7	210.8	210.9	210.9	212.8	213.0	225.2	225.2	225.9	235.6	226.0	228.7	230.8
2257	Circular knit fabric mills (6/76 = 100)	110.9	111.0	112.0	111.9	112.0	112.4	111.8	112.4	113.2	110.7	110.1	109.7	108.2	108.6
2261	Finishing plants, cotton (6/76 = 100)	144.9	146.3	146.2	145.4	144.9	143.5	141.4	140.5	140.3	140.8	141.6	141.4	141.3	140.2
2262	Finishing plants, synthetics, silk (6/76 = 100)	126.5	127.1	127.8	129.0	129.1	129.1	128.6	129.4	129.9	128.5	128.1	128.2	127.2	126.7
2272	Tufted carpets and rugs	154.2	158.3	157.4	157.3	155.7	157.0	156.7	155.5	155.7	155.7	156.1	156.4	156.9	156.1
2281	Yarn mills, except wool (12/71 = 100)	221.7	225.1	225.4	223.8	222.4	219.9	217.2	216.3	215.7	215.4	214.6	214.9	214.0	213.7
2282	Throwing and winding mills (6/76 = 100)	139.3	142.7	146.8	148.0	154.5	145.6	146.0	145.7	150.3	150.0	150.9	152.6	149.3	149.0
2284	Thread mills (6/76 = 100)	151.4	151.1	151.1	154.8	157.0	157.0	156.8	156.8	156.8	156.8	156.7	156.6	156.5	156.5
2298	Cordage and twine (12/77 = 100)	134.8	134.3	134.3	139.3	139.3	139.3	140.7	141.0	141.0	141.0	141.0	141.0	141.0	141.0
2311	Men's and boys' suits and coats	224.0	225.9	226.2	226.5	227.4	228.4	230.5	233.7	233.6	233.8	234.3	234.6	235.3	237.2
2321	Men's and boys' shirts and nightwear	209.5	210.5	210.6	211.5	212.4	212.6	213.4	217.3	215.9	216.9	193.1	173.6	215.7	216.0
2322	Men's and boys' underwear	230.6	230.8	230.8	230.8	230.8	233.0	233.0	246.9	246.9	247.4	247.4	247.4	251.2	251.2
2323	Men's and boys' neckwear (12/75 = 100)	114.6	113.9	113.9	113.9	113.9	113.9	113.9	113.9	113.3	117.3	117.3	117.3	121.3	121.3
2327	Men's and boys' separate trousers	186.2	186.4	186.4	186.4	186.8	186.9	187.1	188.4	188.4	188.4	193.0	194.9	195.0	195.6
2328	Men's and boys' work clothing	248.6	250.8	251.1	251.2	253.1	253.2	253.3	252.5	254.2	254.8	253.8	253.7	254.1	252.9
2331	Women's and misses' blouses and waists (6/78 = 100)	120.6	121.0	121.2	121.3	126.4	126.7	126.5	126.5	126.5	126.5	123.8	123.7	123.7	123.6
2335	Women's and misses' dresses (12/77 = 100)	121.3	123.0	124.3	123.5	123.4	124.1	122.7	123.0	123.0	123.1	122.9	122.9	123.1	123.7
2341	Women's and children's underwear (12/72 = 100)	169.7	170.6	170.6	170.6	170.6	171.6	171.6	174.7	174.8	175.0	175.7	177.2	179.4	179.4
2342	Brassieres and allied garments (12/75 = 100)	136.7	138.8	138.8	138.8	138.8	138.9	140.1	145.1	148.8	148.8	149.2	148.5	148.5	148.4
2361	Children's dresses and blouses (12/77 = 100)	120.9	121.6	121.7	121.7	122.0	122.5	123.2	123.2	123.2	123.2	121.0	121.0	121.0	119.4
2381	Fabric dress and work gloves	289.3	289.2	289.2	289.2	289.2	289.2	289.2	289.2	297.4	295.5	295.5	295.5	294.5	294.5
2394	Canvas and related products (12/77 = 100)	132.0	130.1	133.1	134.6	137.6	137.6	139.7	144.9	144.9	147.2	146.3	146.5	143.8	143.8
2396	Automotive and apparel trimmings (12/77 = 100)	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0
2421	Sawmills and planing mills (12/71 = 100)	228.2	233.5	231.2	225.2	219.5	216.5	218.6	218.0	216.9	216.9	218.4	216.8	219.7	221.6
2436	Softwood veneer and plywood (12/75 = 100)	142.0	143.8	139.6	135.4	129.3	129.0	134.5	132.5	130.5	131.8	129.2	126.0	133.3	129.6
2439	Structural wood members, n.e.c. (12/75 = 100)	156.6	157.6	156.9	156.6	154.8	154.2	153.2	153.9	153.5	152.6	152.9	151.5	152.9	154.5
2448	Wood pallets and skids (12/75 = 100)	152.5	153.1	152.9	152.8	152.0	150.4	149.9	149.8	149.0	148.2	145.8	144.6	144.2	144.1
2451	Mobile homes (12/74 = 100)	156.9	158.1	158.3	158.7	159.2	159.3	160.3	160.4	160.5	162.7	162.9	163.1	163.4	163.4
2492	Particleboard (12/75 = 100)	173.6	179.6	173.6	170.5	168.0	166.9	170.3	172.6	170.7	177.7	176.8	176.7	176.9	175.4
2511	Wood household furniture (12/71 = 100)	197.4	198.6	199.2	200.1	201.0	202.0	202.8	203.6	204.3	205.1	207.0	207.3	207.6	208.1
2512	Upholstered household furniture (12/71 = 100)	174.0	175.1	175.1	175.3	175.6	179.5	182.1	184.4	179.3	179.3	184.6	185.1	185.1	184.1
2515	Mattresses and bedsprings	192.3	191.3	194.6	195.2	195.2	197.5	198.0	204.4	205.6	205.6	210.1	210.3	210.3	210.1
2521	Wood office furniture	254.2	254.7	254.7	257.1	257.1	257.0	257.6	261.9	270.7	270.8	271.9	271.9	271.9	272.0
2611	Pulp mills (12/73 = 100)	252.4	251.3	251.3	251.3	255.0	262.5	262.5	258.6	258.6	260.7	255.8	254.8	246.5	238.5
2621	Paper mills, except building (12/74 = 100)	156.2	157.0	157.4	158.8	159.8	159.7	159.6	162.0	162.0	162.0	161.8	160.5	160.8	160.7
2631	Paperboard mills (12/74 = 100)	151.7	151.7	152.4	153.7	153.6	153.5	152.7	152.5	153.4	153.0	153.0	151.5	150.0	149.1
2647	Sanitary paper products	343.4	344.2	344.3	344.3	344.0	344.1	344.6	344.6	344.6	344.5	345.5	344.7	347.3	346.4
2654	Sanitary food containers	244.8	246.0	252.9	253.2	253.4	253.3	254.0	256.9	260.6	261.4	261.4	261.4	261.4	261.4
2655	Fiber cans, drums, and similar products (12/75 = 100)	163.0	163.2	163.2	163.2	167.6	167.6	170.0	176.4	176.5	176.5	176.5			

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

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981						1982						
			July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar. ¹	Apr.	May	June	July
3021	Rubber and plastic footwear (12/71 = 100)	184.4	185.0	185.4	185.3	185.0	185.0	185.2	186.1	188.4	189.1	189.0	186.7	187.0	187.0
3031	Reclaimed rubber (12/73 = 100)	194.1	192.9	200.3	200.3	200.3	200.3	200.3	200.3	200.4	207.2	206.9	207.2	208.4	207.7
3079	Miscellaneous plastic products (6/78 = 100)	128.9	129.2	130.2	130.3	130.8	130.8	131.0	131.1	131.6	132.8	132.9	132.7	132.9	132.6
3111	Leather tanning and finishing (12/77 = 100)	150.7	151.3	148.5	148.3	148.2	146.8	147.5	150.8	149.3	147.9	147.5	147.3	146.9	147.5
3143	Men's footwear, except athletic (12/75 = 100)	169.3	170.7	171.4	170.9	170.5	170.6	171.3	173.1	172.2	173.5	174.9	175.1	175.2	171.6
3144	Women's footwear, except athletic	217.1	218.9	217.8	218.2	217.5	212.7	212.4	208.5	209.8	210.3	215.6	213.4	215.2	216.3
3171	Women's handbags and purses (12/75 = 100)	155.5	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.5
3211	Flat glass (12/71 = 100)	175.3	180.0	180.0	180.0	180.1	180.1	177.4	177.5	177.5	177.5	177.5	177.5	177.5	187.7
3221	Glass containers	328.6	335.4	335.4	335.4	335.4	335.4	335.4	335.3	352.1	355.8	357.3	357.3	357.3	357.3
3241	Cement, hydraulic	329.6	331.6	331.6	332.0	330.3	330.3	330.3	339.6	341.5	341.5	337.9	338.6	338.7	337.8
3251	Brick and structural clay tile	296.5	298.9	298.9	299.9	299.9	300.5	300.5	298.9	299.4	299.4	295.9	305.8	306.4	307.2
3253	Ceramic wall and floor tile (12/75 = 100)	133.4	132.1	132.1	140.4	140.4	140.4	140.4	140.4	140.4	140.4	137.1	138.0	138.0	138.0
3255	Clay refractories	310.2	312.3	312.3	312.5	313.9	315.2	319.9	329.6	354.4	355.6	357.0	357.2	357.1	357.2
3259	Structural clay products, n.e.c.	222.6	223.9	223.9	227.5	231.7	231.7	236.6	225.6	226.0	225.9	202.4	216.4	216.5	216.4
3261	Vitreous plumbing fixtures	254.9	258.7	258.6	259.0	259.0	259.3	260.1	261.1	260.6	260.8	261.9	265.4	265.5	264.2
3262	Vitreous china food utensils	335.0	336.6	336.6	336.8	336.8	344.7	344.7	347.7	347.7	347.3	336.2	345.2	349.8	349.8
3263	Fine earthenware food utensils	309.1	309.6	309.6	313.8	313.8	315.0	315.0	315.1	315.1	315.0	312.8	314.1	314.8	314.8
3269	Pottery products, n.e.c. (12/75 = 100)	160.1	160.7	160.7	161.8	161.8	163.7	163.7	164.3	164.3	164.2	161.4	163.6	164.8	164.7
3271	Concrete block and brick	270.4	271.2	274.0	274.2	274.3	274.2	275.1	274.9	276.4	276.4	276.6	277.0	277.1	277.1
3273	Ready-mixed concrete	298.7	300.7	300.0	299.2	299.5	299.4	299.6	301.9	301.9	302.5	303.3	303.9	304.7	305.4
3274	Lime (12/75 = 100)	172.5	173.1	173.9	173.7	173.7	173.5	173.8	178.8	183.7	185.7	186.6	188.1	188.4	188.1
3275	Gypsum products	256.9	261.8	258.9	252.9	251.5	252.5	250.6	250.9	253.9	260.5	262.2	258.8	256.2	256.5
3291	Abrasive products (12/71 = 100)	232.9	235.0	235.1	237.3	237.6	241.0	241.0	241.3	248.3	249.8	248.9	251.2	252.1	252.0
3297	Nonclay refractories (12/74 = 100)	185.3	189.7	189.7	189.7	189.7	190.2	190.3	191.2	198.3	200.4	202.4	203.2	203.9	203.8
3312	Blast furnaces and steel mills	342.8	350.1	350.0	350.3	353.1	353.0	353.3	354.7	354.4	354.4	356.1	355.9	353.6	352.9
3313	Electrometallurgical products (12/75 = 100)	121.8	121.2	121.5	121.4	125.4	125.4	125.3	125.3	123.4	120.3	120.3	120.3	120.4	120.4
3316	Cold finishing of steel shapes	316.2	325.0	325.7	326.2	326.4	326.4	326.7	327.0	327.0	327.0	327.6	327.8	325.6	325.2
3317	Steel pipes and tubes	341.5	348.2	350.6	350.5	362.0	362.3	363.0	363.7	364.1	365.8	365.8	365.8	365.7	364.0
3321	Gray iron foundries (12/68 = 100)	299.7	298.8	299.9	302.0	303.3	305.2	306.1	307.9	310.0	311.5	310.4	311.4	311.6	311.3
3333	Primary zinc	326.3	335.4	353.8	355.9	337.0	337.5	315.7	308.6	311.2	292.0	273.4	259.9	259.7	266.4
3334	Primary aluminum	333.1	334.2	334.4	333.6	333.5	332.5	332.8	324.1	320.2	320.8	316.5	313.8	308.4	305.7
3351	Copper rolling and drawing	212.3	209.4	212.9	214.1	212.3	209.2	207.1	204.8	203.9	198.4	196.6	197.5	189.8	189.2
3353	Aluminum sheet, plate, and foil (12/75 = 100)	175.8	177.3	177.4	178.0	179.9	180.2	180.8	181.8	181.7	181.2	180.1	178.7	178.0	178.2
3354	Aluminum extruded products (12/75 = 100)	180.1	181.2	181.3	181.2	181.3	181.4	181.1	180.8	180.8	180.5	179.9	180.2	180.1	179.5
3355	Aluminum rolling, drawing, n.e.c. (12/75 = 100)	159.1	157.2	157.2	157.7	163.0	166.2	166.1	166.1	166.5	166.3	162.9	163.0	165.4	164.7
3411	Metal cans	305.1	305.5	306.7	306.8	307.0	306.0	304.9	310.8	314.0	313.6	319.6	320.4	319.3	318.6
3425	Hand saws and saw blades (12/72 = 100)	201.4	204.1	204.2	204.6	204.8	205.0	206.0	211.6	214.8	214.9	214.9	220.8	220.9	221.0
3431	Metal sanitary ware	265.5	269.2	269.7	270.2	270.3	271.6	271.8	271.3	272.8	275.1	275.8	275.7	276.0	276.1
3465	Automotive stampings (12/75 = 100)	146.0	146.2	146.4	146.9	147.4	149.7	149.1	150.1	144.7	144.2	152.7	153.0	153.0	153.0
3482	Small arms ammunition (12/75 = 100)	159.0	157.8	159.9	159.9	159.9	159.9	163.9	167.5	167.5	167.5	171.9	171.9	175.9	175.9
3493	Steel springs, except wire	245.9	243.7	248.9	252.4	253.9	254.1	256.1	255.8	257.4	256.4	256.0	255.2	255.2	253.1
3494	Valves and pipe fittings (12/71 = 100)	248.9	250.0	251.0	252.7	252.9	253.5	255.7	257.7	258.9	259.1	258.6	259.2	259.0	260.1
3498	Fabricated pipe and fittings	361.3	364.6	370.0	375.1	377.7	378.6	379.3	378.6	377.7	379.8	385.5	385.4	385.4	383.8
3519	Internal combustion engines, n.e.c.	311.9	312.0	314.2	322.1	323.2	326.4	325.4	329.4	332.0	332.6	332.6	337.0	337.7	339.6
3531	Construction machinery (12/76 = 100)	158.8	159.0	159.5	160.1	161.0	161.6	159.7	162.5	162.4	163.3	164.1	165.2	165.3	166.5
3532	Mining machinery (12/77 = 100)	282.5	282.7	285.3	286.9	288.5	290.8	292.9	295.5	297.8	300.9	301.4	302.7	303.5	304.0
3533	Oilfield machinery and equipment	395.8	401.3	406.5	411.3	415.6	418.2	420.3	427.2	429.2	435.8	436.2	435.8	437.8	438.4
3534	Elevators and moving stairways	253.9	252.1	252.6	254.6	257.0	260.7	265.6	264.3	269.8	271.6	270.8	271.6	273.5	275.5
3542	Machine tools, metal forming types (12/71 = 100)	306.9	307.6	309.5	312.0	311.7	312.3	319.3	319.7	322.8	324.5	325.5	325.6	326.5	333.6
3546	Power driven hand tools (12/76 = 100)	147.3	148.2	148.4	148.6	149.5	149.5	150.0	153.3	153.2	153.9	154.0	156.1	156.4	157.4
3552	Textile machinery (12/69 = 100)	243.5	246.2	245.4	248.2	248.0	247.9	249.9	252.3	253.5	255.0	256.2	256.5	258.1	259.8
3553	Woodworking machinery (12/72 = 100)	225.0	224.0	225.4	228.9	228.9	229.1	229.1	233.7	232.9	233.4	235.0	234.7	234.4	230.0
3576	Scales and balances, excluding laboratory	226.2	226.6	226.6	226.1	226.2	226.3	226.5	228.3	228.8	229.8	229.6	229.5	230.6	231.9
3592	Carburetors, pistons, rings, valves (6/76 = 100)	178.0	180.8	181.3	182.1	185.4	187.2	187.3	185.3	189.6	190.4	192.6	195.2	195.7	196.6
3612	Transformers	209.9	210.7	212.8	214.5	217.3	222.0	222.0	220.5	222.2	222.4	223.2	224.7	224.8	224.7
3623	Welding apparatus, electric (12/72 = 100)	227.5	228.3	229.6	231.6	232.5	233.2	235.8	236.8	236.9	232.3	232.9	232.9	233.1	236.9
3631	Household cooking equipment (12/75 = 100)	141.2	140.5	141.5	141.6	141.6	141.9	142.6	146.0	146.8	147.2	146.2	146.8	146.9	148.2
3632	Household refrigerators, freezers (6/76 = 100)	132.8	135.5	135.5	136.4	137.8	137.9	137.9	140.1	141.1	142.3	142.5	143.2	144.3	145.1
3633	Household laundry equipment (12/73 = 100)	174.3	174.1	174.6	177.2	177.0	178.4	178.8	180.1	180.5	186.2	186.9	188.6	189.0	189.5
3635	Household vacuum cleaners	159.1	158.6	158.8	158.8	161.3	161.0	160.8	165.6	165.2	165.7	158.2	158.3	158.4	158.4
3636	Sewing machines (12/75 = 100)	146.8	153.8	153.8	153.8	156.0	156.0	156.0	156.0	155.8	155.8	153.7	153.7	153.7	153.7
3641	Electric lamps	277.3	275.2	280.0	283.1	285.9	284.8	281.3	282.1	286.1	283.6	290.7	294.5	293.9	291.9
3644	Noncurrent-carrying wiring devices (12/72 = 100)	249.6	253.3	253.8	258.5	258.7	262.1	262.1	257.9	259.0	261.1	259.5	263.0	261.1	260.7
3646	Commercial lighting fixtures (12/75 = 100)	154.8	154.4	155.5	157.6	158.9	159.3	159.2	159.2	161.1	162.4	163.6	167.5	167.2	166.5

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 26 through 29, 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 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 1982 issue of the *Review*, all of the productivity and cost measures contained in these tables are based on revised output and compensation measures released by the Bureau of Economic Analysis in July as part of the regular revision cycle of the National Income and Product Accounts. Measures of labor input have been revised to reflect results of the 1980 census, and seasonal factors have been recomputed for use in the preparation of quarterly measures. The word "private" will no longer be used as part of the series title of one of the two business sector measures prepared by BLS; no change has been made in the definition or content of the measures as a result of this change.

26. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years, 1950-81

[1977 = 100]

Item	1950 ^r	1955 ^r	1960 ^r	1965 ^r	1970 ^r	1974 ^r	1975 ^r	1976 ^r	1977 ^r	1978 ^r	1979 ^r	1980 ^r	1981 ^r
Business sector:													
Output per hour of all persons	50.4	58.3	65.2	78.3	86.2	89.8	91.8	97.6	100.0	100.6	99.6	98.9	100.7
Compensation per hour	20.0	26.4	33.9	41.7	58.2	78.0	85.5	92.9	100.0	108.6	119.1	131.4	144.1
Real compensation per hour	50.5	59.6	69.5	80.1	90.8	95.9	96.3	98.9	100.0	100.9	99.4	96.7	96.0
Unit labor cost	39.7	45.2	52.0	53.3	67.5	86.9	93.2	95.1	100.0	108.0	119.5	132.9	143.1
Unit nonlabor payments	43.4	47.6	50.6	57.6	63.2	80.9	93.1	94.0	100.0	106.7	112.8	119.3	135.2
Implicit price deflator	41.0	46.0	51.6	54.7	66.0	84.8	93.2	94.7	100.0	107.5	117.2	128.3	140.0
Nonfarm business sector:													
Output per hour of all persons	56.3	62.8	68.3	80.5	86.8	90.1	91.9	97.8	100.0	100.6	99.3	98.5	99.9
Compensation per hour	21.8	28.3	35.7	42.8	58.7	78.5	86.0	93.0	100.0	108.6	118.8	130.9	143.6
Real compensation per hour	55.0	64.0	73.0	82.2	91.5	96.4	96.8	99.0	100.0	100.9	99.2	96.3	95.7
Unit labor cost	38.8	45.0	52.2	53.2	67.6	87.1	93.6	95.1	100.0	108.0	119.6	133.0	143.8
Unit nonlabor payments	42.7	47.8	50.4	58.0	63.7	78.2	91.3	93.5	100.0	105.3	110.3	119.1	134.8
Implicit price deflator	40.1	46.0	51.6	54.8	66.3	84.1	92.8	94.6	100.0	107.1	116.5	128.3	140.8
Nonfinancial corporations:													
Output per hour of all employees	(¹)	(¹)	66.6	80.2	85.7	91.7	94.8	97.8	100.0	101.0	101.2	100.8	102.7
Compensation per hour	(¹)	(¹)	36.2	43.0	58.3	77.6	85.5	92.5	100.0	108.6	119.2	131.6	144.4
Real compensation per hour	(¹)	(¹)	74.2	82.5	90.9	95.4	96.2	98.5	100.0	100.8	99.5	96.8	96.2
Unit labor cost	(¹)	(¹)	54.4	53.5	68.0	84.7	90.2	94.6	100.0	107.5	117.8	130.5	140.6
Unit nonlabor payments	(¹)	(¹)	54.6	60.8	63.1	75.6	90.8	95.0	100.0	104.2	106.9	117.7	134.8
Implicit price deflator	(¹)	(¹)	54.5	56.1	66.3	81.6	90.4	94.7	100.0	106.4	114.1	126.1	138.6
Manufacturing:													
Output per hour of all persons	49.4	56.4	60.0	74.5	79.1	90.8	93.4	97.5	100.0	100.9	101.5	101.7	104.5
Compensation per hour	21.5	28.8	36.7	42.8	57.6	76.3	85.4	92.3	100.0	108.3	118.9	132.8	146.4
Real compensation per hour	54.0	65.1	75.1	82.3	89.8	93.8	96.2	98.3	100.0	100.6	99.2	97.7	97.5
Unit labor cost	43.4	51.0	61.1	57.5	72.7	84.1	91.5	94.6	100.0	107.4	117.1	130.6	140.0
Unit nonlabor payments	54.3	58.5	61.1	69.3	65.0	69.3	87.3	93.7	100.0	102.5	99.9	97.1	108.8
Implicit price deflator	46.6	53.2	61.1	61.0	70.5	79.8	90.3	94.4	100.0	106.0	112.0	120.8	130.8

¹ Not available.
r = revised.

Note: For explanation of revisions, see "Notes on the data."

27. Annual changes in productivity, hourly compensation, unit costs, and prices, 1971-81

Item	Year											Annual rate of change	
	1971 ^r	1972 ^r	1973 ^r	1974 ^r	1975 ^r	1976 ^r	1977 ^r	1978 ^r	1979 ^r	1980 ^r	1981 ^r	1950-81 ^r	1960-81 ^r
Business sector:													
Output per hour of all persons	3.6	3.5	-0.2	-2.6	2.2	6.4	2.4	0.6	-0.9	-0.7	1.8	2.4	2.1
Compensation per hour	6.6	6.5	8.0	9.4	9.6	8.6	7.7	8.6	9.7	10.4	9.6	6.2	7.2
Real compensation per hour	2.2	3.1	1.6	-1.4	0.5	2.6	1.2	0.9	-1.4	-2.8	-0.7	2.3	1.7
Unit labor cost	2.9	2.9	8.2	12.3	7.3	2.0	5.1	8.0	10.7	11.2	7.7	3.6	5.0
Unit nonlabor payments	7.6	4.5	8.8	4.6	15.1	1.0	6.4	6.7	5.7	5.8	13.3	3.4	4.6
Implicit price deflator	4.4	3.4	8.4	9.7	9.8	1.7	5.6	7.5	9.0	9.4	9.5	3.5	4.9
Nonfarm business sector:													
Output per hour of all persons	3.3	3.7	-0.4	-2.7	1.9	6.5	2.2	0.6	-1.3	-0.9	1.4	2.1	1.8
Compensation per hour	6.6	6.7	7.6	9.4	9.6	8.1	7.5	8.6	9.3	10.2	9.7	5.9	7.0
Real compensation per hour	2.2	3.3	1.3	-1.4	0.4	2.2	1.0	0.9	-1.7	-2.9	-0.7	2.0	1.5
Unit labor cost	3.2	2.9	8.0	12.5	7.5	1.6	5.2	8.0	10.7	11.2	8.1	3.7	5.0
Unit nonlabor payments	7.4	3.2	4.2	6.2	16.8	2.5	6.9	5.3	4.7	8.0	13.1	3.3	4.5
Implicit price deflator	4.5	3.0	6.7	10.4	10.4	1.9	5.7	7.1	8.8	10.2	9.7	3.6	4.9
Nonfinancial corporations:													
Output per hour of all employees	4.8	3.0	2.6	-3.4	3.4	3.2	2.3	1.0	0.2	-0.3	1.8	(¹)	2.0
Compensation per hour	6.5	5.8	7.7	9.7	10.1	8.2	8.1	8.6	9.8	10.4	9.7	(¹)	6.9
Real compensation per hour	2.1	2.5	1.4	-1.1	0.9	2.3	1.6	0.8	-1.3	-2.8	-0.6	(¹)	1.4
Unit labor cost	1.6	2.8	4.9	13.6	6.5	4.9	5.7	7.5	9.6	10.7	7.8	(¹)	4.8
Unit nonlabor payments	7.4	2.7	1.5	7.1	20.1	4.6	5.3	4.2	2.6	10.1	14.6	(¹)	4.0
Implicit price deflator	3.5	2.8	3.8	11.4	10.9	4.8	5.6	6.4	7.2	10.5	10.0	(¹)	4.5
Manufacturing:													
Output per hour of all persons	6.1	5.0	5.4	-2.4	2.9	4.4	2.5	0.9	0.7	0.2	2.8	2.6	2.6
Compensation per hour	6.1	5.4	7.2	10.6	11.9	8.0	8.3	8.3	9.7	11.8	10.2	5.8	6.9
Real compensation per hour	1.8	2.0	0.9	-0.3	2.5	2.1	1.8	0.6	-1.4	-1.6	-0.2	2.0	1.4
Unit labor cost	0.0	0.3	1.7	13.3	8.8	3.4	5.7	7.4	9.0	11.6	7.2	3.1	4.1
Unit nonlabor payments	11.2	0.8	-3.3	-1.8	25.9	7.4	6.7	2.5	-2.6	-2.7	12.0	2.3	3.0
Implicit price deflator	3.1	0.5	0.3	9.0	13.1	4.6	6.0	6.0	5.7	7.8	8.4	2.8	3.8

¹ Not available.
r = revised.

NOTE: For explanation of revisions, see "Notes on the data."

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

[1977=100]

Item	Annual average		Quarterly indexes										
			1979 ^r				1980 ^r				1981 ^r		1982 ^r
	1980 ^r	1981 ^r	IV	I	II	III	IV	I	II	III	IV	I	II
Business sector:													
Output per hour of all persons	98.9	100.7	99.1	99.3	98.2	98.9	99.3	100.7	100.7	101.0	100.2	100.0	100.7
Compensation per hour	131.4	144.1	123.0	126.7	130.0	133.1	136.1	140.0	142.5	145.6	148.2	150.9	153.4
Real compensation per hour	96.7	96.0	97.8	97.0	96.4	96.9	96.2	96.2	96.4	95.7	95.6	96.5	97.1
Unit labor cost	132.9	143.1	124.1	127.6	132.2	134.7	137.0	139.0	141.5	144.2	147.9	150.9	152.4
Unit nonlabor payments	119.3	135.2	113.2	116.0	116.2	120.6	124.6	131.8	133.4	137.4	138.3	136.4	138.9
Implicit price deflator	128.3	140.4	120.4	123.7	126.9	129.9	132.8	136.5	138.8	141.9	144.6	146.0	147.8
Nonfarm business sector:													
Output per hour of all persons	98.5	99.9	98.8	98.7	97.6	98.4	99.2	100.4	100.0	100.0	99.1	99.2	99.8
Compensation per hour	130.9	143.6	122.7	126.2	129.3	132.6	135.7	139.5	142.0	145.1	147.7	150.4	152.7
Real compensation per hour	96.3	95.7	97.6	96.6	96.0	96.5	95.9	96.0	96.0	95.4	95.3	96.3	96.6
Unit labor cost	133.0	143.8	124.1	127.8	132.5	134.7	136.8	139.0	141.9	145.1	149.0	151.6	153.0
Unit nonlabor payments	119.1	134.8	111.3	115.2	116.7	120.3	124.4	131.5	132.8	136.7	138.4	136.7	139.3
Implicit price deflator	128.3	140.8	119.8	123.6	127.2	129.9	132.7	136.5	138.9	142.3	145.5	146.6	148.4
Nonfinancial corporations:													
Output per hour of all employees	100.8	102.7	100.6	100.8	99.8	101.1	101.7	102.8	102.7	102.8	102.2	102.3	(¹)
Compensation per hour	131.6	144.4	123.1	126.8	130.0	133.4	136.3	140.4	142.7	145.7	148.6	151.7	(¹)
Real compensation per hour	96.8	96.2	97.9	97.0	96.4	97.1	96.3	96.5	96.5	95.8	95.9	97.1	(¹)
Total unit costs	131.0	143.4	121.4	125.0	130.4	132.9	135.8	138.3	141.7	144.7	149.1	151.8	(¹)
Unit labor cost	130.5	140.6	122.4	125.8	130.2	131.9	134.1	136.5	138.9	141.7	145.4	148.3	(¹)
Unit nonlabor costs	132.5	151.4	118.7	122.7	131.0	135.7	140.7	143.4	149.6	153.1	159.6	161.8	(¹)
Unit profits	87.9	101.6	84.1	91.1	81.9	87.8	90.5	104.7	98.8	105.2	97.6	86.1	(¹)
Implicit price deflator	126.1	138.6	117.1	121.1	124.8	127.7	130.6	134.5	136.8	140.2	143.2	144.3	(¹)
Manufacturing:													
Output per hour of all persons	101.7	104.5	101.9	102.6	100.4	100.3	103.6	105.2	105.0	105.0	102.8	102.1	102.3
Compensation per hour	132.8	146.4	122.6	127.1	130.9	135.2	138.4	142.6	144.9	147.3	150.7	154.7	157.5
Real compensation per hour	97.7	97.5	97.4	97.3	97.1	98.5	97.8	98.0	97.9	96.8	97.2	99.0	99.7
Unit labor cost	130.6	140.0	120.3	123.9	130.3	134.9	133.6	135.5	138.0	140.3	146.6	151.5	154.0

¹ Not available.
r = revised.

NOTE: For explanation of revisions, see "Notes on the data."

29. 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					
	IV 1980 to I 1981 ^r	I 1981 to II 1981 ^r	II 1981 to III 1981 ^r	III 1981 to IV 1981 ^r	IV 1981 to I 1982 ^r	I 1982 to II 1982 ^r	I 1980 to I 1981 ^r	II 1980 to II 1981 ^r	III 1980 to III 1981 ^r	IV 1980 to IV 1981 ^r	I 1981 to I 1982 ^r	II 1981 to II 1982 ^r
Business sector:												
Output per hour of all persons	5.6	0.0	1.1	-2.9	-1.0	2.8	1.4	2.5	2.2	0.9	-0.7	0.0
Compensation per hour	11.7	7.5	9.0	7.4	7.3	7.0	10.5	9.7	9.4	8.9	7.8	7.7
Real compensation per hour	0.2	0.5	-2.6	-0.4	3.9	2.3	-0.7	-0.1	-1.3	-0.6	0.3	0.8
Unit labor costs	5.7	7.5	7.8	10.6	8.4	4.1	8.9	6.9	7.1	7.9	8.6	7.7
Unit nonlabor payments	25.0	4.9	12.5	2.9	-5.4	7.5	13.7	14.8	13.9	11.0	3.5	4.2
Implicit price deflator	11.6	6.6	9.3	8.0	3.8	5.2	10.4	9.4	9.2	8.9	6.9	6.5
Nonfarm business sector:												
Output per hour of all persons	4.9	-1.3	-0.3	-3.5	0.6	2.2	1.7	2.5	1.6	-0.1	-1.1	-0.3
Compensation per hour	11.8	7.1	9.0	7.3	7.7	6.1	10.6	9.8	9.4	8.8	7.8	7.5
Real compensation per hour	0.4	0.1	-2.6	-0.5	4.3	1.5	-0.6	0.0	-1.2	-0.6	0.3	0.7
Unit labor costs	6.6	8.6	9.3	11.2	7.1	3.8	8.8	7.1	7.7	8.9	9.0	7.8
Unit nonlabor payments	24.9	4.0	12.1	5.1	-4.6	7.8	14.1	13.8	13.6	11.2	4.0	4.9
Implicit price deflator	12.1	7.1	10.2	9.2	3.3	5.0	10.4	9.2	9.6	9.6	7.4	6.9
Nonfinancial corporations:												
Output per hour of all employees	4.7	-0.4	0.3	-2.3	0.5	(¹)	2.1	2.9	1.7	0.6	-0.5	(¹)
Compensation per hour	12.4	6.9	8.5	8.3	8.6	(¹)	10.7	9.8	9.2	9.0	8.1	(¹)
Real compensation per hour	0.9	-0.1	-3.0	0.5	5.2	(¹)	-0.5	0.1	-1.4	-0.5	0.6	(¹)
Total unit costs	7.5	10.2	8.6	12.8	7.4	(¹)	10.6	8.7	8.9	9.8	9.7	(¹)
Unit labor costs	7.4	7.3	8.2	10.9	8.1	(¹)	8.5	6.7	7.5	8.4	8.6	(¹)
Unit nonlabor costs	8.0	18.5	9.8	17.8	5.7	(¹)	16.9	14.2	12.9	13.4	12.8	(¹)
Unit profits	79.5	-20.8	28.4	-25.9	-39.4	(¹)	14.9	20.7	19.7	7.9	-17.8	(¹)
Implicit price deflator	12.3	7.1	10.2	8.9	3.0	(¹)	11.0	9.6	9.7	9.6	7.3	(¹)
Manufacturing:												
Output per hour of all persons	6.3	-0.7	-0.1	-8.2	-2.6	0.9	2.6	4.5	4.7	-0.8	-3.0	-2.6
Compensation per hour	12.7	6.6	6.8	9.6	11.1	7.6	12.2	10.7	8.9	8.9	8.5	8.8
Real compensation per hour	1.2	-0.4	-4.6	1.6	7.6	2.9	0.8	0.9	-1.7	-0.6	1.0	1.8
Unit labor costs	6.0	7.3	6.8	19.4	14.1	6.7	9.3	5.9	4.0	9.8	11.8	11.6

¹ Not available.
r=revised

NOTE: For explanation of revisions, see "Notes on the data."

WAGE AND COMPENSATION DATA

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

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

Definitions

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

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

Data on negotiated wage changes apply to private nonfarm industry collective bargaining agreements covering 1,000 workers or more. Data on compensation changes apply only to those agreements covering 5,000 workers or more. *First-year* wage or compensation changes refer to average negotiated changes for workers covered by settlements reached in the period and implemented within the first 12 months after the effective date of the agreement. *Changes over the life*

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

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

Notes on the data

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

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

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

For a more detailed discussion of the ECI, see chapter 25, "The Employment Cost Index," of the BLS *Handbook of Methods* (Bulletin 1910), and the *Monthly Labor Review* articles: "Employment Cost Index: a measure of change in the 'price of labor,'" July 1975; "How benefits will be incorporated into the Employment Cost Index," January 1978; and "The Employment Cost Index: recent trends and expansion," May 1982.

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

30. Employment Cost Index, total compensation

[June 1981 = 100]

Series	1980				1981				1982	Percent change	
	March	June	Sept.	Dec.	March	June	Sept.	Dec.	March	3 months ended	12 months ended
										March 1982	
Civilian nonfarm workers¹	—	—	—	—	—	100.0	102.6	104.5	106.3	1.7	—
Workers, by occupational group											
White-collar workers	—	—	—	—	—	100.0	102.7	104.9	106.5	1.5	—
Blue-collar workers	—	—	—	—	—	100.0	102.3	104.1	105.7	1.5	—
Service workers	—	—	—	—	—	100.0	102.8	104.2	107.2	2.9	—
Workers, by industry division											
Manufacturing	—	—	—	—	—	100.0	102.1	104.0	106.0	1.9	—
Nonmanufacturing	—	—	—	—	—	100.0	102.8	104.8	106.4	1.5	—
Services	—	—	—	—	—	100.0	104.4	107.1	108.2	1.0	—
Public administration ²	—	—	—	—	—	100.0	104.3	106.0	108.1	2.0	—
Private nonfarm workers	88.6	90.7	92.8	94.7	98.1	100.0	102.0	104.0	105.8	1.7	7.8
Workers, by occupational group											
White-collar workers	88.7	90.8	92.6	94.5	98.3	100.0	101.8	104.0	105.8	1.7	7.6
Blue-collar workers	88.3	90.5	93.0	94.9	97.8	100.0	102.2	104.0	105.6	1.5	8.0
Service workers	89.9	90.8	92.7	94.3	99.3	100.0	101.9	103.1	106.7	3.5	7.5
Workers, by industry division											
Manufacturing	88.7	90.5	92.6	94.7	98.0	100.0	102.1	104.0	106.0	1.9	8.2
Nonmanufacturing	88.6	90.8	92.9	94.7	98.2	100.0	102.0	103.9	105.7	1.7	7.6
State and local government workers	—	—	—	—	—	100.0	105.3	107.4	108.8	1.3	—
Workers, by occupational group											
White-collar workers	—	—	—	—	—	100.0	105.7	107.8	109.1	1.2	—
Blue-collar workers	—	—	—	—	—	100.0	104.2	105.9	108.2	2.2	—
Workers, by industry division											
Services	—	—	—	—	—	100.0	105.8	107.9	109.0	1.0	—
Schools	—	—	—	—	—	100.0	106.0	107.9	108.9	.9	—
Elementary and secondary	—	—	—	—	—	100.0	106.3	108.3	109.3	.9	—
Hospitals and other services ³	—	—	—	—	—	100.0	105.0	107.8	109.5	1.6	—
Public administration ²	—	—	—	—	—	100.0	104.3	106.0	108.1	2.0	—

¹Excludes private household and Federal workers.

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

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

NOTE: Dashes indicate data not available.

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

[June 1981=100]

Series	1980				1981				1982	Percent change	
	March	June	Sept.	Dec.	March	June	Sept.	Dec.	March	3 months ended	12 months ended
										March 1982	
Civilian nonfarm workers¹	—	—	—	—	—	100.0	102.5	104.4	106.3	1.8	—
Workers, by occupational group											
White-collar workers	—	—	—	—	—	100.0	102.6	104.7	106.7	1.9	—
Blue-collar workers	—	—	—	—	—	100.0	102.4	104.0	105.5	1.4	—
Service workers	—	—	—	—	—	100.0	102.5	103.6	106.8	3.1	—
Workers, by industry division											
Manufacturing	—	—	—	—	—	100.0	102.1	104.0	105.9	1.8	—
Nonmanufacturing	—	—	—	—	—	100.0	102.7	104.5	106.5	1.9	—
Services	—	—	—	—	—	100.0	104.4	106.6	108.6	1.9	—
Public administration ²	—	—	—	—	—	100.0	103.8	105.5	107.5	1.9	—
All private nonfarm workers³	89.6	91.5	93.5	95.4	98.0	100.0	102.0	103.8	105.9	2.0	8.1
Workers, by occupational group											
White-collar workers	89.7	91.4	93.3	95.2	98.1	100.0	101.8	103.9	106.2	2.2	8.3
Professional and technical workers	89.2	90.8	93.2	95.3	98.2	100.0	103.3	105.5	108.0	2.4	10.0
Managers and administrators	90.6	92.0	93.5	94.7	98.6	100.0	101.6	102.8	105.8	2.9	7.3
Salesworkers	88.5	90.7	92.2	94.8	96.2	100.0	98.0	101.9	102.2	.3	6.2
Clerical workers	90.3	91.9	93.8	95.7	98.6	100.0	102.7	104.2	107.0	2.7	8.5
Blue-collar workers	89.3	91.6	93.8	95.7	97.7	100.0	102.3	103.9	105.4	1.4	7.9
Craft and kindred workers	89.3	91.4	94.0	96.1	97.8	100.0	102.9	104.3	106.2	1.8	8.6
Operatives, except transport	89.4	91.5	93.6	95.5	97.8	100.0	102.1	104.1	105.4	1.2	7.8
Transport equipment operatives	89.1	92.2	93.5	95.3	96.8	100.0	101.0	102.7	103.2	.5	6.6
Nonfarm laborers	89.6	91.8	93.9	95.7	97.5	100.0	101.5	103.3	104.1	.8	6.8
Service workers	90.8	91.9	93.4	94.8	99.2	100.0	101.8	102.7	106.7	3.9	7.6
Workers, by industry division											
Manufacturing	89.9	91.8	93.6	95.7	97.9	100.0	102.1	104.0	105.9	1.8	8.2
Durables	89.3	91.2	93.5	95.7	97.9	100.0	102.1	104.5	106.3	1.7	8.6
Nondurables	91.0	92.7	93.8	95.7	97.8	100.0	102.0	103.1	105.3	2.1	7.7
Nonmanufacturing	89.5	91.3	93.4	95.2	98.1	100.0	102.0	103.8	105.9	2.0	8.0
Construction	89.3	91.9	94.5	95.9	97.6	100.0	103.0	104.3	105.9	1.5	8.5
Transportation and public utilities	88.2	90.2	93.1	95.6	97.7	100.0	102.0	103.6	105.7	2.0	8.2
Wholesale and retail trade	90.5	92.2	93.6	95.1	98.2	100.0	101.3	102.3	103.9	1.6	5.8
Wholesale trade	89.7	92.1	93.0	95.9	98.5	100.0	102.0	103.4	106.3	2.8	7.9
Retail trade	90.8	92.2	93.8	94.8	98.1	100.0	101.0	101.9	103.0	1.1	5.0
Finance, insurance, and real estate	87.1	89.4	91.2	93.1	95.7	100.0	98.3	102.3	103.7	1.4	8.4
Services	90.5	91.9	94.2	95.7	99.6	100.0	103.6	105.8	108.8	2.8	9.2
State and local governments	—	—	—	—	—	100.0	105.0	107.0	108.2	1.1	—
Workers, by occupational group											
White-collar workers	—	—	—	—	—	100.0	105.4	107.5	108.5	.9	—
Blue-collar workers	—	—	—	—	—	100.0	103.9	105.5	107.5	1.9	—
Workers, by industry division											
Services	—	—	—	—	—	100.0	105.5	107.6	108.4	.7	—
Schools	—	—	—	—	—	100.0	105.7	107.7	108.3	.6	—
Elementary and secondary	—	—	—	—	—	100.0	106.0	107.9	108.7	.7	—
Hospitals and other services ⁴	—	—	—	—	—	100.0	104.6	107.3	108.8	1.4	—
Public administration ²	—	—	—	—	—	100.0	103.3	105.5	107.5	1.9	—

¹Excludes private household and Federal workers.

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

³Excludes private household workers.

⁴Includes, for example, library, social, and health services.

NOTE: Dashes indicate data not available.

32. Employment Cost Index, wages and salaries, private nonfarm workers, by bargaining status, region, and area size

[June 1981 = 100]

Series	1980				1981				1982	Percent change	
	March	June	Sept.	Dec.	March	June	Sept.	Dec.	March	3 months ended	12 months ended
										March 1982	
COMPENSATION											
Workers, by bargaining status ¹											
Union	87.4	89.7	92.4	94.7	97.6	100.0	102.5	104.8	106.5	1.6	9.1
Manufacturing	—	—	—	—	—	100.0	102.3	104.6	106.3	1.6	—
Nonmanufacturing	—	—	—	—	—	100.0	102.7	105.0	106.8	1.7	—
Nonunion	89.3	91.1	92.8	94.6	98.4	100.0	101.7	103.5	105.3	1.7	7.0
Manufacturing	—	—	—	—	—	100.0	101.8	103.5	105.7	2.1	—
Nonmanufacturing	—	—	—	—	—	100.0	101.7	103.5	105.2	1.6	—
Workers, by area size ¹											
Metropolitan areas	88.5	90.6	92.8	94.7	98.1	100.0	102.1	104.1	105.7	1.5	7.7
Other areas	88.8	90.3	91.9	94.2	98.1	100.0	101.8	105.2	106.2	2.9	8.3
WAGES AND SALARIES											
Workers, by bargaining status ¹											
Union	88.4	90.8	93.5	95.8	97.4	100.0	102.7	105.0	106.5	1.4	9.3
Manufacturing	88.8	91.3	93.8	96.1	97.7	100.0	102.6	104.7	105.9	1.1	8.4
Nonmanufacturing	88.0	90.4	93.1	95.5	97.1	100.0	102.8	105.2	107.0	1.7	10.2
Nonunion	90.2	91.8	93.4	95.1	98.2	100.0	101.6	103.2	105.6	2.3	7.5
Manufacturing	91.0	92.3	93.4	95.4	97.9	100.0	101.7	103.3	105.9	2.5	8.2
Nonmanufacturing	89.9	91.5	93.4	95.0	98.3	100.0	101.6	103.2	105.5	2.2	7.3
Workers, by region ¹											
Northeast	90.6	92.5	94.2	96.0	98.3	100.0	101.7	104.4	106.1	1.6	7.9
South	89.7	91.4	93.2	94.9	98.0	100.0	101.9	102.8	105.7	2.8	7.9
North Central	89.7	91.6	93.3	95.3	98.1	100.0	101.6	103.3	104.7	1.4	6.7
West	88.2	90.4	93.5	95.3	97.9	100.0	103.2	105.1	107.9	2.7	10.2
Workers, by area size ¹											
Metropolitan areas	89.4	91.4	93.5	95.4	97.9	100.0	102.1	104.0	105.9	1.8	8.2
Other areas	90.1	91.5	92.9	95.1	98.3	100.0	101.8	103.1	106.0	2.8	7.8

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

33. Wage and compensation change, major collective bargaining settlements, 1977 to date

[In percent]

Measure	Annual average					Quarterly average									
						1980			1981				1982 ^P		
	1977	1978	1979	1980	1981	II	III	IV	I	II	III	IV	I*	II	
Total compensation changes covering 5,000 workers or more, all industries:															
First year of contract	9.6	8.3	9.0	10.4	10.2	10.2	11.4	8.5	7.7	11.6	10.5	11.0	1.9	2.1	
Annual rate over life of contract	6.2	6.3	6.6	7.1	8.3	7.4	7.2	6.1	7.2	10.8	8.1	5.8	1.2	1.6	
Wage rate changes covering at least 1,000 workers, all industries:															
First year of contract	7.8	7.6	7.4	9.5	9.8	9.1	10.5	8.3	7.1	11.8	10.8	9.0	3.0	2.9	
Annual rate over life of contract	5.8	6.4	6.0	7.1	7.9	7.3	7.4	6.5	6.2	9.7	8.7	5.7	2.8	2.7	
Manufacturing:															
First year of contract	8.4	8.3	6.9	7.4	7.2	6.7	8.4	7.8	6.4	8.2	9.0	6.6	2.5	1.3	
Annual rate over life of contract	5.5	6.6	5.4	5.4	6.1	5.1	5.6	5.8	5.5	6.7	7.5	5.4	2.7	1.2	
Nonmanufacturing (excluding construction):															
First year of contract	8.0	8.0	7.6	9.5	9.8	10.3	9.5	8.2	8.0	11.8	8.6	9.6	2.6	6.5	
Annual rate over life of contract	5.9	6.5	6.2	6.6	7.3	8.5	5.9	6.8	7.3	9.1	7.2	5.6	2.1	5.7	
Construction:															
First year of contract	6.3	6.5	8.8	13.6	13.5	12.2	15.4	14.3	11.4	12.9	16.4	11.4	9.1	5.8	
Annual rate over life of contract	6.3	6.2	8.3	11.5	11.3	10.4	13.0	12.0	10.3	11.1	12.4	11.7	8.9	6.0	

r= revised.

34. Effective wage adjustments in collective bargaining units covering 1,000 workers or more, 1977 to date

Measure	Year					Year and quarter									
						1980			1981				1982 ^P		
	1977	1978	1979	1980	1981	II	III	IV	I	II	III	IV	I*	II	
Average percent adjustment (including no change):															
All industries	8.0	8.2	9.1	9.9	9.5	3.3	3.5	1.3	1.7	3.2	3.3	1.5	1.0	1.9	
Manufacturing	8.4	8.6	9.6	10.2	9.4	3.4	2.9	1.7	2.3	2.4	3.1	1.9	.9	.9	
Nonmanufacturing	7.6	7.9	8.8	9.7	9.5	3.2	4.0	1.1	1.2	3.8	3.4	1.1	1.0	2.6	
From settlements reached in period	3.0	2.0	3.0	3.6	2.5	1.0	1.7	.5	.4	1.1	.5	.4	.2	.3	
Deferred from settlements reached in earlier period	3.2	3.7	3.0	3.5	3.8	1.4	1.2	.3	.5	1.4	1.5	.4	.6	1.3	
From cost-of-living clauses	1.7	2.4	3.1	2.8	3.2	.8	.7	.6	.7	.7	1.2	.6	.3	.2	
Total number of workers receiving wage change (in thousands) ¹	—	—	—	—	8,648	—	—	—	3,855	4,701	4,364	3,225	2,955	3,359	
From settlements reached in period	—	—	—	—	2,270	—	—	—	579	909	540	604	199	407	
Deferred from settlements reached in earlier period	—	—	—	—	6,267	—	—	—	888	2,055	3,023	882	1,038	1,629	
From cost-of-living clauses	—	—	—	—	4,593	—	—	—	2,639	2,669	2,934	2,179	1,960	1,496	
Number of workers receiving no adjustments (in thousands)	—	—	—	—	145	—	—	—	4,937	4,092	4,428	5,568	5,767	5,364	

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

r= revised.

WORK STOPPAGE DATA

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

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

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

Month and year	Number of stoppages		Workers involved		Days idle	
	Beginning in month or year	In effect during month or year	Beginning in month or year (in thousands)	In effect during month (in thousands)	Number (in thousands)	Percent of estimated working time
1947	270		1,629		25,720	
1948	245		1,435		26,127	.22
1949	262		2,537		43,420	.38
1950	424		1,698		30,390	.26
1951	415		1,462		15,070	.12
1952	470		2,746		48,820	.38
1953	437		1,623		18,130	.14
1954	265		1,075		16,630	.13
1955	363		2,055		21,180	.16
1956	287		1,370		26,840	.20
1957	279		887		10,340	.07
1958	332		1,587		17,900	.13
1959	245		1,381		60,850	.43
1960	222		896		13,260	.09
1961	195		1,031		10,140	.07
1962	211		793		11,760	.08
1963	181		512		10,020	.07
1964	246		1,183		16,220	.11
1965	268		999		15,140	.10
1966	321		1,300		16,000	.10
1967	381		2,192		31,320	.18
1968	392		1,855		35,567	.20
1969	412		1,576		29,397	.16
1970	381		2,468		52,761	.29
1971	298		2,516		35,538	.19
1972	250		975		16,764	.09
1973	317		1,400		16,260	.08
1974	424		1,796		31,809	.16
1975	235		965		17,563	.09
1976	231		1,519		23,962	.12
1977	298		1,212		21,258	.10
1978	219		1,006		23,774	.11
1979	235		1,021		20,409	.09
1980	187		795		20,844	.09
1981	145		729		16,908	.07
1981: January	6	12	12.0	29.6	257.9	.01
February	7	10	10.7	20.9	118.5	.01
March	16	20	201.6	207.8	861.8	.04
April	17	27	48.0	223.5	4,085.2	.20
May	18	27	85.1	259.0	4,454.0	.24
June	30	43	200.1	415.1	2,618.3	.13
July	23	38	80.1	125.4	1,575.5	.08
1982 ^r : January	2	4	6.1	11.4	199.9	.01
February	2	6	2.5	13.9	236.9	.01
March	3	8	8.3	21.3	352.2	.02
April	9	16	35.7	55.3	480.3	.02
May	14	21	43.7	60.3	636.1	.03
June	17	25	41.4	64.5	894.0	.04
July	11	22	37.3	63.2	851.9	.04

r = revised.

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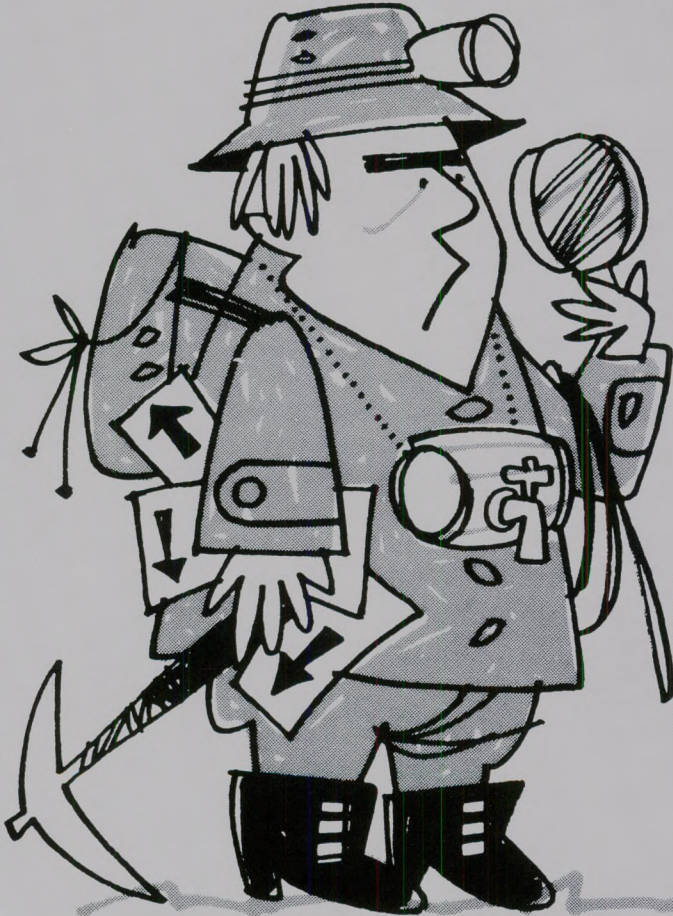
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