



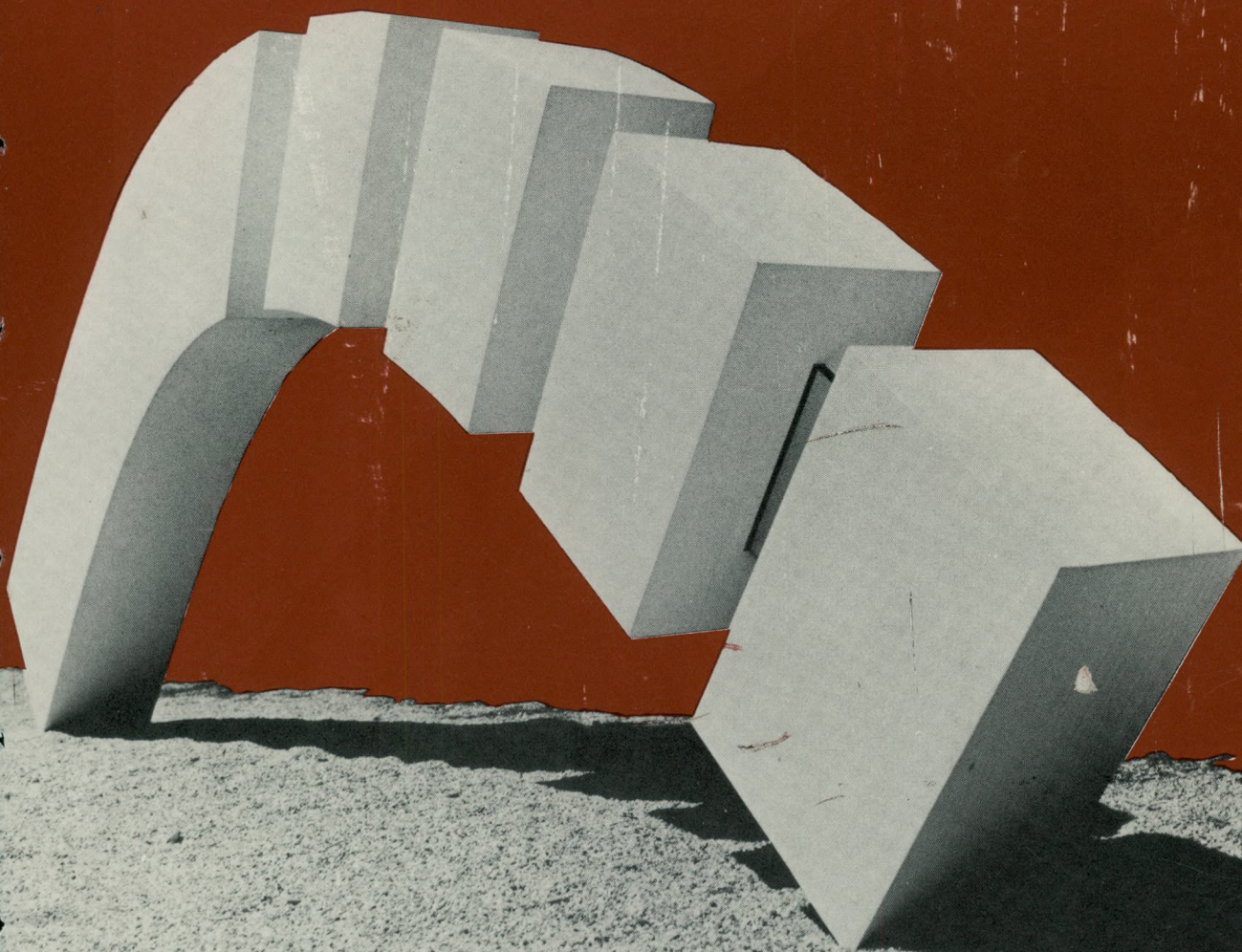
MONTHLY LABOR REVIEW

U.S. Department of Labor  
Bureau of Labor Statistics  
October 1981



*In this issue:*

Three articles on  
employment and recession





**U.S. DEPARTMENT OF LABOR**  
**Raymond J. Donovan, Secretary**

**BUREAU OF LABOR STATISTICS**  
Janet L. Norwood, *Commissioner*

The Monthly Labor Review is published by the Bureau of Labor Statistics of the U.S. Department of Labor. Communications on editorial matters should be addressed to the Editor-in-Chief, Monthly Labor Review, Bureau of Labor Statistics, Washington, D.C. 20212.  
Phone: (202) 523-1327.

Subscription price per year —  
\$21 domestic; \$26.25 foreign.  
Single copy \$3.

Subscription prices and distribution policies for the Monthly Labor Review (ISSN 0098-0818) and other Government publications are set by the Government Printing Office, an agency of the U.S. Congress. Send correspondence on circulation and subscription matters (including address changes) to:  
Superintendent of Documents,  
Government Printing Office,  
Washington, D.C. 20402

Make checks payable to Superintendent of Documents.

The Secretary of Labor has determined that the publication of this periodical is necessary in the transaction of the public business required by law of this Department. Use of funds for printing this periodical has been approved by the Director of the Office of Management and Budget through October 31, 1982. Second-class postage paid Laurel, Md.

Library of Congress Catalog  
Card Number 15-26485



**October cover:**

"Segments," a 1968 sculpture of painted metal and glass by Menashe Kadishman courtesy Hirshhorn Museum and Sculpture Garden.

Photographs and cover design by Ann Meekins, Division of Audio-Visual Communication Services, U.S. Department of Labor.

**Regional Commissioners  
for Bureau of Labor Statistics**

**Region I — Boston:** *Paul V. Mulkern*  
1603 JFK Federal Building, Government Center,  
Boston, Mass. 02203  
Phone: (617) 223-6761  
Connecticut  
Maine  
Massachusetts  
New Hampshire  
Rhode Island  
Vermont

**Region II — New York:** *Samuel M. Ehrenhalt*  
1515 Broadway, Suite 3400, New York, N.Y. 10036  
Phone: (212) 944-3121  
New Jersey  
New York  
Puerto Rico  
Virgin Islands

**Region III — Philadelphia:** *Alvin I. Margulis*  
3535 Market Street  
P.O. Box 13309, Philadelphia, Pa. 19101  
Phone: (215) 596-1154  
Delaware  
District of Columbia  
Maryland  
Pennsylvania  
Virginia  
West Virginia

**Region IV — Atlanta:** *Donald M. Cruse*  
1371 Peachtree Street, N.E., Atlanta, Ga. 30367  
Phone: (404) 881-4418  
Alabama  
Florida  
Georgia  
Kentucky  
Mississippi  
North Carolina  
South Carolina  
Tennessee

**Region V — Chicago:** *William E. Rice*  
9th Floor, Federal Office Building, 230 S. Dearborn Street,  
Chicago, Ill. 60604  
Phone: (312) 353-1880  
Illinois  
Indiana  
Michigan  
Minnesota  
Ohio  
Wisconsin

**Region VI — Dallas:** *Bryan Richey*  
Second Floor, 555 Griffin Square Building, Dallas, Tex. 75202  
Phone: (214) 767-6971  
Arkansas  
Louisiana  
New Mexico  
Oklahoma  
Texas

**Regions VII and VIII — Kansas City:** *Elliott A. Browar*  
911 Walnut Street, Kansas City, Mo. 64106  
Phone: (816) 374-2481

**VII**  
Iowa  
Kansas  
Missouri  
Nebraska

**VIII**  
Colorado  
Montana  
North Dakota  
South Dakota  
Utah  
Wyoming

**Regions IX and X — San Francisco:** *D. Bruce Hanchett*  
450 Golden Gate Avenue, Box 36017,  
San Francisco, Calif. 94102  
Phone: (415) 556-4678

**IX**  
American Samoa  
Arizona  
California  
Guam  
Hawaii  
Nevada  
Trust Territory of the Pacific Islands

**X**  
Alaska  
Idaho  
Oregon  
Washington



LIBRARY

OCT 28 1981



KR

## MONTHLY LABOR REVIEW

OCTOBER 1981  
VOLUME 104, NUMBER 10

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

- 
- |                       |    |  |
|-----------------------|----|--|
| Philip L. Rones       | 3  | <b>Response to recession: reduce hours or jobs?</b><br>Workweek cuts are a reliable leading indicator of recession, a firm's initial response to sagging product demand; thereafter, numerous decisions determine timing of layoffs      |
| Michael Urquhart      | 12 | <b>The services industry: is it recession-proof?</b><br>Since 1948, the industry has displayed relative cyclical insensitivity and has been marked by steady growth, accounting for nearly 20 percent of total employment in 1980        |
| John T. Tucker        | 19 | <b>Government employment: an era of slow growth</b><br>Since 1975, public payrolls have grown slowly, with government accounting for a smaller share of nonfarm jobs; in 1950-75, the State and local proportion expanded                |
| N. Root, D. Sebastian | 26 | <b>BLS develops measure of job risk by occupation</b><br>New statistic relates injury incidence and employment by occupation within economic sectors and industry divisions and should help target workers most likely to incur injuries |
| Peter Finn            | 31 | <b>The effects of shift work on the lives of employees</b><br>Nearly 1 in 6 employees works other than a normal daytime schedule, data are scarce on how workers are affected; incomes may rise, but family and social life often suffer |

### REPORTS

- |                           |    |   |
|---------------------------|----|---|
| B. L. Johnson, E. Waldman | 36 | Marital and family patterns of the labor force                    |
| Mary Ann Mullen           | 42 | Key officer of new police union loses to coalition in close vote  |
| Tadd Linsenmayer          | 44 | ILO conference focuses on bargaining, worker safety, not politics |

### DEPARTMENTS

- |    |                                      |
|----|--------------------------------------|
| 2  | Labor month in review                |
| 36 | Research summaries                   |
| 42 | Conventions                          |
| 44 | Foreign labor developments           |
| 47 | Major agreements expiring next month |
| 48 | Developments in industrial relations |
| 51 | Book reviews                         |
| 57 | Current labor statistics             |

# Labor Month In Review



**HEALTH INSURANCE.** Almost 3 of 4 full-time workers in private industry are covered by group health plans, according to a new study published by the Labor-Management Services Administration of the U.S. Labor Department. More than three-fourths of male workers were covered, but only two-thirds of the female workers. The study is based on a supplementary survey conducted by the Census Bureau as part of its May 1979 Current Population Survey. Here are some highlights:

**By union status.** Workers covered by a collective bargaining agreement had a significantly higher rate of health insurance coverage (91 percent) than workers not under an agreement (67 percent). Overall, the coverage rate for men exceeded that for women by 11 percentage points, but among bargaining-unit members, there was only a 4-percentage point difference.

**By industry and job.** Health insurance coverage exceeded 80 percent for workers in mining, manufacturing, transportation, and communications and public utilities. The highest rate (92 percent) was in communications and public utilities and the lowest in agriculture (31 percent).

Coverage was 76 percent for both white-collar and blue-collar workers. Service workers and farmworkers had rates of 45 and 24 percent. In the white-collar category, professional and technical workers had the highest coverage rate (83 percent) and salesworkers, the lowest (66 percent). Among blue-collar workers, operatives had the highest rates (79 percent) and nonfarm laborers, the lowest (67 percent).

Health plan participation for workers

represented by a union was at least 84 percent in each industry. In mining, manufacturing, transportation, and communications and public utilities, more than 9 of 10 union-represented workers were covered. These industries also had the highest proportion of their workers represented by unions. However, health coverage is not explained by union presence alone. At least 80 percent of the workers outside the bargaining unit in mining, manufacturing, and communications and public utilities had health insurance coverage.

**By earnings.** The likelihood of health insurance coverage increased with higher income levels. Rates ranged from 25 percent in the lowest income category to 93 percent in the highest. Twenty-five percent of workers earning up to \$4,999 annually were covered; 61 percent of those in the \$5,000 to \$9,999 range; 82 percent of those earning \$10,000 to \$14,999; 89 percent of those earning \$15,000 to \$19,999; 91 percent of those earning \$20,000 to \$24,999; and 93 percent of the \$25,000 and over earners.

**By size of firm.** Small establishments (fewer than 100 workers) had a health insurance coverage rate of only 62 percent. For medium size establishments (100 to 499 workers), the rate was 87 percent; and for large establishments (500 or more workers), 94 percent.

The widest variation in coverage occurred in small establishments. None of the industries in medium or large establishments had health coverage rates of less than 75 percent. In small establishments, coverage ranged from 51 percent in services to 92 percent in communications and public utilities. None of the industries with the highest

coverage overall (communications and public utilities, mining, transportation and manufacturing) had a rate less than 72 percent in their small establishments. Part of the reason for this is that each of these industries has a higher proportion of bargaining-unit employees among small establishments relative to the remaining industries. But, perhaps more important, these industries are high-wage industries.

**By personal characteristics.** Three-fourths of both married—spouse present—and widowed or divorced workers were covered by group health plans, compared to about two-thirds of the never-married and married—spouse absent—workers.

White workers had a higher health coverage rate than workers of other races. Much of the 6-percentage point difference resulted from a relatively larger proportion of nonwhite workers being low-wage earners and concentrated in occupations with traditionally lower coverage rates.

Younger workers and older workers were least likely to be included in on-the-job group health insurance plans. The lowest rate of coverage was in the under age 25 category, where only 62 percent were covered. All other age categories had rates between 75 and 78 percent, except for the age 60 and over category, where 70 percent were covered.

Copies of the study, "Group Health Insurance Coverage of Private Full-Time Wage and Salary Workers, 1979" are available from the Pension and Welfare Benefit Programs, Labor Management Services Administration, U.S. Department of Labor, Washington, D.C. 20216. □

# Response to recession: reduce hours or jobs?

*Workweek cuts are a reliable leading indicator of recession, because they are the firm's initial response to sagging product demand; thereafter, numerous business and individual decisions determine the point at which workers will be laid off*

PHILIP L. RONES

During a recession, attention is focused on the most obvious victims—those people who have lost their jobs. Particularly hard hit by the downturns of the last three decades was the manufacturing sector, which accounted for 90 percent of all job losses. These employment reductions were concentrated largely in the durable goods industries and almost exclusively among production workers.

But layoffs are not the first response by manufacturers to sagging product demand; traditionally, firms have cut hours of work before reducing employment. This response has been so cyclically consistent that average weekly hours of production workers in manufacturing is designated as one of the Nation's 12 major leading economic indicators—those which precede business cycle movements—by the National Bureau of Economic Research.

The focus of this article is the timing and relative importance of workweek and employment cutbacks in durable goods manufacturing during the last six major business contractions.<sup>1</sup> Many of the costs and benefits of each method of reducing output are compared, and the

critical roles of such factors as collective bargaining and unemployment insurance on a firm's decisions are outlined. Discussion of determinants of the choice to cut employment or shorten workweeks constitutes a very brief overview of the literature, and is intended to provide a framework for interpretation of patterns observed in aggregated data.<sup>2</sup>

## A methodological foreword

Because the following analysis of the cyclical leads of one time series over another will depend on the timing of peaks and troughs, the reader should be acquainted with the methods used to pinpoint cyclical turns. Basically, the methodology follows procedures outlined by Gerhard Bry and Charlott Boschan in their report, *Cyclical Analysis of Time Series: Selected Procedures and Computer Programs*.<sup>3</sup> Determinations were based on the author's own analysis of the seasonally adjusted series, with consistent application of a few basic guidelines.

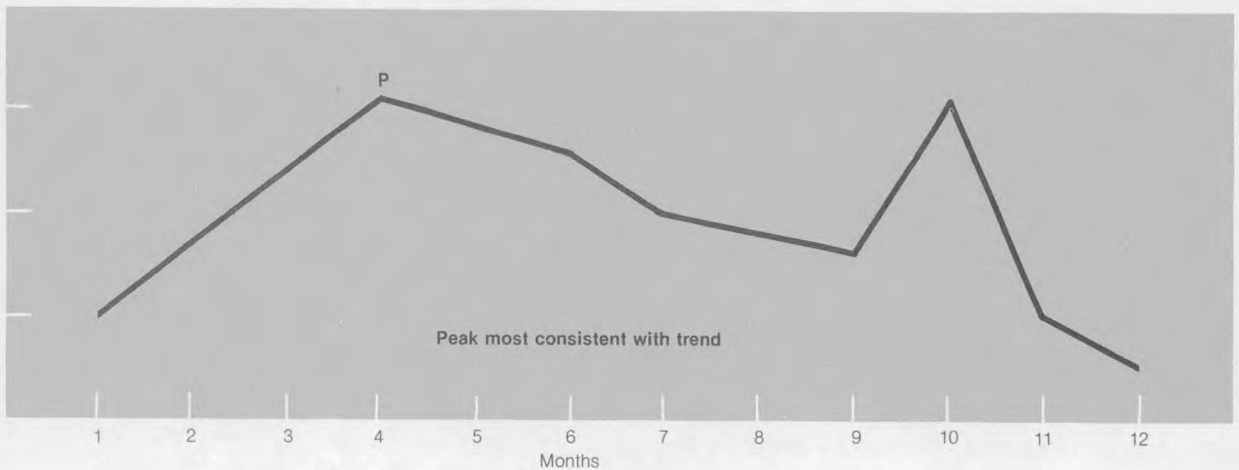
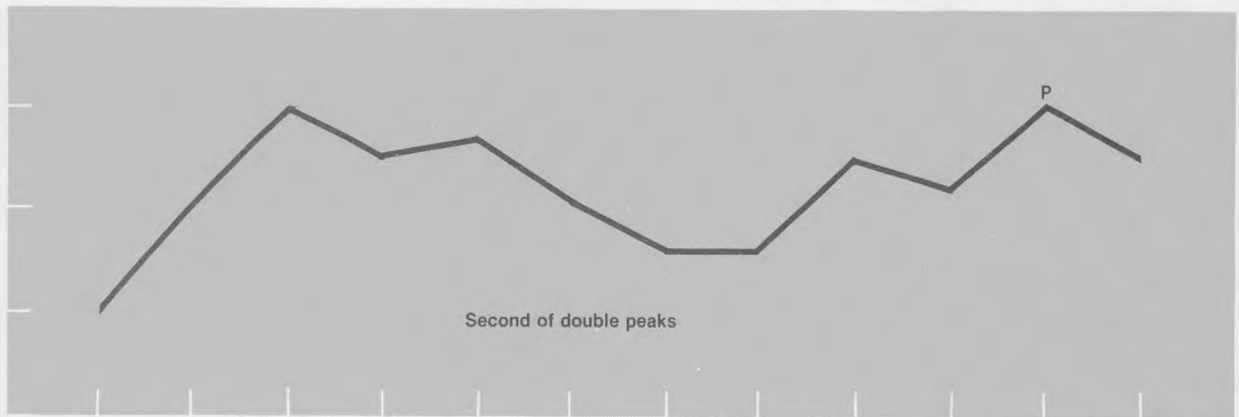
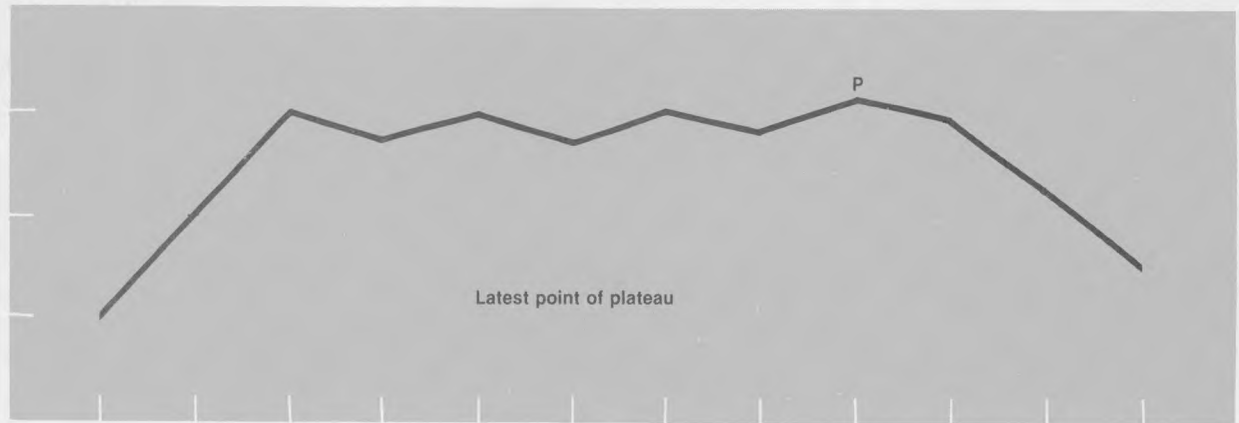
The highest pre-recession level was selected unless the series offered another viable and more indicative peak. In the case of a plateau, with more than one possible peak, the latest month was designated. (See chart 1.) If the series was double peaked, the latter peak before a sustained downturn was chosen. And when the series exhibited a 1- or possibly 2-month aberration, the peak most in line with the overall trend of the series was se-

---

Philip L. Rones is an economist with the Division of Employment and Unemployment Analysis, Bureau of Labor Statistics. T. Scott Fain, formerly an economist with the same division, assisted in the preparation of this article.

**Chart 1. Methods for determining series peak (P) illustrated**

Hours or employment



1 2 3 4 5 6 7 8 9 10 11 12  
Months

lected. (In other words, uncharacteristic “blips” in the series were ignored.)

### Where the ax falls first

When faced with the prospect of declining orders and a general slowdown in the economy, why do manufacturers choose to cut the workweek before jobs? The primary consideration is the savings to the firm, both in the short and the long term.

A major short-run cost advantage of hours reductions is avoidance of the immediate turnover costs of layoffs. In addition to processing the paperwork involved, firms often must make severance payments or pay supplemental unemployment benefits, and may also face increased contributions to State unemployment insurance systems. It should also be noted here that union contracts often require worksharing in the short run, before a company resorts to layoffs; 38 percent of unionized workers in manufacturing were covered by such provisions in 1970–71, the most recent period for which data are available.<sup>4</sup> (However, unions may curtail the long-run use of worksharing, a subject which will be discussed later in this article.)

In conjunction with the short-run savings of hours reductions, firms must also consider the longer term costs of layoffs, particularly those related to labor turnover. If laid-off workers are unavailable for recall when demand recovers, the company will incur substantial cost in recruiting, selecting, and training new employees. And because these costs appear to be rising,<sup>5</sup> employers try to avoid them by reducing hours as long as they can.

Of primary importance to the firm’s decisions is the probability that a worker will be available for recall—the greater that probability, the less costly layoffs become. This issue has been addressed by several researchers. Even allowing for some methodological shortcomings pointed out by Thomas Bradshaw and Janet Scholl, Martin Feldstein’s research still yields a high recall rate for those on temporary layoff—in the neighborhood of 65 to 70 percent.<sup>6</sup> David Lillien reaches a similar estimate on the probability of recall.<sup>7</sup> However, he stresses that temporary layoffs are not the major source of cyclical unemployment: he estimates that roughly 35 percent of the increase in job loser unemployment during the 1975 recession was due to temporary layoffs; much of the remaining increase represented long-term unemployment, particularly among those who later became job changers.

Martin Baily proposes an additional cost to the firm using layoffs to reduce output—higher wage rates.<sup>8</sup> He asserts that a firm (or an industry) develops a reputation from past layoffs. A potential employee will view a high probability of being laid off as a risk of employ-

ment for which he or she should be compensated. This is particularly important for the relatively small segment of the economy which experiences a high level of either seasonal, or, in the case of durable goods manufacturing, cyclical employment cuts. Another cost of layoffs, which will be discussed in more detail later, is the possibility that the firm will have to pay higher unemployment insurance premiums in the future, based on its experience rating.

The firm, then, must respond cautiously to changes in demand. Initial cutbacks are generally made in expensive overtime hours, which make up the majority of workweek declines during cyclical downturns. If, because of a shortage of specialized labor or scheduling inflexibilities, elimination of overtime cannot provide all of the needed reductions, some less expensive, straight-time hours are also cut. The following tabulation indicates that, over the last five recessions, durable goods firms appeared to “target” overtime more and more when they needed to slash the workweek:

<i>Recession period<sup>9</sup></i>	<i>Fall in hours (peak to trough)</i>	<i>Fall in overtime hours (peak to trough)</i>	<i>Overtime as percent of total hours decline</i>
1956–58 . . . . .	2.9	1.7	58.6
1960–61 . . . . .	2.4	1.2	50.0
1969–70 . . . . .	1.8	1.3	72.2
1973–75 . . . . .	2.3	2.0	87.0
1979–80 . . . . .	1.9	1.6	84.2

Much of this targeting, however, was possible only because overtime has been used more extensively during recent years. Prior to the onset of each of the first two recessions shown, durable goods overtime averaged about 3 hours per week. Since 1969, the prerecession levels have been about 4 hours. Of course, there are costs involved in hours reductions. In particular, firms continue to accrue liabilities for fringe benefits in maintaining workers on the payroll. Also, they may face union animosity toward hours cuts and may incur planning costs associated with changes in work schedules. But the benefits of early hours reduction in terms of payroll savings and the avoidance of turnover seem, most often, to outweigh the costs.

### The timing of job cuts

Not only are companies hesitant to lay off workers at a business cycle peak, but employment may level off or even continue to rise after hours have begun to fall. What causes this anomaly in hours and employment policies? New hiring does actually peak before hours, and layoffs may edge upward, but as workers sense a tightening job market, quits also fall.<sup>10</sup> Thus, the new turnover rate is not negative—that is, employment does not fall—until the firm steps up its use of layoffs.

Are there other reasons why firms are sluggish in laying off workers? Walter Oi's explanation entails viewing labor as a quasi-fixed factor of production, as opposed to the classical concept of labor as a purely variable factor.<sup>11</sup> The extent of this "fixity," as he calls it, depends on the investment in firm-specific training, which increases the worker's productivity only for his or her current employer. Thus, the decision to lay off a worker would not simply be a function of the worker's marginal product and his wage. Instead, the firm may retain an employee whose marginal product is below his or her wage rather than risk high future costs of training new workers in skills unique to the company. Donald Parsons demonstrates that both the average quit and layoff rates are lowest in industries where both worker- and firm-financed investment in specific training is greatest.<sup>12</sup>

Gerhard Bry, in his study of the workweek, suggests that the lag in job cuts may be the result of conflicting policies within the firm. "Changes in weekly hours come about as the result of fluctuations of current workloads" (decided at the foreman level), but "cyclical changes in employment are the result of policy decisions based on anticipated workloads" (decided at the management level). Conflicting policies concerning hours and employment may, therefore, be determined independently.<sup>13</sup> Robert J. Gordon also assumes a lag in management decisionmaking in his report on the "end-of-expansion" drop in productivity caused by overhiring. According to Gordon, companies "may gradually recognize an overstaffing condition but be unable to correct it rapidly because of both the high costs of more frequent decisionmaking and the inevitable time it takes to reduce the work force purely by attrition when layoffs are costly."<sup>14</sup> Apparently firms are slow to cut employment not only because of the cost, but also because of a policymaking lag at the management level.

But at some point, the nature of the production process or union agreements no longer allow the company to continue to reduce hours without laying off workers. Firms must then increase their layoff rate or incur the continuing costs of underutilized labor or unacceptably large inventories.

The nature of the company and its products will help determine how extensive its use of hours reductions can be.<sup>15</sup> For instance, a high capital-to-labor ratio would imply that the firm's variable costs are relatively low. Thus, other things equal, it is less likely that payroll savings through layoffs would provide sufficient cost reductions. In other cases, the nature of the production process may dictate layoffs. For example, the continuous operations characteristic of steel production cannot be economically run at less than full capacity. Thus, as demand declines, it is more likely that an operation will be closed down completely and the workers laid off.

Another factor is the cost of maintaining high inventories, which depends in part on the characteristics of the output. For instance, a producer of a perishable product would be more likely to shut down operations in the face of declining demand than would the maker of a product that could be easily stored.

Beyond the nature of the firm's product and production process, employee preferences help determine the point at which layoffs begin. Baily, in a theoretical model of layoff behavior, asserts that a firm will reduce hours to a minimum level acceptable to workers and must then begin layoffs.<sup>16</sup> That level is reached when the opportunity costs of workers' time is higher than the net value of the job at reduced hours. At this point, Baily proposes, no additional hours reduction will occur. BLS establishment data show that in durable goods manufacturing about 25 percent of all of the eventual hours reductions in each industry had occurred by the time that employment started to decline.

Of course, Baily was theorizing on a firm's behavior; analysis at that level could easily provide different results than industry aggregates. (Certainly, all firms within an industry do not reduce hours or employment simultaneously.) But while hours do continue to decline in the aggregate, even after employment levels begin to fall, the employee's preference between work at reduced hours and a subsidized period of layoff seems to be a key to the decision of the employer. As we will see, the more attractive the layoff alternative (in terms of the combination of replacement income and leisure time), the more likely the worker will accept layoff, and, more importantly, the more likely he or she will be available for recall.

### How long is the hours lead?

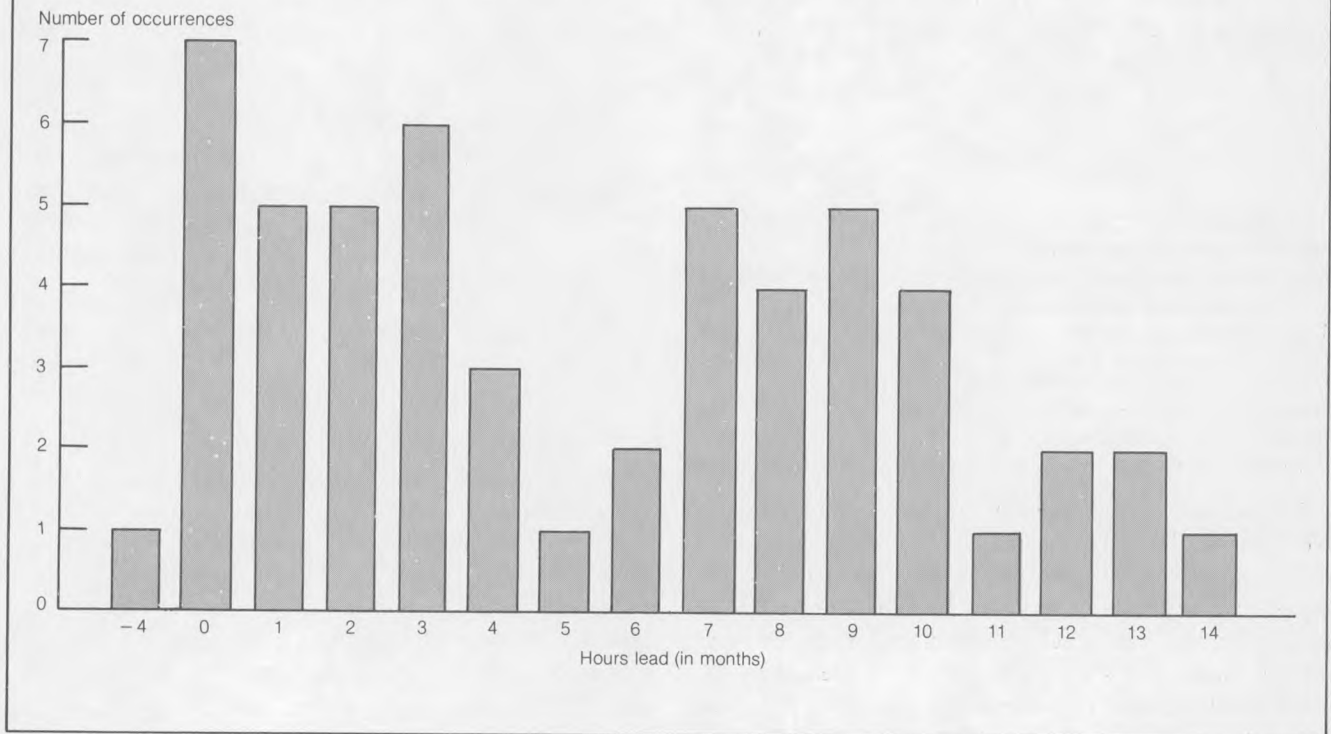
As previously indicated, the manufacturing workweek is such an effective cyclical indicator because its movements consistently lead those in employment. During the last six business cycles, the downturn in average weekly hours preceded that in employment for the nine major durable goods industries more than 80 percent of

**Table 1. Lead of hours peak over employment peak during business downturns, selected industries, 1953-80**

Industry	Lead (in months)					
	1953-54	1956-58	1960-61	1969-70	1973-75	1979-80
Lumber and wood products	1	2	0	5	7	0
Furniture and fixtures . . . . .	0	8	4	3	9	10
Stone, clay, and glass products . . . . .	0	2	9	7	3	0
Primary metals industries . . . . .	4	9	9	0	1	3
Fabricated metals industries . . . . .	3	2	1	8	10	3
Machinery, except electrical . . . . .	14	13	8	6	13	7
Electric and electronic equipment . . . . .	4	0	8	3	10	10
Transportation equipment . . . . .	9	2	1	11	2	1
Instruments and related products . . . . .	7	12	7	-4	6	12



**Chart 2. Frequency distribution of hours leads presented in table 1**



the time. (See table 1.) The average length of time between the downturns in hours and employment (referred to as "hours lead") for these 54 observations was 5.4 months. A similar tendency exists at the trough of a business cycle; in general, manufacturing hours begin to increase before employment. In the durable goods industries, the hours lead out of recession occurred in 39 of the 54 possible observations. However, its average length was less than half the lead at the peak of the cycle.<sup>17</sup> (During the 1980 business cycle, the upturns in hours and employment were coincident in 7 of the 9 durable goods industries.)

The tabulation below shows the length of the lead of the production workweek peak over the employment peak for each of the nine industries, averaged over the last six recessions. The industry data are presented in descending order of average lead time:

	<i>Lead in months</i>
All industries . . . . .	5.1
Machinery, except electrical . . . . .	10.2
Instruments and related products . . . . .	6.7
Electrical and electronic equipment . . . . .	5.8
Furniture and fixtures . . . . .	5.7
Fabricated metal products . . . . .	4.5
Transportation equipment . . . . .	4.3
Primary metal industries . . . . .	4.3
Stone, glass, and clay products . . . . .	3.5
Lumber and wood products . . . . .	2.2

Except for the extremely long-leading machinery industry and the shortest leading industries (lumber, and stone, clay, and glass products), the average leads hover near the 5-month mark. But when each recession is examined separately by industry, a widely and apparently random set of relationships appears, ranging from a 14-month lead to a 4-month lag. In fact, the "average" lead of 5 months occurs only once, 6 months occurs only twice, and 4 months only three times. (See chart 2.)

Given the variance of these individual leads, consistent patterns within and between industries become impossible to identify. But when average leads across recessions are considered, the industries do seem to fall into two groups: Those which produce finished products, such as machinery, furniture, electronics, and instruments, have longer leads, on average, than those which produce intermediate products.

Does any relationship exist between the length of the hours lead and the relative use of layoffs and hours cutbacks to reduce production? That is, do industries with long leads generally make more intensive use of hours reductions during a cyclical downturn? To examine this possibility, a ratio was created which compares the employment drop for a given industry and recession with the corresponding hours decline. For each industry, the percentage change in employment from its peak to

trough is divided by the peak-to-trough percentage change in hours.

This ratio measures an industry's preference for the use of employment or hours cutbacks to reduce output when demand sags; a high ratio indicates a heavy employment effect, and a low ratio means that hours reductions play a greater role. The averages of these ratios for the nine major durable goods industries over the six recessions, ranked in order of magnitude, are:

All industries . . . . .	2.8
Machinery, except electrical . . . . .	3.4
Electrical and electronic equipment . . . . .	3.4
Lumber and wood products . . . . .	3.3
Transportation equipment . . . . .	2.8
Fabricated metal products . . . . .	2.8
Instruments and related products . . . . .	2.7
Stone, glass, and clay products . . . . .	2.5
Primary metal industries . . . . .	2.2
Furniture and fixtures . . . . .	1.8

Though not entirely consistent, these rankings resemble the lead rankings. However, when data are disaggregated for each recession, the expected link between high ratio and low hours lead does not hold. In fact, when the individual observations for the employment-to-hours ratios are regressed over the length of the corresponding lead, no statistically significant relationship emerges. This probably reflects the fact that, while the employment-to-hours ratios are fairly consistent, the leads tend to be widely dispersed. A mean lead of 5 months for a particular industry over the six recessions results from the averaging of extreme observations, such as 1 month and 9 months. (See chart 2.) Thus, because the disaggregated leads do not demonstrate a consistent pattern, the apparent connection between lead length and the ratio disappears in the disaggregation.

When the ratio is made dependent on the depth of recession in a given industry, a significant positive relationship appears; the deeper the recession, the higher the ratio.<sup>18</sup> This follows from the observation that employment cuts become more important as a recession progresses. As producers perceive and experience a real and deep recession, they resort to layoffs more frequently and their employment-to-hours ratio rises.

For reasons cited earlier, a plateau in employment is typical at the beginning of a downturn; this is the period after firms first detect a weakness in demand for their product (and, often, begin hours cuts) but before the situation becomes certain enough, or serious enough, to start significant layoffs. The length of the hours lead, then, is largely determined by the point of this "plateau" where employment actually peaks. This is shown graphically in chart 3.

It would be unlikely for employment to peak in the middle of the plateau period and thus result in an "av-

erage" lead length. This is because, once the need for output reduction is noted, significant new hiring probably would not occur while hours are being cut back. Thus, given the way businesses make hours and layoff decisions, and methods used to identify series peaks, hours leads tend to be long or short, but rarely in between.

Each recession tends to exhibit certain unique characteristics (for example, in 1973-75, there were protracted employment stalls and thus relatively long leads), and no trend is apparent over time. The average leads (in months) for the nine durable goods manufacturing industries combined are shown below for each recession:

1953-54 . . . . .	4.7	1969-70 . . . . .	4.1
1956-58 . . . . .	5.6	1973-75 . . . . .	6.8
1960-61 . . . . .	5.2	1979-80 . . . . .	5.1

Some have suggested that recent developments in economic forecasting and communications give manufacturers advance warning of a recession and the ability to initiate policy changes before a substantial decline in demand actually occurs. Or the government, through fiscal and monetary policies, may, to some extent, forestall a downturn. But, if these hypotheses are true, the expected trend toward shorter leads is not clearly observed in the data.

### Two structural determinants

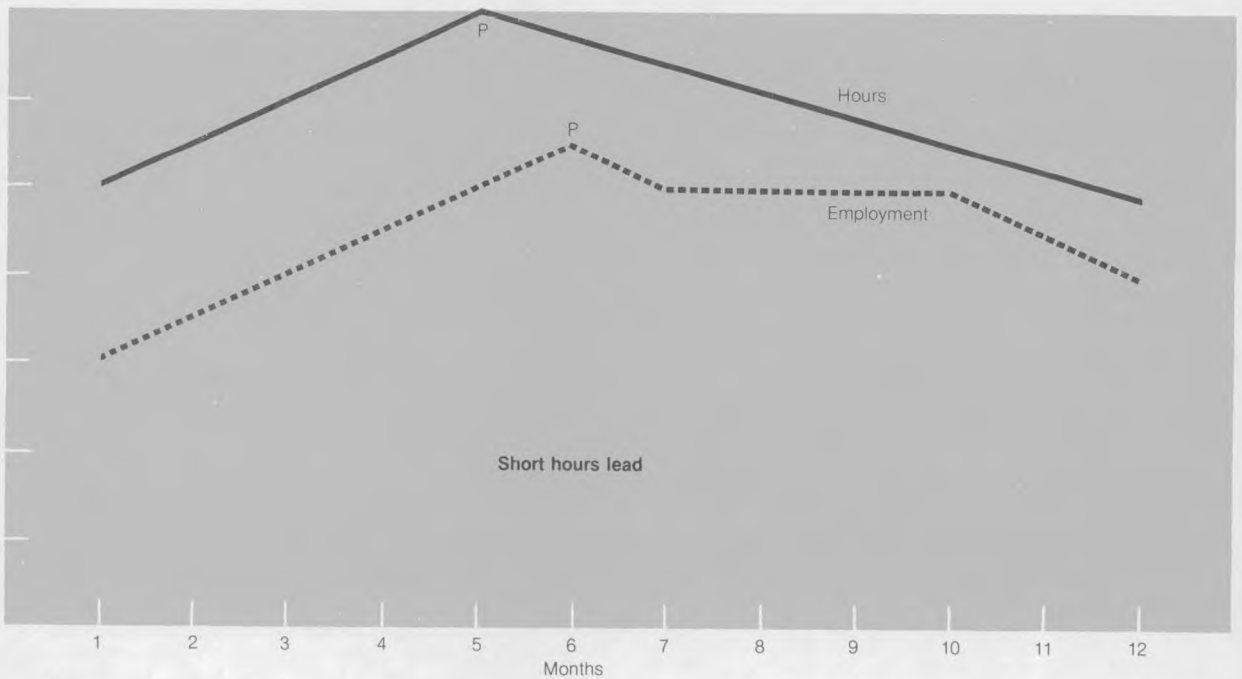
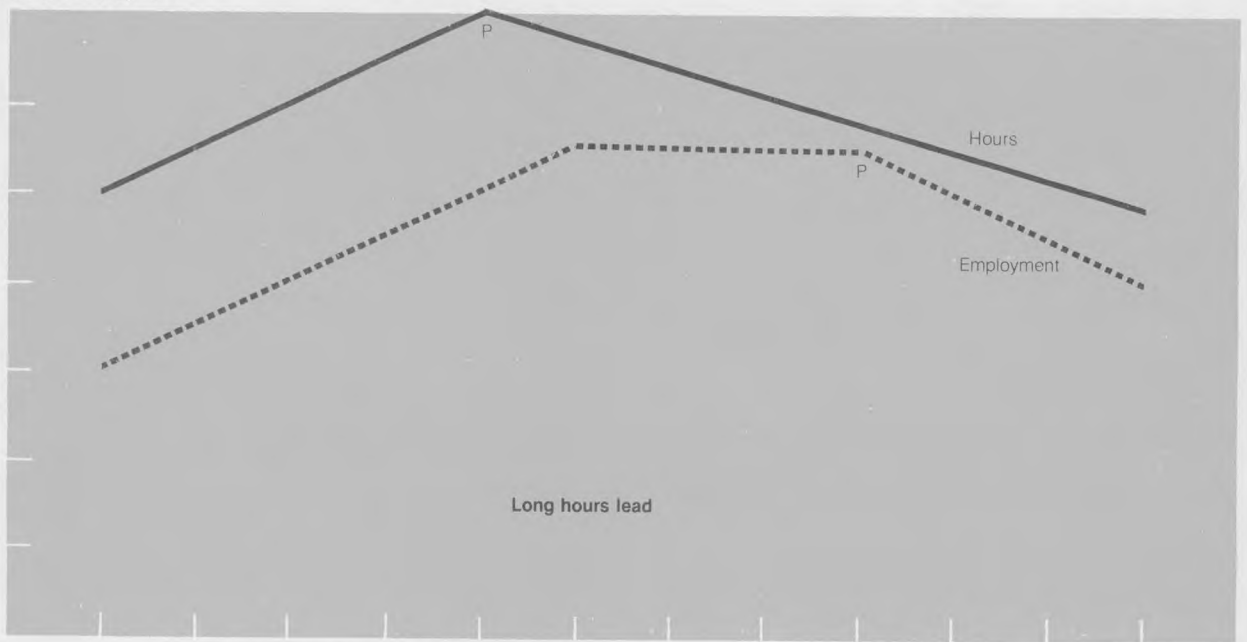
Both unemployment insurance and collective bargaining provisions influence the ability and willingness of the firm to use, and the worker to accept layoffs. As mentioned earlier, the timing of layoffs is, in part, a function of the opportunity costs of working reduced hours. The experienced worker becomes more likely to sit out a period of unemployment, and be available for recall, when the value of the nonwork option increases.

This, of course, is the effect of the increased availability and levels of unemployment insurance on decisions. The (often) nontaxable status of this benefit acts as an additional incentive to layoffs, because it increases the real value of benefit payments relative to taxable earned income. The higher the income supplement, the lower the probability of job search by the worker, and hence, the lower the possible future costs of layoffs to employers in terms of hiring and training new employees.

The firm must also consider costs associated with its unemployment insurance taxes. Under typical policies, a firm maintains a funding reserve with the State on which it can draw when layoffs increase. (Each State has its own regulations and funding policies.) If unemployment insurance taxes were perfectly experience-rated, the firm would face a future hike in premiums whenever layoffs rose above a "normal" level. However, because States generally have a maximum tax rate,

**Chart 3. Effect of employment plateau on length of "hours lead" over employment peaks**

Hours and employment



Note: "P" indicates peak.

Months

many high-turnover firms are already taxed at the maximum level, and operate with a zero or negative reserve balance. For these companies, the marginal cost of future premiums associated with increased layoffs is also zero. Some States have a high minimum tax rate, whereby some firms would regularly maintain an account surplus. Again, the marginal cost of layoffs to these firms is zero until the surplus is used up. Thus, the unemployment insurance program serves both to decrease the cost of layoffs to workers and to make employment cuts more attractive to employers.

Union representation of workers may also have a profound effect on the firm's choice of hours or employment reductions. James L. Medoff, who has studied this influence, finds evidence of a positive correlation between unionization and layoffs.

Medoff asserts that a union, sensitive to the concerns of its more senior members, can often negotiate contracts which benefit this relatively small group. Workers with extensive seniority would tend to prefer layoffs to across-the-board hours reductions because their own jobs would be unaffected. Sumner Slichter, James Healy, and Robert Livernash noted as early as 1960 that "the trend of union preference is more and more toward the restriction of work-sharing arrangements."<sup>19</sup> Medoff's study of union effects on layoff rates supports this finding. He observes that, while the proportion of manufacturing workers covered by collective bargaining agreements asking for a reduced workweek prior to layoff remained nearly unchanged from 1954 to 1971, the nature of the agreements did change.<sup>20</sup> The principal difference was an increase in the percentage of contracts which limited the length of time that reduced workweeks could forestall layoffs. Many of the revised contractual clauses provided for "union participation in procedures involving reductions in hours per employee."

Collective bargaining may contribute to a higher layoff rate for other reasons. The attractive benefits often

negotiated through labor-management agreements tend to encourage workers to accept layoffs rather than seek alternative employment. For example, a unionized firm is more likely to provide its laid-off workers with supplemental unemployment benefits; in 1978, nearly 61 percent of organized workers in durable goods industries were eligible for such benefits.<sup>21</sup> The relatively high returns to the employee for extended service in unionized companies also act as a deterrent to job change, as does the accrual of (largely) nonportable pension benefits. And, to the extent that unions are able to maintain high and increasing wage levels, particularly through multiyear agreements and cost-of-living clauses, the firm loses the option of wage flexibility as a response to sagging demand.<sup>22</sup> Union agreements are often so restrictive that they encourage firms' use of enhanced early retirement benefits as an alternative means of reducing the work force.

Medoff found that, between 1958 and 1971, the probability of layoff in a unionized manufacturing firm was more than twice that in a nonunionized establishment, and that about 30 percent of this difference could be explained by the existence of supplemental unemployment benefits.<sup>23</sup>

THE WORKWEEK OF PRODUCTION WORKERS in manufacturing, and more specifically, in durable goods industries, remains a reliable economic indicator. It has consistently risen and fallen before employment during the past 30 years. But the length of time by which changes in hours lead those in employment remains unpredictable, and there is no clear and explainable trend in the hours lead which would indicate that it is shrinking or growing over time. The decisions of individual firms and workers are obviously important to job and hour developments, but reliable tools for measuring and predicting the effects of these individual factors on lead length have yet to be constructed. □

— FOOTNOTES —

<sup>1</sup> Employment levels are used in this analysis, rather than some measure of labor turnover, such as layoff rates, because the former are a superior measure of true job loss. Increases in layoff rates tend to precede employment declines as the former are often accompanied by offsetting declines in the quit rate.

<sup>2</sup> Data are derived from a BLS survey of business establishments. Employment and hours series are published monthly in *Employment and Earnings*. We have limited our focus to durable goods industries for a number of reasons. First, with the occasional exception of transportation and public utilities, the service-producing sector of the economy has not consistently experienced significant cyclical declines in employment and hours. Second, within the goods-producing sector, mining is generally non-cyclical and, while there are employment cutbacks in construction during recessions, the hours series reveals no dependable, cyclical pattern; therefore, an hours lead cannot be determined. And third, durable goods was chosen over all manufacturing because it is responsible for 80 percent of manufacturing job losses.

While the non-durable sector, in aggregate, exhibits cyclical patterns in both employment and hours, many of its component industries do not.

Also, because the hours data exist only for production or non-supervisory workers, all the employment data used pertain only to those workers. Production workers account for more than 95 percent of the jobs lost during a recession, and this more narrow definition of employment should thus enhance rather than detract from the analysis. Miscellaneous durable goods manufacturing is omitted from the analysis because it is a collection of largely unrelated products and production processes.

<sup>3</sup> Gerhard Bry and Charlott Boschan, *Cyclical Analysis of Time Series: Selected Procedures and Computer Programs* (New York, Columbia University Press, 1971), pp. 10-14.

<sup>4</sup> *Layoff, Recall, and Worksharing Procedures*, Bulletin 1425-13 (Bureau of Labor Statistics, 1972). The 1971 data are the latest available. For a recent discussion of worksharing, see Robert W.

Bednarzik, "Worksharing in the U.S.: its prevalence and duration," *Monthly Labor Review*, July 1980, pp. 3-12.

<sup>5</sup> Robert M. MacDonald, "The Fringe Barrier Hypothesis and Overtime Behavior," *Industrial and Labor Relations Review*, July 1966, pp. 565-66.

<sup>6</sup> Martin S. Feldstein, "The Importance of Temporary Layoff: An Empirical Analysis," *Brookings Papers on Economic Activity*, 3, 1975, pp. 725-77; and Thomas F. Bradshaw and Janet L. Scholl, "The Extent of Job Search During Layoff," *Brookings Papers on Economic Activity*, 2, 1976, pp. 515-23.

<sup>7</sup> David M. Lillien, "The Cyclical Pattern of Temporary Layoffs in United States Manufacturing," *The Review of Economics and Statistics*, February 1980, pp. 24-31.

<sup>8</sup> Martin Neil Baily, "On the Theory of Layoffs and Unemployment," *Econometrica*, July 1977, pp. 1043-63.

<sup>9</sup> Overtime data were not available for the 1953-54 business cycle.

<sup>10</sup> Labor turnover data for manufacturing industries are available in *Employment and Earnings*, Bulletin 1312-11 (Bureau of Labor Statistics, 1979), and subsequent monthly issues of *Employment and Earnings*.

<sup>11</sup> Walter Y. Oi, "Labor as a Quasi-Fixed Factor," *Journal of Political Economy*, November 1962, pp. 538-55.

<sup>12</sup> Donald O. Parsons, "Specific Human Capital: An Application to Quit Rates and Layoff Rates," *Journal of Political Economy*, July-August 1972, pp. 1120-43.

<sup>13</sup> Gerhard Bry, *The Average Workweek as an Economic Indicator*, Occasional Paper 69 (National Bureau of Economic Research, 1959), p. 97.

<sup>14</sup> Robert J. Gordon, "The End-of-Expansion Phenomenon in Short-

run Productivity Behavior," *Brookings Papers on Economic Activity*, 2, 1979, p. 460.

<sup>15</sup> James L. Medoff, "Layoffs and Alternatives Under Trade Unions in United States Manufacturing," *Studies in Demand for Labor*, prepared under Research Grant J9M6 0094 (U.S. Department of Labor, 1977), p. 272. A revised version appeared under the same title in the June 1979 *Journal of Economic Literature*, pp. 380-95.

<sup>16</sup> Baily, "Theory of Layoffs," p. 1051.

<sup>17</sup> To some extent, the establishment data produce a bias towards the hours effect of business cycle downturns. If a person is laid off in the middle of the reference week, for example, he or she will appear in the data as employed, but at reduced hours. Although this bias could be important in our understanding of businesses' response to declining demand, the nature of available data does not allow us to measure its magnitude.

<sup>18</sup> The depth of a recession is measured by the index of aggregate weekly hours, which is the product of average hours multiplied by total employment. The index uses a 1967 base. Data are published monthly in *Employment and Earnings*. Regression results are available on request.

<sup>19</sup> Sumner H. Slichter, James J. Healy, and Robert E. Livernash, *The Impact of Collective Bargaining on Management* (The Brookings Institution, 1960), p. 152.

<sup>20</sup> See footnote 4.

<sup>21</sup> *Characteristics of Major Collective Bargaining Agreements, January 1, 1978*, Bulletin 2065 (Bureau of Labor Statistics, 1980), p. 101.

<sup>22</sup> An interesting discussion of wage rigidity can be found in Robert E. Hall, "Employment Fluctuations and Wage Rigidity," *Brookings Papers on Economic Activity*, 1, 1980, pp. 91-123.

<sup>23</sup> Medoff, "Layoffs and Alternatives," pp. 278-81.

# The services industry: is it recession-proof?

*Steady growth has led the services division to account for nearly 20 percent of total employment in 1980, linked mainly to business and health services; since 1948, it has been nearly immune to recessions and has displayed relative cyclical insensitivity*

MICHAEL URQUHART

Throughout this century the bulk of employment growth has been in the services-producing sector of the economy, whose share of total nonagricultural employment has increased from 53 percent in 1920 and 58 percent in 1948 to more than 70 percent in 1980.

The impact of this shift in employment on the functioning of the economy has been the subject of considerable analysis.<sup>1</sup> In particular, studies have shown that the growth of employment in the services sector has continued even during economic downturns, and some have concluded that a services-dominated economy promotes stability over the business cycle.<sup>2</sup>

This article focuses on the degree of cyclical sensitivity of the fastest growing component of the services-producing sector, the services division. (Other major components of the sector are: transportation, communication, and public utilities; wholesale and retail trade; finance, insurance, and real estate; and government.)<sup>3</sup> This industry group, while quite varied in composition, includes those activities usually thought of as services, such as repair, health, social and personal services, business services, education, and entertainment.<sup>4</sup> The 1980 distribution of services employment follows; this diversity hinders slightly, but does not preclude, the drawing

of general conclusions about the division's cyclical behavior:

	<i>Percent distribution 1980</i>
Services division . . . . .	100.0
Health . . . . .	29.5
Business services . . . . .	16.9
Membership organizations . . . . .	8.9
Social services . . . . .	6.5
Educational . . . . .	6.3
Hotels and other lodging . . . . .	6.0
Personal services . . . . .	5.2
Amusement and recreation . . . . .	4.1
Auto repairs . . . . .	3.3
Legal . . . . .	2.7
Miscellaneous repairs . . . . .	1.7
Motion pictures . . . . .	1.2
Miscellaneous services . . . . .	5.7

Using data from the Current Employment Statistics program (payroll survey), this article also examines the employment growth record of the services division, including its cyclical sensitivity and impact on overall economic stability in the postwar period. Data from the Current Population Survey (household survey) are used to examine the demographic composition of employment in services and the nature of unemployment associated with the industry.<sup>5</sup>

The services employment series from the two surveys

Michael Urquhart is an economist in the Division of Employment and Unemployment Analysis, Bureau of Labor Statistics.

are not precisely comparable, as they do not cover the same universe. Employment estimates for services from the household series are consistently about 50 percent greater than the payroll series. This is primarily because the former includes employees in public education, the self-employed, and private household workers. Correcting for these conceptual dissimilarities reduces the difference to only about 300,000 in 1980, or less than 2 percent.<sup>6</sup>

### Health, business lead job growth

The postwar employment growth record of the services division is presented in table 1. According to the payroll survey, services employment increased from 5.2 to 17.7 million between 1948 and 1980, and its share of total employment rose from 11.5 to 19.6 percent. This gain surpassed that of any other major industry group, including government.

Not all components of the services division exhibited such extraordinary progress.<sup>7</sup> From 1972 to 1980, the only period for which data exists for all components, the slowest employment growth occurred in personal services (2 percent), motion pictures (4 percent), membership organizations (12 percent), and education (17 percent). The greatest increases in employment were reached in these types of services: social (108 percent), legal (78 percent), and business (68 percent).

However, in terms of sheer size, advances in this division have been dominated by two industries, health and business services. They accounted for almost half of services employment in 1980 and have contributed about 55 percent of its total increase since 1972.

The most dynamic components of the health services industry since 1972 have been dentists' offices (81 percent growth), nursing and personal care facilities (69

percent), and physicians' offices (68 percent). Hospitals, which make up nearly half of total employment in this industry, have risen by a modest 22 percent. Overall, health services posted an increase of 53 percent in the 8-year period.

Within business services, personnel supply (which includes employment and temporary help agencies) and computer and data processing services more than doubled. These two components accounted for 40 percent of all growth within business services; other elements showing more moderate increases were advertising (21 percent), mailing, reproduction, and stenographic (49 percent), and services to buildings (51 percent), while credit reporting and collection decreased 7 percent.

There has also been a substantial gain (55 percent) in the number of female employees in the services division since 1972, making up 67 percent of its total increase. Almost every industry has augmented their proportion of women, and nowhere did female employment decline. However, 72 percent of the boost was accounted for by only three industries: health, business, and social services. Health services alone, in which women make up 80 percent of employment, contributed 41 percent of the expansion. Within business services, about half of the rise was caused by the rapidly growing personnel supply and computer and data processing services. However, the majority of business services employees in 1980 (57 percent) were men.

Overall, male employment in services rose only 32 percent. Men accounted for a majority of the increased employment in auto repair, miscellaneous repair, and amusements and recreation services.

Most of the increase in services employment is real growth, but much is because of a shift in employment to services, and with particular regard to business ser-

**Table 1. Employees on nonagricultural payrolls by selected industry divisions and years, 1948-80**

[Numbers in thousands]

Industry	1948		1958		1965		1972		1980	
	Number	Percent distribution	Number	Percent distribution	Number	Percent distribution	Number	Percent distribution	Number	Percent distribution
Total nonfarm payroll employment .....	44,866	100.0	51,324	100.0	60,765	100.0	73,675	100.0	90,657	100.0
Goods-producing sector .....	18,774	41.8	19,513	38.0	21,926	36.1	23,668	32.1	25,855	28.5
Services-producing sector .....	26,092	58.2	31,811	62.0	38,839	63.9	50,007	67.9	64,801	71.5
Services <sup>1</sup> .....	5,181	11.5	6,765	13.2	9,036	14.9	12,276	16.7	17,741	19.6
Hotels and lodging places .....	( <sup>2</sup> )	.....	( <sup>2</sup> )	.....	( <sup>2</sup> )	.....	813	1.1	1,071	1.0
Personal .....	( <sup>2</sup> )	.....	877	1.7	985	1.7	912	1.2	931	1.2
Business .....	( <sup>2</sup> )	.....	656	1.3	1,139	2.1	1,790	2.4	3,002	3.3
Auto repair, services, and garages .....	( <sup>2</sup> )	.....	( <sup>2</sup> )	.....	( <sup>2</sup> )	.....	397	.5	583	.6
Miscellaneous repair .....	( <sup>2</sup> )	.....	( <sup>2</sup> )	.....	155	.3	199	.3	305	.3
Motion pictures .....	249	.6	199	.4	185	.3	205	.3	214	.2
Amusement and recreation .....	( <sup>2</sup> )	.....	( <sup>2</sup> )	.....	( <sup>2</sup> )	.....	504	.7	735	.8
Health .....	( <sup>2</sup> )	.....	1,365	2.7	2,080	3.6	3,412	4.6	5,229	5.8
Legal .....	( <sup>2</sup> )	.....	139	.3	182	.3	271	.4	481	.5
Educational .....	( <sup>2</sup> )	.....	572	1.1	772	1.3	958	1.3	1,117	1.2
Social .....	( <sup>2</sup> )	.....	( <sup>2</sup> )	.....	( <sup>2</sup> )	.....	553	.8	1,149	1.3
Membership organizations .....	( <sup>2</sup> )	.....	( <sup>2</sup> )	.....	( <sup>2</sup> )	.....	1,403	1.9	1,571	1.7
Miscellaneous .....	( <sup>2</sup> )	.....	( <sup>2</sup> )	.....	( <sup>2</sup> )	.....	637	.9	1,008	1.1

<sup>1</sup> Includes veterinary, animal, landscape, and horticultural services (SIC-074-5,078); and museums, botanical, and zoological gardens (SIC-841-2), not shown separately.

<sup>2</sup> Not available.

vices, is the direct result of a substitution effect. The recent growth of business services is largely caused by a change in how firms handle business office functions. Employees are classified by industry based upon the major activity of the establishment employing them. Thus, for example, clerical workers who prepare financial records in a manufacturing firm are counted as employed in manufacturing. In contrast, if the establishment contracts with an outside accounting firm to prepare their records, those employees are classified as part of the services division. To the extent that firms replace their clerical workers with agency services, a "shift" in employment from manufacturing to services occurs. In this case, there is no basic change in the type of work being done, but rather a major change in how and where it is performed, resulting in a different industrial classification. While the true measure of the "contracting out" of work traditionally done by the establishments cannot be calculated, it does indicate the need for caution in drawing conclusions about industry employment trends.<sup>8</sup>

### Professional, technical workers dominant

In general, workers in the services division are more apt to be employed part time or be self-employed, especially in comparison to manufacturing. With the exception of trade, part-time employment in services, at 19.2 percent of the employed total, was substantially higher than in any other division, and more than a third of all part-time workers had jobs in services. Self-employment, at 10 percent of the total in services, compares with a low of 1.6 percent in manufacturing and 7.3 percent for the total economy. (See table 2.)

Women are more likely to be employed in services than in any other division. At 60 percent, their proportion is almost twice that in manufacturing (31 percent) and substantially greater than the average for the total economy (42 percent). While the proportion of blacks, at 13 percent, is higher than other divisions shown, it is only slightly above the overall ratio.

Workers in the services division also tend to be a bit older than most. The proportion of employees 55 years

and over is greater than in any other division, while that of youths ages 16 to 24 is smaller than average.

Since 1968, there have been only minor changes in the preceding characteristics, with the exception of the rise in female employment (from 57 to 60 percent). The labor force has grown younger, blacks and women have increased their shares, part-time employment has been relatively unchanged, and self-employment has declined slightly.

The occupational distribution of employment in the service and manufacturing divisions for 1980 is provided in the tabulation below:

Occupation	Total		
	Services	Manufacturing	Total
Total	100.0	100.0	100.0
White-collar workers	54.3	34.2	66.1
Professional and technical	16.7	11.4	38.5
Managerial and administrative, except farm	11.7	7.8	7.7
Sales	6.6	2.5	0.7
Clerical	19.4	12.5	19.2
Blue-collar workers	32.9	63.9	10.4
Craft	13.4	19.5	5.5
Operatives, except transport	11.1	36.5	2.7
Transport operatives	3.7	3.5	0.8
Nonfarm laborers	4.8	4.5	1.3
Service, except private household	12.7	1.7	23.5

As mentioned earlier, service workers account for about 25 percent of the industry's employees. Professional and technical workers continue to dominate, accounting for 39 percent of all employees in 1980, with the industry employing about two-thirds of all professionals. Clericals, at 19 percent, and managers and administrators, at 8 percent, made up most of the remainder. This distribution is in sharp contrast to goods-oriented industries, such as manufacturing, where most employees are either craftworkers or operatives. While the white-collar occupations (professional, managerial, clerical, and sales) account for 66 percent of all employment in services, they represent only 34 percent in manufacturing. The broad occupational distribution

**Table 2. Employment by selected industry divisions and characteristics, 1980**

[In percent]

Division	Total employed (in thousands)	Age (in years)			Women	Black	Part time <sup>1</sup>	Self-employed
		16-24	25-54	55 and over				
Total nonagricultural industries	93,960	21.8	63.9	14.3	42.4	11.2	13.6	7.3
Manufacturing	21,593	18.2	67.7	14.2	31.4	11.3	3.2	1.6
Transportation, communication, and public utilities	6,393	14.5	72.6	12.9	25.2	12.6	6.0	4.3
Trade	19,727	34.3	52.4	13.3	46.4	8.4	24.9	9.4
Finance, insurance, and real estate	5,860	21.4	64.1	14.5	58.2	9.2	10.4	7.8
Services (less private household)	26,914	18.8	66.1	15.1	59.8	12.9	19.2	10.0

<sup>1</sup> Part time includes only wage-and-salary workers who are on voluntary part-time schedules. Percent is of total wage-and-salary workers, not total given in first column.



in services has been fairly stable since 1972, although there has been a slight increase in the proportion of white-collar employees.

### Cyclical behavior

*Payroll jobs.* Table 3, which compares the average annual percentage change in employment during periods of expansion and contraction, helps to illustrate why services might be considered "recession-proof."<sup>9</sup> With one exception, the recession of 1957–58, employment in this division has increased even during cyclical downturns. In contrast, the goods-producing sector has paired substantial declines in employment with every recession. The rest of the services-producing sector also declined when each of the first four recessions occurred, but has since grown moderately during downturns.

Comparison of average rates of growth over the business cycle provides further evidence of this contrasting behavior. Services employment has advanced by an average of 2.1 percent during contractions and 4.8 percent in times of expansion, while employment in the goods-producing sector declined by 8.3 percent in recessions and increased by an average of 3.8 percent during recovery periods.

However, individual components of the services division show considerable variation. For example, during the 1973–75 recession, three components—personal services, auto repair, and motion pictures—posted declines, while health, legal, and social services expanded at higher than average rates for the division.

An industry that exhibits employment growth during recessionary periods is not necessarily insensitive to business cycles. A better estimate of such sensitivity is the average cyclical change net of the trend in employment growth. This can be measured by subtracting the average change during periods of contraction from that of expansionary periods. For the services division, the average cyclical change is only 2.7 percent, far below the 12.4-percent registered for the goods-producing sector. This indicates that there is some cyclical dimension in its growth rate, but clearly minimal when contrasted with the more sensitive goods-producing sector. The rest of the services-producing sector has a slightly higher average cyclical change—3.5 percent.

The behavior of the two largest components of this division, business and health services, is illustrative of the differences within the division. Health services display almost no cyclical sensitivity (1.0 percent), while business services show a relatively high degree (7.6 percent). While the sensitivity of business services appears to be more comparable to the goods-producing sector than to most other services industries, business services employment did not decrease during any recession. However, to conclude from the lack of employment declines alone that business services are recession-proof

**Table 3. Average annual rates of change in nonfarm payroll employment during postwar business cycle expansions and contractions, by selected industry divisions**

Business cycle expansions(E) and contractions(C)	Goods-producing sector	Services-producing sector, except the services division	Services industries		
			Total	Business	Health
November 1948 to October 1949(C) . . . .	-9.6	-1.3	1.0	( <sup>1</sup> )	( <sup>1</sup> )
October 1949 to July 1953(E) . . . . .	6.0	3.1	3.0	( <sup>1</sup> )	( <sup>1</sup> )
July 1953 to May 1954(C) . . . . .	-8.4	-4	1.8	( <sup>1</sup> )	( <sup>1</sup> )
May 1954 to August 1957(E) . . . . .	2.4	2.7	4.1	( <sup>1</sup> )	( <sup>1</sup> )
August 1957 to April 1958(C) . . . . .	-12.0	-2.3	-3	( <sup>1</sup> )	( <sup>1</sup> )
April 1958 to April 1960(E) . . . . .	3.6	3.2	4.6	10.0	6.6
April 1960 to February 1961(C) . . . . .	-6.0	-5	2.9	4.2	5.4
February 1961 to December 1969(E) . . . . .	2.4	3.9	5.9	12.4	9.6
December 1969 to November 1970(C) . . . . .	-6.0	1.7	2.4	2.4	6.7
November 1970 to November 1973(E) . . . . .	3.6	3.3	4.1	5.8	6.4
November 1973 to March 1975(C) . . . . .	-8.4	1.5	3.6	.7	6.8
March 1975 to January 1980(E) . . . . .	4.8	4.3	7.1	12.2	6.6
January 1980 to July 1980(C) . . . . .	-10.1	.6	3.2	2.6	6.4
Average for:					
All expansions . . . . .	3.8	3.4	4.8	10.1	7.3
All contractions . . . . .	-8.6	-1	2.1	2.5	6.3
Cyclical change net of trend . . . . .	12.4	3.5	2.7	7.6	1.0

<sup>1</sup> Data not available.

NOTE: Business cycle peaks and troughs are those designated by the National Bureau of Economic Research. Employment changes in the business and health services industries are based on unadjusted data, all others are seasonally adjusted. For method of calculation, see footnote 10 of this article.

would be misleading. Their rate of employment gain throughout economic downturns was much less than during expansionary periods. Should the present trend of rapid employment growth in this industry substantially change, its sensitivity to recessions could result in employment declines.

*Unemployed service workers.* An examination of cyclical trends in unemployment provides a different picture of the services division. In sharp contrast to the employment record, the cyclical pattern of unemployment in services almost matches the highly sensitive overall unemployment rate. The apparent paradox of both employment and unemployment increasing in services during economic contractions can be partly explained by examining the reasons for the latter.

Workers become unemployed for one of the following reasons: (1) from a layoff (caused by slack economic conditions) or a permanent separation; (2) from recently joining the labor force or reentering it; or by (3) quitting or leaving a job.

Typical of cyclically sensitive industries is a jump in unemployment caused by the loss of a job (especially from layoff) during a downturn. As business declines,

**Table 4. Experienced unemployed private wage-and-salary workers in the total nonagricultural and services industries by reason for unemployment, sex, and age, selected quarters, 1974-75**

Reason, sex, and age	Total, all industries				Services industries			
	I 1974	I 1975	Actual change	Percent of actual change	I 1974	I 1975	Actual change	Percent of actual change
Total, 16 years and over	3,885	6,790	2,905	100.0	686	997	311	100.0
Job losers	2,268	4,685	2,417	83.2	306	464	158	50.8
On layoff	888	2,207	1,319	45.4	80	131	51	16.4
Other job losers	1,380	2,478	1,098	37.8	226	333	107	34.4
Job leavers	644	648	4	.1	143	151	8	2.6
Reentrants	972	1,457	485	16.7	237	381	144	46.3
Men, 20 years and over	1,779	3,385	1,606	100.0	189	288	99	100.0
Job losers	1,329	2,815	1,486	92.5	123	198	75	75.8
On layoff	517	1,324	807	50.2	25	56	31	31.3
Other job losers	812	1,491	679	42.3	98	142	44	44.4
Job leavers	213	227	14	.9	29	38	9	9.1
Reentrants	237	342	105	6.5	37	52	15	15.2
Women, 20 years and over	1,374	2,385	1,011	100.0	378	542	164	100.0
Job losers	630	1,365	735	72.7	147	209	62	37.8
On layoff	271	683	412	40.8	46	58	12	7.3
Other job losers	359	682	323	32.0	101	151	50	30.5
Job leavers	273	279	6	.6	85	92	7	4.3
Reentrants	470	741	271	26.8	147	241	94	57.3

NOTE: Data are derived from the Current Population Survey.

companies cut back employment.

For example, this is reflected in the figures for the 1973-75 recession shown in table 4.<sup>10</sup> Overall, persons on layoff made up nearly half of the increase in unemployment between the first quarters of 1974 and 1975, reentrants for only about a sixth, and job leavers a negligible amount. The situation was reversed for the services division, with reentrants accounting for almost half the increase, and layoffs for only a sixth. However, there was contrasting behavior among men and women 20 years old and over. Among unemployed men in services, reentrants made up only 15.2 percent of the increase in unemployment; female reentrants accounted for 57.3 percent. Women traditionally have had less attachment to their jobs and are more likely to move in and out of the labor force than are men. As a result, the increase in unemployment in services during recessions is not because of any slack in the services industry, but is connected to employees (mostly women) who worked in it in the past and then reentered the labor force. Therefore, it would be a mistake to conclude from the overall unemployment figures alone that the services division is highly sensitive to cyclical fluctuations.

### Contributing to economic stability?

The suggestion by some economists that the growth of the services-producing sector might lead to a reduction in the severity of business downturns was referred to earlier. The argument was that cyclical declines in total employment would be reduced by the continued growth in the services-producing sector. An examination of the data during the postwar period shows that the stability of employment has improved. The net cyclical change in overall employment has declined from 7.3 percent in the 1940's and 1950's to 5.3 percent dur-

ing the 1960's and 1970's. This decrease in the cyclical nature of the economy is supported by the downward trend in relative recessionary employment cutbacks from peak to trough. (See table 5.) From a high of 5 percent during the 1948-49 recession, the drop in em-

**Table 5. Changes in nonfarm payroll employment from postwar business cycle peaks to troughs, by selected industry divisions, seasonally adjusted**

[Numbers in thousands]

Business cycles	Nonfarm payroll employment		Goods-producing sector	Services industries	Services industries as a percent of total less services
	Total	Less services industries			
November 1948 to October 1949:					
Actual change . . .	-2,260	-2,314	-2,018	54	...
Percent change . . .	-5.0	-5.8	-10.7	1.0	2.3
July 1953 to May 1954:					
Actual change . . .	-1,528	-1,613	-1,539	85	...
Percent change . . .	-3.0	-3.6	-7.2	1.5	5.3
August 1957 to April 1958:					
Actual change . . .	-2,131	-2,117	-1,676	-14	...
Percent change . . .	-4.0	-4.6	-8.0	-2	-7
April 1960 to February 1961:					
Actual change . . .	-1,188	-1,349	-1,162	161	...
Percent change . . .	-2.2	-2.9	-5.6	2.2	11.9
December 1969 to November 1970:					
Actual change . . .	-855	-1,105	-1,651	250	...
Percent change . . .	-1.2	-1.9	-6.8	2.2	22.6
November 1973 to March 1975:					
Actual change . . .	-1,438	-2,052	-2,736	614	...
Percent change . . .	-1.9	-3.2	-10.9	4.7	29.9
January 1980 to July 1980:					
Actual change . . .	-1,164	-1,462	-1,552	298	...
Percent change . . .	-1.3	-2.0	-5.8	1.7	20.4

ployment has been reduced to 1 to 2 percent for the last three recessions.<sup>11</sup>

One possible measure of the specific contribution of the services division to this improved overall economic performance is provided in table 5. The degree to which employment growth in services offsets the employment decline in the rest of the economy soared from 2.3 percent in 1948–49 to almost 30 percent during 1973–75.

An alternative approach is to compare the change in the percentage decline in employment caused by the services division vis-a-vis the total economy. As illustrated in columns 1 and 2 of the table, the addition of services reduces the decline by a fairly constant 0.7-percentage point. It was somewhat higher in the 1973–75 recession.

Although both measures indicate the stabilizing impact of the services division on the severity of economic downturns, this reduced sensitivity of employment to business cycles must be partially attributed to other changes in the economy. Even without services, the drop in employment would have been reduced by about 4 percentage points, and even the goods-producing sector showed improvement until the 1973–75 recession.

### Recession-proof, but with qualifications

Since 1948, the services division has experienced extraordinary growth and today accounts for almost one-fifth of total employment. This increase has been concentrated in two industries—business and health services. Employment in this division continues to be dominated by white-collar occupations, with higher-

than-average proportions of women, blacks, and part-timers.

The growth of services has been relatively immune to business downturns, with its employment declining in only 1 of 7 postwar recessions. Furthermore, the cyclical fluctuations in the division's employment growth rates are considerably smaller than those of the goods-producing sector. The combination of steady growth and relative cyclical insensitivity warrants the conclusion that this division is relatively recession-proof; however, certain qualifying factors are necessary. The rate of growth is reduced during downturns, and some components of this division are more cyclically sensitive than others. And unemployment associated with the industry is higher in times of recession, even though much of this increase stems from reentrance to the labor force.

However, it is more difficult to assess the impact of growth of the services division upon the rest of the economy. While services have contributed to economic stability by reducing the employment decline during recessions, the overall economy has exhibited this trend even on its own. Services employment has reduced the percentage drop in total employment during contractions by a fairly constant amount over time.

Any projection about the future behavior of this division must be made cautiously. Among other things, the component industries show considerable variability, both in rates of growth and cyclical sensitivity. Hence, it is quite possible that the overall behavior of the division will change with its composition. □

#### FOOTNOTES

<sup>1</sup> See Victor Fuchs, *The Service Economy* (New York, National Bureau of Economic Research, 1968); George Stigler, *Trends in Employment in the Service Industries* (Princeton, Princeton University Press, 1956); Edward F. Denison, "Shift to Services and the Rate of Productivity Change," *Survey of Current Business*, October 1973, pp. 20–35; and Thomas M. Stanback, *Understanding the Service Economy* (Johns Hopkins University Press, 1979).

<sup>2</sup> Arthur Burns, "Progress Towards Economic Stability," *American Economic Review*, March 1960, pp. 6–7; Fuchs, *The Service Economy*, ch. 7. Fuchs has argued that the shift in employment between 1929 and 1965 has reduced the cyclical volatility of the economy by 15 percent (p. 181). For the potential negative impact of services on the growth rate of productivity see John W. Kendrick, "Productivity Trends and Prospects," *U.S. Economic Growth from 1976–1986: Prospects, Problems and Patterns* (Joint Economic Committee of Congress, October 1, 1976); Denison, *Survey of Current Business*. However, Denison has questioned the analytic utility of the division of the total economy into two sectors, goods- and services-producing. He failed to find "any characteristic, except possibly the holding of inventories, to which a commodity-service classification corresponds at all closely." (See p. 22.) Thus, a classification of major industry components by cyclical sensitivity would not agree with the goods-services breakdown. For example, transportation, communication, and public utilities all show considerable volatility. Denison also argues that if you exclude government there has been no dramatic shift to services.

<sup>3</sup> The goods-producing sector includes mining, construction, and manufacturing. When agriculture is included, it is part of the goods-producing sector.

<sup>4</sup> The services division is not to be confused with the service occupation, which refers to employees whose major work activity is providing services. About two-thirds of all service workers are employed in the services division, but only about one-fourth of all employees in this division are service workers. Most of the others are professional and clerical workers.

<sup>5</sup> The two independent employment series published by BLS—the household data from the Current Population Survey and the payroll data from the Current Employment Statistics program (establishment survey)—are somewhat different in concept and definition. Because it provides more precise information on the industrial composition of employment, and because its estimates are more reliable for examining month-to-month changes, the payroll survey is used to examine secular and cyclical trends. However, the payroll survey includes practically no information on the demographic characteristics of the labor force, and excludes the self-employed and the unemployed. In this area, the household survey is used. The establishment survey provides an estimate of the total number of nonagricultural wage-and-salary jobs. The household survey is more comprehensive and covers all jobholders. Besides wage-and-salary workers, it includes the self-employed, unpaid family workers, private household workers, and agricultural workers. For a detailed comparison of the two series, see Gloria P. Green, "Comparing employment estimates from household and payroll surveys," *Monthly Labor Review*, December 1969, pp. 9–20.

<sup>6</sup> According to the payroll survey, there were 17,736,000 persons employed in the services division in 1980. In contrast, the household series shows an employment level of 27,983,000 in services industries.

This larger estimate from the household survey results from the inclusion of several categories (private household workers, public education, and the self-employed) not included in the payroll series. Subtracting these categories reduces the estimate of services industry employment in the household survey to 18,037,000.

<sup>7</sup>Data on most two-digit industries do not exist prior to 1972. At that time, the Standard Industrial Classification system (SIC) was revised. For services, the major impact of the reclassification is the exclusion of approximately 60,000 employees in the forestry, fisheries, and agricultural services industries. Other changes affected the distribution of employment among the two-digit industries included in the services division. For example, data processing was shifted from SIC 89 (miscellaneous services) to SIC 73 (business services). Social services, SIC 83, was added as a new industry. A major revision was also introduced in 1961, with minor revisions in 1958, 1963, and 1967. All historical series have been changed to reflect these changes. However, some series could not be reconstructed before the revisions, and this explains the unavailability of specific industry data in table 2. For more information on SIC revisions, see the October 1978 issue of *Employment and Earnings*, pp. 8-32.

<sup>8</sup>A similar point can be made about other service industries. Denison, for one, argues it is a general problem in evaluating any shift to service employment.

<sup>9</sup>The table is based on the procedure used by Fuchs. Briefly, the rate of change for an expansion is measured from a 3-month average centered on a trough to a 3-month average centered on a peak. The percentage change is divided by the number of months from peak to trough and multiplied by 12 to provide an annual average. A similar procedure is used for contractions. According to Fuchs, the difference in rate of change between an expansion and contraction provides a measure of the cyclical change net of the trend in employment. See Fuchs, *The Service Economy*, p. 162.

<sup>10</sup>The 1973-75 recession, the most serious in the postwar period, was chosen to illustrate the differential impact of an economic downturn on services as compared with the overall economy. Using quarterly averages from the same quarters in each year avoids some of the problems caused by seasonality. The business cycle peak occurred during fourth-quarter 1973. This should not affect the comparisons being made.

<sup>11</sup>At least part of this improvement reflects roughly similar magnitudes of employment declines in the cyclically sensitive goods-producing sector (except for 1973-75), while the size of the employment base has increased over time.

---

### Work from society's perspective

Complicating an evaluation of the youth unemployment issue is that, from society's perspective, working year-round, full time is not necessarily the most desirable activity for a young person. For prime age males, the social ordering of activities is clear; working year-round, full time is the desired role. For young people, particularly for teenagers, being in school may be preferable, from society's perspective, to working. To some, military service also ranks above civilian employment. For young females, child rearing may be more favorable than working.

—MICHAEL L. WACHTER, "The Dimensions and Complexities of the Youth Unemployment Problem," in Bernard E. Anderson and Isabel V. Sawhill, eds., *Youth Employment and Public Policy* (New York, The American Assembly, Columbia University, 1980), p. 48.

---

# Government employment: an era of slow growth

*Since 1975, public payrolls have grown slower than private ones, as government created a smaller share of nonfarm jobs; in 1950–75, States and localities raised their percentage of the total work force, with the Federal portion stabilizing*

JOHN T. TUCKER

Since 1975, the growth pattern of government employment has been changing. According to data from the Bureau of Labor Statistics' Current Employment Statistics program, government, while showing modest job growth at all levels, has not kept pace with job growth in the private sector of the economy. However, in 1950–75, the opposite was true. During that time, government accounted for 1 out of every 4 new jobs in the nonfarm economy, contributing to widespread public belief that government, especially the Federal government, is too large.

Particularly striking is the change in the pattern of growth of State and local government. Although States and localities have decreased their share of nonfarm jobs since 1975, as has the Federal Government, they increased their portion from 9.1 percent in 1950 to 15.5 percent in 1975. During that period, the Federal share of nonfarm employment was relatively stable, dropping from 4.3 percent to 3.6.

## Reversal in long-term trends

The long-term trend has been for government employment to grow faster than that of the private sector

---

John T. Tucker is a division chief in the Office of Employment Structure and Trends, Bureau of Labor Statistics. The outlook section was written by Valerie A. Personick, an economist in the Office of Economic Growth and Employment Projections, Bureau of Labor Statistics.

(table 1). In 1920, government accounted for 9.5 percent of all nonfarm jobs, and this share doubled to 19.1 percent by 1975 (chart 1). Also, the upward trend in government's share of jobs was fairly stable over this entire period except for the large employment bulges in the Federal Government during both World War II and the Korean War.

*The three levels.* In analyzing this long-term trend, it is useful to view separately the trend of the three levels of government: Federal, State, and local. The Federal Government, for example, has exhibited a long-term decline in its share of jobs, according to chart 1. After a significant increase during the 1930's, followed by the rapid build-up during World War II and subsequent decline, a phenomenon repeated to a lesser extent during and after the Korean War, the Federal Government has had a steadily decreasing portion of nonfarm jobs. Its share of jobs dropped to 3.1 percent during the first quarter of 1981.

The total State and local government portion of jobs held relatively steady at about 10 percent during 1930–55 except for a drop during World War II and the Korean War. During 1955–75, however, State and local government employment increased rapidly, far outstripping job growth in the private sector. In 1975, its share peaked at 15.5 percent, but since then has been dropping slowly but steadily, and by the first quarter of

1981 was at 15.1 percent. (The percentage of government jobs for 1980 is slightly exaggerated because of the recession, when employment declined in goods-producing industries but not in services.)

Some of the employment growth at the State and local government levels can be attributed to Federal Government funding of programs through grants to States and localities, for the administration of programs such as welfare, health, education, and job training. During fiscal year 1980, such aid amounted to \$86.7 billion, almost 23 percent of State and local government total revenues.<sup>1</sup>

States increased their share of the Nation's government jobs from 2.3 percent in 1955 (the earliest year that the Bureau has separate data for States on one hand and local government on the other), to a record 4.1 percent during 1975-77 (table 2). Since 1977, State government's share had remained relatively stable, dropping slightly, to 3.9 percent by early 1981. The number of education jobs grew rapidly during 1955-75, by more than 1 million. This growth slowed considerably during 1975-80, when only 62,000 additional jobs were created.

*Largest increase.* Localities registered the largest employment growth of any government level, increasing

their share of jobs from 7 percent in 1955 to a record 11.4 percent in 1975. This translates into 5.2 million new jobs, of which 3 million were in education. Since 1975, localities' share of government employment has declined, and was at 10.7 percent in early 1981. Job growth in local education has slowed considerably in recent years. Only 357,000 jobs were added during 1975-80 compared to 830,000 during 1970-75 and 900,000 during 1965-70.

The decline in the rate of job growth in local education is related to primary and secondary schools having fewer students than before. Enrollment peaked in 1971, has declined since then, and is projected to continue declining through the mid-1980's.<sup>2</sup> The decline in enrollment was not strong enough during 1971-75 to offset other factors that cause educational employment to grow, such as smaller class sizes, increases in special education programs, and growth in nonteaching staff. By 1975, however, the smaller enrollments began to influence overall local education employment trends.

Apparently, the growth in Federal grants that translate into jobs has bolstered the number of local government jobs during the mid and late 1970's, when the number might otherwise have declined, due to demographic factors and State-enacted tax limitation laws. For example, the Public Service Employees program<sup>3</sup> began with small Federal grants designed to provide funds to local government, which in turn was to provide unemployed persons with meaningful work. The program grew slowly and sporadically from its inception in 1972 until May 1977, funding between 40,000 and 370,000 additional jobs at the local level. After May 1977, the program expanded rapidly, peaking at more than 750,000 jobs by March 1978. Since then, such jobs have declined, leveling at about 300,000 by the beginning of 1981; the program is scheduled to be phased out completely by the end of 1981. The program required local government agencies to hire employees to perform needed functions, which could not otherwise be performed through existing local government revenues. Therefore, the program's impact on employment levels was direct, and unless other funding sources are found, its demise will likely mean a real loss of jobs in local government.

### State-by-State comparisons

Government employment, as a percent of nonfarm employment, increased in nearly every State at each 5-year interval between 1950 and 1970. Between 1970 and 1975, the percentage increased in 33 States and in the District of Columbia. Between 1975 and 1980, 42 States and the District of Columbia reported declining percentages (table 3).

The percentage range by State varied in 1980, from 12.8 in Connecticut to 45.8 in the District of Columbia, whose high percentage is because of the many Federal

**Table 1. Government employment relative to total nonfarm employment, 1920-81**

[Numbers in thousands]

Year	Number of nonfarm jobs	Total		Federal		State and local	
		Number	Percent of nonfarm	Number	Percent of nonfarm	Number	Percent of nonfarm
1920	27,340	2,603	9.5	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
1925	28,766	2,800	9.7	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
1930	29,409	3,148	10.7	526	1.8	2,622	8.9
1935	27,039	3,481	12.9	753	2.8	2,728	10.1
1940	32,361	4,202	13.0	996	3.1	3,206	9.9
1944 <sup>2</sup>	41,864	6,043	14.4	2,928	7.0	3,116	7.4
1945	40,374	5,944	14.7	2,808	7.0	3,137	7.8
1950	45,197	6,026	13.3	1,928	4.3	4,098	9.1
1952 <sup>3</sup>	48,793	6,609	13.5	2,420	5.0	4,188	8.6
1955	50,641	6,914	13.7	2,187	4.3	4,727	9.3
1960	54,189	8,353	15.4	2,270	4.2	6,083	11.2
1965	60,765	10,074	16.6	2,378	3.9	7,696	12.7
1970	70,880	12,554	17.7	2,731	3.9	9,823	13.9
1971	71,214	12,881	18.1	2,696	3.8	10,185	14.3
1972	73,675	13,334	18.1	2,684	3.6	10,649	14.5
1973	76,790	13,732	17.9	2,663	3.5	11,068	14.4
1974	78,265	14,170	18.1	2,724	3.5	11,446	14.6
1975	76,945	14,686	19.1	2,748	3.6	11,937	15.5
1976	79,382	14,871	18.7	2,733	3.4	12,138	15.3
1977	82,471	15,127	18.3	2,727	3.3	12,399	15.0
1978	86,697	15,672	18.1	2,753	3.2	12,919	14.9
1979	89,823	15,947	17.8	2,773	3.1	13,174	14.7
1980	90,564	16,249	17.9	2,866	3.2	13,383	14.8
1981 first quarter	90,282	16,389	18.0	2,772	3.1	13,617	15.1

<sup>1</sup> Data not available.

<sup>2</sup> Height of World War II.

<sup>3</sup> Height of Korean War.

**Table 2. Trends in State and local government employment relative to total nonfarm employment, selected years, 1955-80**

[Numbers in thousands]

Year	State			Local		
	Total number	Percent of nonfarm	Number in education	Total number	Percent of nonfarm	Number in education
1955	1,168	2.3	308	3,558	7.0	1,792
1960	1,536	2.8	448	4,547	8.4	2,369
1965	1,996	3.3	679	5,700	9.4	3,102
1970	2,664	3.8	1,104	7,158	10.1	4,004
1971	2,747	3.9	1,149	7,437	10.4	4,188
1972	2,859	3.9	1,188	7,790	10.6	4,363
1973	2,923	3.8	1,205	8,146	10.6	4,537
1974	3,039	3.9	1,267	8,407	10.7	4,692
1975	3,179	4.1	1,323	8,758	11.4	4,834
1976	3,273	4.1	1,371	8,865	11.2	4,899
1977	3,377	4.1	1,385	9,023	10.9	4,974
1978	3,474	4.0	1,367	9,446	10.9	5,075
1979	3,541	3.9	1,378	9,633	10.7	5,107
1980	3,590	4.0	1,385	9,793	10.8	5,191

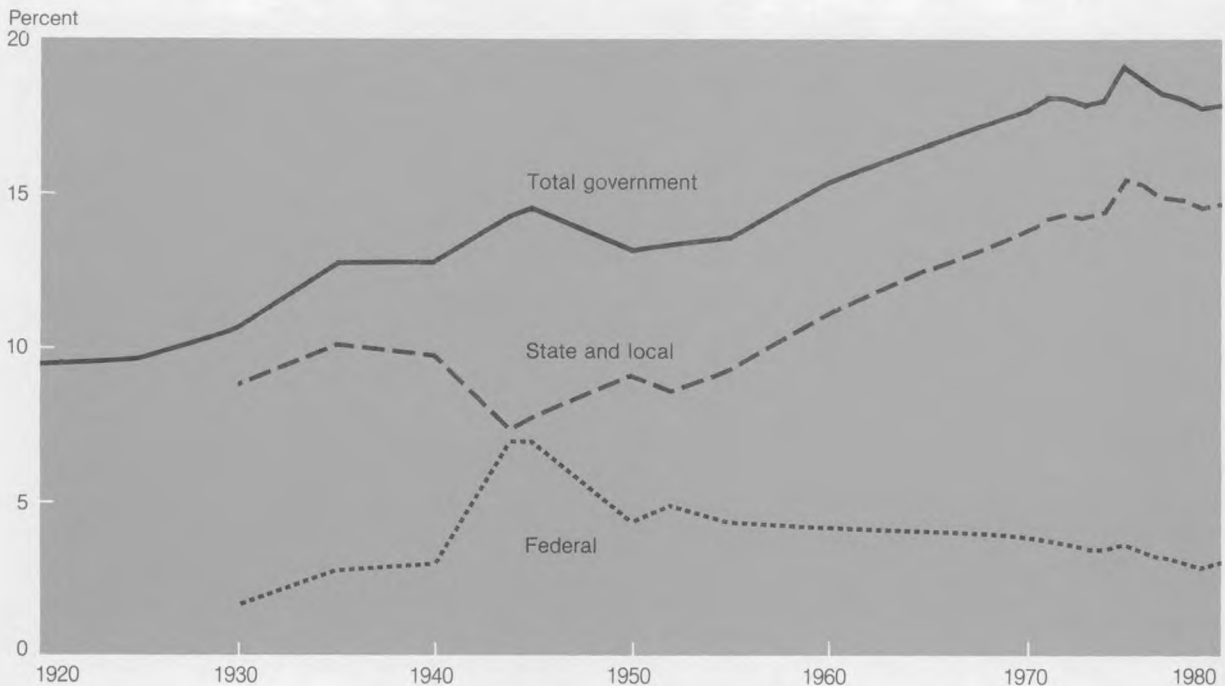
agencies headquartered there. Three other States: Alaska, Montana, and New Mexico, also had a noticeable concentration (more than 25 percent) of government jobs. If the District of Columbia and these three States had the same share of Federal Government jobs as the Nation as a whole, 3.1 percent, none would have government accounting for as much as 25 percent of total nonfarm jobs. The four States with the lowest percentages of government jobs: Connecticut, Nevada, New

Hampshire, and Rhode Island, have less than 3.1 percent Federal Government jobs. But the absence of an equal share of Federal jobs would not markedly affect their ranking among all States, as having the lowest percentages of government employment.

Other States with high concentrations of Federal jobs include: Alabama, Hawaii, Maryland, Utah, and Virginia. All have 5 percent or more of their jobs in the Federal Government. The concentration of Federal jobs in Maryland and Virginia is because of the contiguity of those States to Washington, D.C. Both Maryland and Virginia have counties adjacent to the Federal city, and many Federal installations are in those suburbs. In addition, Virginia has concentrations of Federal civilian jobs at military installations in Norfolk and Newport News. The presence of military installations also helps explain the high percentages of Federal jobs in Alabama, Hawaii, and Utah. States with the smallest share of Federal jobs, less than 2 percent, are: Connecticut, Michigan, Minnesota, New Hampshire, and Wisconsin.

State-by-State analysis indicates that in 40 States, State and local government percentages of nonfarm jobs range between 13 and 19.9 percent. The District of Columbia and five States: Connecticut, Nevada, New Hampshire, Pennsylvania, and Rhode Island are at the low end of the scale, with less than 13 percent of their jobs in State and local government. Alaska, Montana,

**Chart 1. Government jobs as percentages of nonagricultural jobs, 1920-80**



New Mexico, North Dakota, and South Dakota are at the high end with more than 20 percent of their jobs in State and local government. In the Dakotas, this is partly because of the greater proportion of agriculture than exists in most States, making the number of government jobs, many of which serve private agriculture, larger with respect to private nonfarm jobs. These rankings cannot be explained by any single factor. The low percentage of State and local government jobs in D.C. is because many normally State and local functions are performed there by Federal agencies. Population growth rates may partially explain the variations, because 4 of the 5 States with low percentages are in the Northeast, which has been losing population, whereas 3 of the 5

States with the highest percentages are in the West, which has been gaining population rapidly.

### Government as a service supplier

The long-term employment trend in the United States continues to show a growth of service producing jobs (chart 2). Government employment is considered part of the service-producing economy, although some government jobs involve activities that would be considered goods-producing in the private sector. Although this grouping is largely accurate, some government employment is in industries that produce goods and that are normally in the private sector. For example, printing operations would be classified as goods-producing when

**Table 3. Percentage of nonfarm workforce employed in government, by State, selected years, 1950-80, and other trends in government employment, 1980**

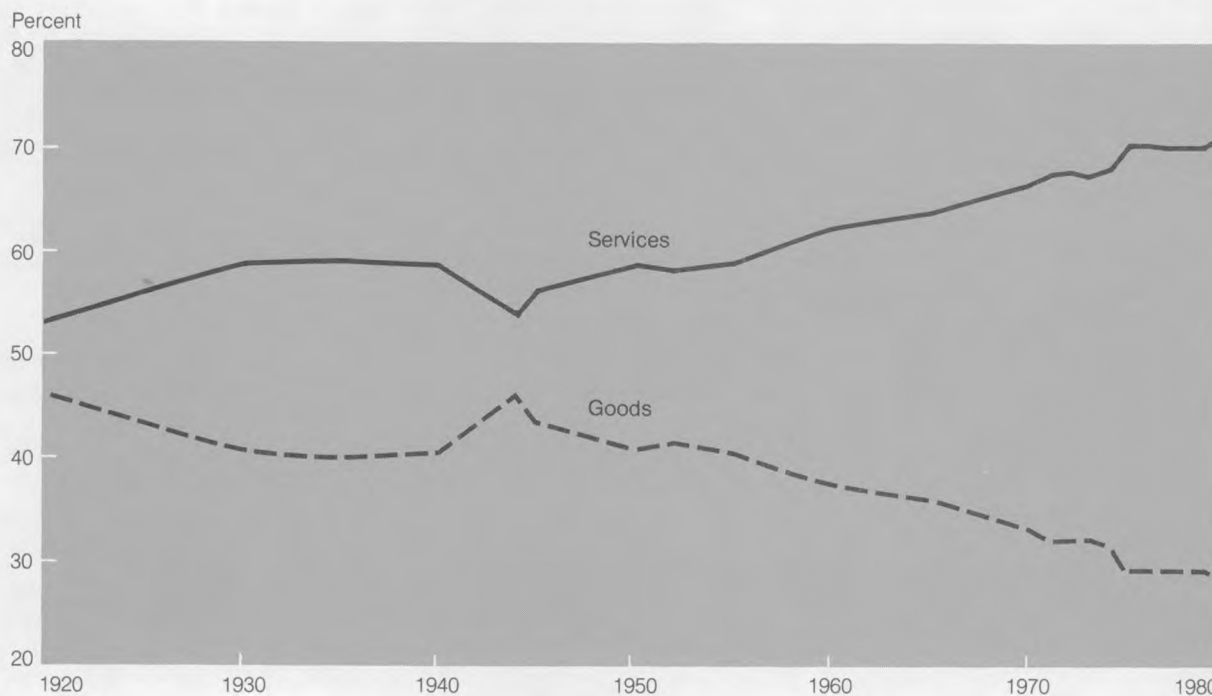
[Numbers in thousands]

State	1950	1955	1960	1965	1970	1975	1980	Total nonfarm	Federal		State and local	
									Number	Percent of nonfarm	Number	Percent of nonfarm
Alabama	15.8	18.5	20.6	20.2	20.7	21.2	22.0	1,358	67	5.0	231	17.1
Alaska	( <sup>1</sup> )	( <sup>1</sup> )	39.8	42.1	38.2	29.5	32.5	169	17	10.5	37	22.2
Arizona	21.4	19.9	20.4	22.8	21.8	23.3	20.1	1,003	38	3.9	162	16.2
Arkansas	17.3	18.0	19.1	18.5	19.2	19.4	19.0	744	21	2.8	120	16.2
California	16.6	16.7	17.9	19.1	20.5	21.3	18.0	9,837	330	3.4	1,436	14.6
Colorado	18.7	19.7	21.3	23.0	23.6	22.5	19.4	1,251	52	4.2	190	15.2
Connecticut	8.6	9.1	10.2	11.2	13.2	14.6	12.8	1,424	22	1.6	160	11.3
Delaware	8.8	10.3	12.2	13.6	16.1	17.5	17.5	258	5	2.2	39	15.2
District of Columbia	49.6	50.1	45.6	45.9	44.1	46.8	45.8	615	228	37.1	53	8.7
Florida	16.9	16.3	16.7	18.6	18.5	19.9	17.3	3,570	89	2.5	526	14.8
Georgia	15.0	15.6	17.7	17.7	19.1	20.2	20.1	2,146	86	4.0	344	16.1
Hawaii	( <sup>1</sup> )	( <sup>1</sup> )	26.2	26.3	25.1	23.9	22.0	404	30	7.4	59	14.6
Idaho	18.9	19.1	21.1	22.3	23.6	22.8	20.9	331	12	3.8	56	17.0
Illinois	9.9	10.7	11.8	12.9	14.7	16.2	15.6	4,892	109	2.2	654	13.4
Indiana	10.8	11.4	13.2	14.2	15.5	16.7	16.6	2,137	42	2.0	312	14.6
Iowa	16.5	16.3	17.2	18.5	20.1	19.2	18.8	1,101	21	2.0	185	16.8
Kansas	17.2	17.4	20.4	21.7	22.6	21.1	19.9	949	26	2.8	161	17.1
Kentucky	14.6	16.1	16.8	17.8	19.0	20.2	19.3	1,209	43	3.6	190	15.7
Louisiana	16.0	16.9	18.5	19.1	20.6	19.9	19.5	1,571	35	2.3	270	17.2
Maine	14.7	15.2	17.4	18.4	20.0	21.0	19.9	419	18	4.4	64	15.5
Maryland	13.6	14.8	15.9	17.3	22.3	24.7	24.0	1,695	135	8.0	272	16.0
Massachusetts	11.8	12.2	13.0	13.8	14.1	16.1	15.5	2,647	58	2.2	352	13.3
Michigan	10.3	10.2	14.2	14.7	16.8	18.6	18.2	3,454	58	1.7	569	16.5
Minnesota	14.4	14.6	15.6	17.6	17.9	18.4	17.0	1,770	32	1.9	268	15.2
Mississippi	20.6	20.0	21.7	21.6	22.5	22.2	23.5	830	30	3.7	164	19.8
Missouri	12.7	13.0	14.1	15.2	17.0	18.2	17.2	1,969	68	3.5	269	13.7
Montana	19.2	19.3	23.3	25.6	26.4	27.3	25.2	280	14	5.0	56	20.1
Nebraska	19.6	20.7	21.0	22.1	21.6	22.4	20.8	630	16	2.6	114	18.2
Nevada	20.1	16.1	18.2	18.2	18.2	17.3	14.3	399	10	2.7	46	11.7
New Hampshire	11.6	10.7	12.8	13.6	14.4	16.4	14.8	384	7	1.8	49	12.9
New Jersey	10.3	11.1	12.0	13.1	14.4	17.4	17.2	3,053	75	2.5	449	14.7
New Mexico	22.1	25.4	26.9	28.7	30.5	28.3	26.9	462	29	6.5	94	20.4
New York	11.7	12.4	13.6	14.7	17.0	19.4	18.2	7,204	168	2.3	1,145	15.9
North Carolina	12.0	13.0	13.7	14.1	14.8	16.6	17.2	2,385	49	2.1	361	15.2
North Dakota	22.4	22.7	24.8	27.6	30.1	26.8	24.8	245	9	4.0	51	20.8
Ohio	10.7	11.0	12.7	13.6	14.6	15.6	15.7	4,398	92	2.1	596	13.6
Oklahoma	19.2	21.2	21.6	22.7	23.2	22.9	19.8	1,135	47	4.2	177	15.6
Oregon	14.6	15.7	18.7	19.4	20.6	21.1	19.4	1,041	30	2.9	172	16.5
Pennsylvania	9.3	10.6	11.7	13.0	14.2	16.3	15.3	4,753	133	2.8	594	12.5
Rhode Island	10.7	12.5	13.7	14.6	15.6	16.2	15.0	398	9	2.3	50	12.7
South Carolina	13.9	15.5	16.5	16.2	17.8	20.3	20.0	1,187	37	3.2	199	16.8
South Dakota	23.7	24.5	27.3	30.0	30.3	26.6	24.6	237	10	4.6	47	20.0
Tennessee	14.6	14.8	15.8	16.7	17.0	18.0	18.1	1,734	74	4.3	240	13.9
Texas	15.1	15.6	17.0	17.9	18.3	18.3	17.0	5,861	167	2.8	831	14.2
Utah	23.3	24.0	23.7	26.5	28.0	25.1	22.8	554	37	6.7	88	16.0
Vermont	14.1	14.7	16.0	16.7	17.7	18.8	18.4	199	4	2.3	32	16.1
Virginia	17.7	18.8	18.8	19.0	23.4	23.8	23.9	2,120	156	7.4	351	16.6
Washington	19.6	20.3	20.5	21.5	22.7	22.9	20.6	1,606	68	4.3	261	16.3
West Virginia	11.3	12.8	14.7	17.1	18.6	18.8	20.7	645	17	2.6	116	18.0
Wisconsin	11.8	11.8	13.7	15.1	17.3	17.0	16.5	1,944	28	1.5	293	15.1
Wyoming	19.6	21.2	22.1	26.5	26.2	23.6	20.6	205	7	3.7	34	16.9

<sup>1</sup> Data not available.



Chart 2. Percentages of nonagricultural jobs producing goods and services, 1920-80



privately owned. Similarly, the Federal Government operates shipbuilding and repairing facilities, employing about 58,000 workers, that would be classified as goods-producing if in the private sector. More than 200,000 government workers are in highway building and repairing; water, sewer, pipeline, and power line construction, and building alterations, which, in the private sector, would be classified as being in construction, a goods-producing industry.

Despite the problems of classifying all government jobs as service-producing when a small portion would be more correctly classified as goods-producing, it is useful to compare the trends of government employment to those of some growth sectors in the services portion of the economy. Three major private industry components classified as service-producing have increased their share of the Nation's nonfarm jobs: wholesale and retail trade; services; and finance, insurance, and real estate. Wholesale and retail trade increased its share of jobs from 20.8 percent in 1955 to 22.6 percent by early 1981. Services has risen from 12.3 percent to 20.2 percent. Finance, insurance, and real estate has risen from 4.5 percent to 5.8 percent. Unlike government, these growing services show no evidence of a slowdown in their growth rates in recent years; they continue to gain larger shares of the Nation's job market (chart 3).

If government is involved in so many service-produc-

ing activities shared with the private sector, why were the employment growth trends of the two sectors different during 1975-80, after having decades of like trends? Perhaps private services are more diversified than government, whose concentrated role in education, for example, would affect it seriously because of the declining school enrollments in recent years. The private sector also has a large education component, 1.1 million jobs, but these represent only 6 percent of services while education accounts for 48.8 percent of State and local government jobs.

Private medical services including hospitals; private physicians and dentists; and other services, such as medical laboratories, nursing, blood banks, and nursing convalescent homes, all continue very rapid job growth. These services fill 5.2 million jobs, representing 29.3 percent of all service jobs. Government provides fewer medical services, with 1.4 million hospital jobs, 32.6 percent of all government jobs. Finally, one of the fastest growing industries—business services—is almost exclusively in the private sector. This industry includes janitorial, computer and data processing services, photocopying, temporary office help, equipment rental and leasing, and other related services. Business services has tripled since 1960 and provided 3.1 million jobs by early 1981. It provides services to all levels of government as well as to the private sector.

### Outlook for government jobs

Recent employment projections for the 1980's, issued by BLS, assume that the number of government jobs, although growing, will represent a smaller share of total nonfarm employment.<sup>4</sup> The public sector portion is expected to shrink from 17.9 percent in 1980 to between 15.4 and 16.3 percent by 1990. The projected decline reflects demographic trends and an assumed policy of cutbacks in the size of government programs.

Three alternative scenarios for public and private employment growth were prepared by BLS. The low-trend version is marked by a slowdown in the rate of labor force expansion and only moderate improvements in prices and productivity. High-trend version I assumes accelerated labor force growth, lower unemployment, and much greater improvements in prices and productivity. High-trend version II assumes accelerated labor force growth, lower unemployment, and much greater improvements in prices and productivity. The third alternative, high-trend version II, is characterized by the rapid output growth of high-trend I, but assumes the same labor force as the low-trend version. It also assumes less government employment than do the other two models.

In the Federal Government, civilian employment is

expected to change from 2.87 million in 1980 to 3.06 million by 1990 in the low-trend version, to 3.13 million in high-trend I, and 2.85 million in high-trend II. In all cases, the annual rate of change is considerably below that projected for the private nonfarm sector. The percentages are:

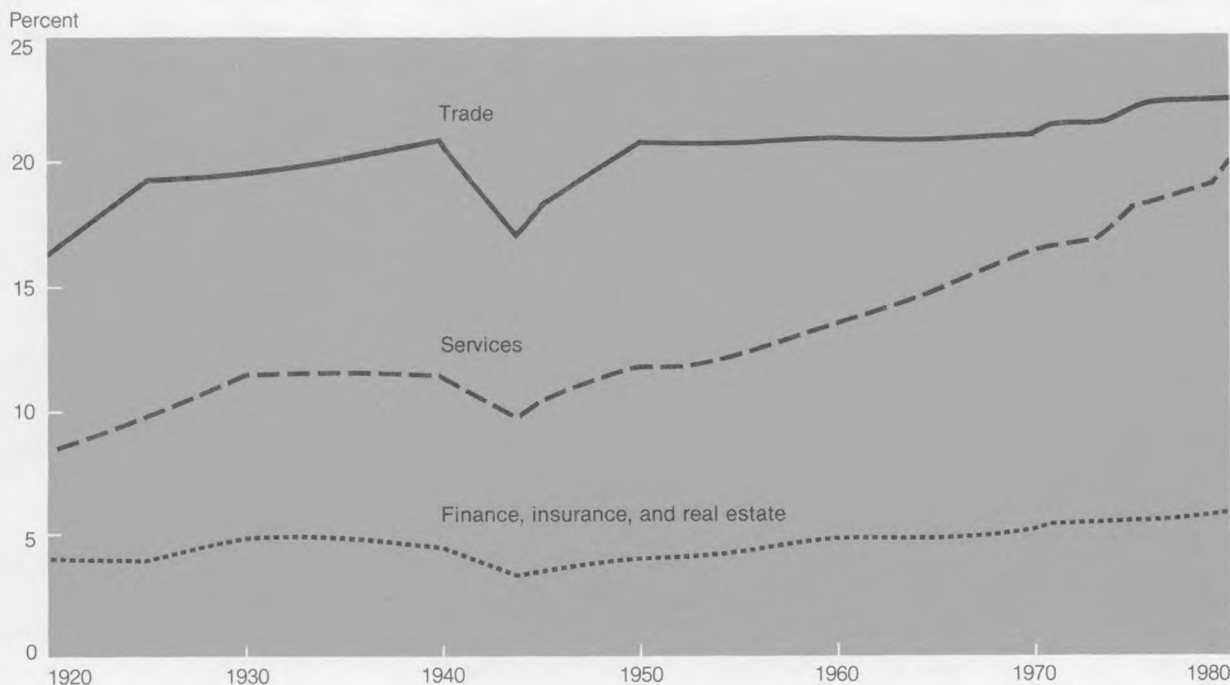
	Low	High I	High II
Federal Government . . .	0.6	0.9	-0.1
Private . . . . .	1.9	2.7	2.1

Within the Federal workforce, all three models show gains in the civilian portion of defense, but the gains are offset by cutbacks elsewhere.

Projected employment in State and local government shows a mixed pattern. Job levels in education are expected to remain stable through 1985 and then drop, while employment in other areas of State and local government is expected to rise consistently throughout the decade.

The path of educational employment, which is identical in all three models, mirrors the trend expected in school enrollment. The children of the baby-boom era will buoy demand for educational personnel at least through the middle of the decade, but lower birth rates will eventually lead to a decline in the number of school-age children, and consequently in education jobs.<sup>5</sup>

**Chart 3. Percentages of nonagricultural jobs in selected sectors of the economy, 1920-80**



Employment in public education is expected to fall to 6.41 million by 1990 from the 1980 level of 6.58 million.

State and local jobs in noneducation functions are expected to rise from 6.81 million in 1980 to between 8.05 and 8.16 million by 1990, but the rate of increase does not equal that of recent decades. The slowdown reflects assumptions of cutbacks in many government programs in the coming years. Real grants-in-aid to State and local governments, especially for highways and in general revenue sharing, are assumed to decline

during the decade in all models, by 1.9 percent a year in the low-trend version and 0.9 percent in the two high-trend versions. In addition, net interest payments and subsidies to government enterprises (in real terms) are assumed to show no increase at all throughout the projection period. Another possible factor is revenue limitations imposed by events such as Proposition 13 in California. As a result of all these factors combined, State and local government is projected to decline to between 12.7 and 13.4 percent of the nonfarm economy by 1990, compared to 14.8 percent in 1980. □

— FOOTNOTES —

<sup>1</sup> *Economic Report of the President* (Washington, Superintendent of Documents, 1981), pp 318–19.

<sup>2</sup> *Projections of Education Statistics to 1986–87* (National Center for Education Statistics, 1978), p. 18.

<sup>3</sup> This was established under Titles II and VI of the Comprehensive Employment and Training Act of 1978.

<sup>4</sup> See Valerie A. Personick, "The outlook for industry output and employment through 1990," *Monthly Labor Review*, August 1981, pp. 28–41.

<sup>5</sup> *Projections of the Population of the United States: 1977 to 2050*, Current Population Reports, Series P–25, No. 704 (Washington, Bureau of the Census, 1977).

---

#### A note on communications

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

---

# BLS develops measure of job risk by occupation

*New statistic relates injury incidence and employment by occupation within economic sectors and industry divisions; such data should help target those workers most prone to job-related accidents and illnesses*

NORMAN ROOT AND DEBORAH SEBASTIAN

As one might expect, blue-collar workers generally experience more job-related injuries<sup>1</sup> than white-collar employees, in both relative and absolute terms. What is surprising, however, is the magnitude of this difference between the two groups. A new injury index by occupation indicates that laborers had injuries at a level almost four times the average while operatives and craftworkers incurred injuries at about one-and-a-half times the norm. On the other hand, professional and technical workers, managers and administrators, salesworkers, and clerical workers were subject to injuries at a level about one-fourth the average. However, a number of white- and blue-collar occupations had indexes different from those of the broad occupational group to which they belong.

Since the inception of the Supplementary Data System (SDS) program in 1976, there has been a demand for injury incidence rates by occupation, which are more accurate measures of risk than simple frequencies because they eliminate the effects of employment size. The absence of occupational exposure data, differences in State workers' compensation coverage and reporting requirements,<sup>2</sup> and the lack of a complete universe of States in SDS program prevented the development of

occupational incidence rates comparable to the industry incidence rates derived from the Bureau of Labor Statistics' Annual Survey of Occupational Injuries and Illnesses.<sup>3</sup>

In lieu of an injury incidence rate for occupations, the Bureau has developed an index that is a relative measure of occupational risk based on the percent distributions of employment and injuries. Although it does not have the precision of an incidence rate, the index provides a valid measure of hazardousness for an occupation in an industry.

## Scope and method of the analysis

The 1978 work injury data for this study were obtained from 25 States which provided current case information from their workers' compensation records for the Supplementary Data System.<sup>4</sup> (A current case involves an injury or illness which occurred or was reported during the reference year.) The data are not strictly additive because of variations in State laws regarding workers' compensation coverage and reporting requirements. The primary difference is that some States require employers to report all work-related injuries regardless of severity while other States require reports only of injuries involving some minimum number of days of disability, ranging from 1 to 8. Despite the resulting differences in the numbers of cases among States the percentage distributions of injuries and affected oc-

---

Norman Root is a division chief and Deborah Sebastian is an economist in the Office of Occupational Safety and Health Statistics, Bureau of Labor Statistics.

occupations are relatively consistent across the States—patterns we have observed in 3 consecutive years of data from nearly 30 States and statistically tested for this analysis.<sup>5</sup> Our observations and tests, and the geographic and industrial diversity of the States included in this study, support our thesis that these data are representative of the national experience.

The employment counts are from the Bureau's 1978 National Industry Occupational-Employment Matrix, which identifies wage-and-salary workers in the private sector by occupation.<sup>6</sup> The wage-and-salary worker group corresponds most closely to the class of employee covered under State workers' compensation laws. Railroad and maritime-related occupations are excluded from the data because they generally are not covered by State workers' compensation laws. Similarly, farming and private household occupations are excluded because of large coverage gaps in many States.

The percentage distributions of injuries and of employment by occupation for a given industrial category are used in computing the ratio index. The formula is: percentage of injuries accounted for by the occupation divided by the corresponding percentage of employment. The universe totals—all injuries and all employment within the industrial category—are 100 percent each, and yield an index of 1. An occupational index greater than 1 indicates that the percentage of injuries is greater than the percentage of employment in the job, and a ratio smaller than 1 indicates the opposite. Thus, the index measures injury experience for a worker group against the base of 1 for all occupations in the given industry division or sector.

Because absolute numbers are not used, the discrete indexes are valid only within each industrial category. For example, an index of 4.11 for laborers in manufacturing does not mean that these workers are more than twice as likely to have injuries than laborers in construction with an index of 1.78. Construction as a whole has a higher injury incidence rate than that for manufacturing, but because the total index for each of these industry divisions is equal to 1, the indexes of component occupations do not reflect general differences in risk between the divisions. In other words, a job with an index of 1 has an incidence rate equal to that of the industrial category in which it is located; an index of 4 would indicate that the occupation is experiencing work injuries at a level four times the rate for the overall category.

To be included in this analysis, the unweighted mean percentage of injuries for an occupation had to be 0.25 or greater. Additionally, the occupation had to account for at least 0.1 percent of weighted injuries and 0.1 percent of employment. (State injury data were weighted by their respective total employments.) Standard deviations on the weighted mean percentages were used to

eliminate those occupations with overly wide dispersions. Because there was not a complete universe of States, the study was further restricted to those occupations showing the strongest similarity of injury and employment distributions among the 25 States for which data were available.<sup>7</sup>

### Private sector patterns

Application of the ratio index procedure to data for the private nonfarm sector provides additional evidence that the number of injuries alone is not indicative of the relative hazardousness of an occupation. For example, "all other clerical workers" accounted for 3 percent of all injuries in 1978, but their injury index 0.17 was one-sixth of the private industry base of 1. On the other hand, shipping and receiving clerks, who recorded 0.80 percent of all injuries, had an index of 1.21—one-fifth higher than the private sector base. (See table 1.)

As previously indicated, blue-collar workers generally experienced more job-related injuries than white-collar employees. Blue-collar workers—craftworkers, operatives, and laborers—made up 40 percent of employment but accounted for 77 percent of the injuries. Conversely, white-collar employees—professionals and technicians, managers, salesworkers, and clerical workers—made up 48 percent of employment but accounted for only 12 percent of the injuries. (The corresponding proportions for service workers were 12 and 11 percent, respectively.) Some blue-collar workers experienced injuries up to 18 times more frequently than white-collar workers, underscoring the more hazardous characteristics of blue-collar jobs.

Members of the major white-collar groups in the private sector generally experienced injuries about one-fourth as often as all workers. Shipping clerks and stock clerks within the clerical category were the most notable exceptions to this rule, with indexes of 1.21 and 1.13, respectively. Among the major blue-collar occupational groups, nonfarm laborers had the highest index (3.70), followed by transport equipment operators (2.09); operatives, except transport (1.79); and craftworkers (1.40).

Indexes for more specific blue-collar occupations ranged widely—from 0.79 for blue-collar supervisors to 9.95 for warehouse laborers. The following ("all other" categories are not considered) had indexes of 2 or more: carpenters, millwrights, roofers and slaters, sheetmetal workers, structural metal craftworkers, assemblers, meat cutters and butchers, welders and flame cutters, machine operatives, truckdrivers, construction laborers, freight and material handlers, and warehouse laborers. Blue-collar groups with indexes ranging from 1.5 to less than 2 included: mechanics and repairers, plumbers and pipefitters, press operators and plate printers, cutting and miscellaneous operatives, delivery and route drivers,

**Table 1. Occupational injury ratio indexes for the private nonagricultural sector, 1978**

Occupations <sup>1</sup>	Weighted percent injuries	Percent employment	Ratio index <sup>2</sup>	Occupations <sup>1</sup>	Weighted percent injuries	Percent employment	Ratio index <sup>2</sup>
All occupations	100.00	100.00	1.00	Press operators, plate printers, and apprentices	.36	.23	1.57
Professional, technical, and kindred workers	2.37	11.04	.21	Roofers, slaters	.41	.13	<sup>3</sup> 3.15
Registered nurses	.53	1.08	<sup>3</sup> .49	Sheetmetal workers and apprentices	.56	.20	2.80
Engineering and science technicians	.38	1.15	.33	Structural metal craftworkers	.39	.11	<sup>3</sup> 3.55
All other	1.46	8.81	.17	All other	3.92	3.77	1.04
Managers and administrators, except farm	2.91	10.41	.28	Operatives, except transport	27.35	15.31	1.79
Restaurant, bar managers	.29	.60	<sup>3</sup> .48	Assemblers	3.51	1.70	<sup>3</sup> 2.06
Sales managers and department heads, retail	.48	.49	<sup>3</sup> .98	Cutting operatives, n.e.c.	.63	.38	<sup>3</sup> 1.66
All other	2.14	9.32	.23	Garage workers, gas station attendants	.73	.60	<sup>3</sup> 1.22
Salesworkers	2.11	7.47	.28	Meat cutters, butchers, except manufacturing	.60	.27	2.22
Clerical and kindred workers	4.59	19.31	.24	Packers, and wrappers, except retail	1.13	.98	<sup>3</sup> 1.15
Shipping, receiving clerks	.80	.66	<sup>3</sup> 1.21	Welders and flame cutters	2.11	.92	2.29
Stock clerks, storekeepers	.72	.64	<sup>3</sup> 1.13	Machine operatives, miscellaneous specified	4.82	2.12	<sup>3</sup> 2.27
All other	3.07	18.01	.17	Miscellaneous operatives	2.73	1.64	<sup>3</sup> 1.66
Craft and kindred workers	20.76	14.88	1.40	All other	11.09	6.70	1.66
Carpenters and apprentices	2.70	1.34	2.01	Transport equipment operatives	8.61	4.12	2.09
Electricians and apprentices	.92	.72	1.28	Delivery and route drivers	1.44	.81	1.78
Electric power line and cable installers and repairers	.22	.16	<sup>3</sup> 1.38	Forklift, tow motor operators	.94	.52	1.81
Excavating, grading, and road machine operators (except bulldozer)	.34	.28	<sup>3</sup> 1.21	Truckdrivers	5.75	2.32	2.48
Blue-collar supervisors, n.e.c.	1.76	2.23	.79	All other	.48	.47	1.02
Machinists and apprentices	.94	.67	1.40	Laborers, except farm	20.29	5.49	3.70
Mechanics and repairers	6.52	3.97	1.64	Construction laborers	2.59	.98	<sup>3</sup> 2.64
Automobile body repairers	.29	.22	1.32	Freight, material handlers	2.92	1.11	2.63
Automobile mechanics and apprentices	1.70	1.20	1.42	Stock handlers	1.99	1.30	<sup>3</sup> 1.53
Heavy equipment mechanics	1.54	1.30	<sup>3</sup> 1.18	Warehouse laborers, n.e.c.	1.99	.20	9.95
All other	2.99	1.25	2.39	All other	10.80	1.90	5.68
Millwrights	.36	.14	<sup>3</sup> 2.57	Service workers, except private household	10.98	11.99	.92
Painters, construction or maintenance	.45	.42	1.07	Cleaning service workers	2.36	2.63	.90
Plumbers, pipefitters, and apprentices	.91	.51	1.78	Food service workers	5.00	5.43	.92
				Nursing aides, orderlies, and attendants	1.79	1.03	1.74
				Practical nurses	.35	.55	.64
				Guards and watchmen	.40	.57	.70
				All other	1.08	1.78	.61 dn

<sup>1</sup> Excludes data for agriculture, forestry, and fisheries; private households; and the public sector.

<sup>2</sup> The indexes are derived from the following formula: percent injuries divided by percent employment. Injury and illness data are the mean percents from 25 States weighted for their respective employments. Employment data are percents of private wage-and-salary workers from the Bureau of Labor Statistics 1978 National Industry Occupational-Employment Matrix. An index was considered publishable only if data for the occupation met the following criteria:

- Injury and illness data for the occupation were available from five or more States.
- The unweighted mean percentage of injuries was 0.25 or greater.

- The weighted mean percent of injuries was 0.1 or greater.
- Occupational employment was 0.1 or more of the total.

- The standard deviation of the injury mean was 0.5 or less, except as specified in footnote 3.

<sup>3</sup> Indicates a standard deviation of unweighted mean percentage of injuries of between 0.25 and 1.75.

n.e.c. = not elsewhere classified

forklift operators, and stock handlers.

Indexes for the service industries were generally somewhat below the all occupation base of 1, with the exception of that for nursing aides (1.74).<sup>8</sup>

The indexes for the major occupational groups indicate that pay is not always commensurate with risk, as is commonly thought. The largest index is for laborers, a group of workers generally at the lower end of the wage scale. These jobs usually involve much manual labor subjecting workers to hazards such as handling heavy objects for which there are no safety standards, and for which experience alone teaches injury avoidance. For example, strains and sprains account for 25 percent of injuries to all craftworkers, but for about 35 percent of the injuries to freight handlers and warehouse laborers. Furthermore, laborer occupations are generally entry jobs for inexperienced or untrained workers. Other studies have found short duration of employment to be strongly correlated with occupational injury. About 40 percent of all work-related injuries occur among workers in their first year on the job.

### High risk jobs by industry division

Injury indexes by occupation were also developed for each of eight major industry divisions within the private nonfarm sector: mining; construction; manufacturing; transportation and public utilities; wholesale trade; retail trade; finance, insurance, and real estate; and services. (See table 2.) The following discussion presents the salient results of that analysis.

Some occupations had higher-than-average indexes across three or more of the industry divisions. Notable blue-collar occupations in this category included: carpenters, mechanics and repairers, plumbers and pipefitters, welders and flame cutters, delivery and route drivers, forklift operators, truckdrivers, material handlers, stock handlers, vehicle cleaners, and warehouse laborers. Among white-collar workers, stock clerks tended to have higher-than-average indexes, as did cleaning service and food service workers among the service employee group.

Within individual industry divisions, the high-risk occupations (that is, those with indexes of 1.2 or more, compared to the division base of 1) were:

**Mining**—mechanics and repairers; mine operatives; welders and flame cutters; and vehicle and equipment cleaners.

**Construction**—carpenters; glaziers; millwrights; sheet-metal workers; structural metal craftworkers; and construction laborers.

**Manufacturing**—metal molders; sheetmetal workers; assemblers; grinding machine operators; welders and flame cutters; delivery and route drivers; forklift and

**Table 2. Selected occupational injury ratio indexes<sup>1</sup> by industry division, 1978**

Occupations <sup>2</sup>	Mining	Construction	Manufacturing	Transportation and public utilities	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services
All occupations	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Professional, technical and kindred workers	<sup>3</sup> .10	<sup>3</sup> .20	.11	<sup>4</sup> .24	<sup>4</sup> .20	<sup>3</sup> .24	<sup>4</sup> .40	.43
Managers and administrators, except farm	<sup>3</sup> .14	<sup>4</sup> .18	.16	.15	.20	.58	.62	.43
Salesworkers	<sup>3</sup> .13	<sup>3</sup> .35	<sup>3</sup> .17	<sup>4</sup> .26	.26	.47	<sup>4</sup> .35	.55
Clerical and kindred workers	.09	.09	<sup>4</sup> .22	<sup>3</sup> .28	.24	.48	.62	.24
Shipping, receiving clerks	-	-	<sup>4</sup> .99	-	.91	1.69	-	-
Stock clerks, storekeepers	-	-	<sup>4</sup> .58	<sup>4</sup> 1.10	<sup>4</sup> .86	<sup>4</sup> 2.17	-	1.77
Craft and kindred workers	.92	1.03	.87	.83	1.48	1.65	8.78	2.16
Carpenters and apprentices	-	1.20	-	-	<sup>4</sup> 1.87	<sup>4</sup> 2.61	<sup>4</sup> 9.80	<sup>4</sup> 1.94
Electricians and apprentices	<sup>4</sup> .65	.84	.74	<sup>4</sup> .51	-	-	-	<sup>4</sup> 2.19
Blue-collar supervisors, n.e.c.	<sup>4</sup> .54	.97	.45	.49	.67	<sup>4</sup> .94	<sup>4</sup> 4.96	<sup>4</sup> 2.35
Glaziers	-	<sup>4</sup> 2.00	-	-	-	-	-	-
Machinists and apprentices	-	-	.96	-	<sup>4</sup> 1.80	-	-	-
Mechanics and repairers	<sup>4</sup> 1.47	1.03	1.18	1.51	1.92	1.97	-	2.30
Auto body repairers	-	-	-	-	-	1.98	-	<sup>4</sup> 1.88
Household appliance and accessory installers	-	-	-	-	-	<sup>4</sup> 2.16	-	<sup>4</sup> 2.33
Millwrights	-	<sup>4</sup> 2.79	-	-	-	-	-	-
Molders, metal and apprentices	-	-	<sup>4</sup> 2.23	-	-	-	-	-
Painters, construction, maintenance and apprentices	-	.57	-	-	-	-	<sup>4</sup> 5.73	<sup>4</sup> 2.04
Plumbers, pipefitters and apprentices	-	1.14	<sup>4</sup> .94	-	<sup>4</sup> 1.57	-	-	<sup>4</sup> 2.56
Sheetmetal workers and apprentices	-	1.84	<sup>4</sup> 1.62	-	-	-	-	-
Structural metal craftworkers	-	<sup>4</sup> 1.83	-	-	-	-	-	-
Operatives, except transport	1.49	1.11	1.31	<sup>4</sup> 1.83	1.87	1.74	-	2.21
Asbestos and insulation workers	-	<sup>4</sup> 1.16	-	-	-	-	-	-
Assemblers	-	-	<sup>4</sup> 1.40	-	-	-	-	-
Cutting operatives, n.e.c.	-	-	<sup>4</sup> 1.18	-	-	-	-	-
Garage workers, gas station attendants	-	-	-	-	-	<sup>4</sup> 1.45	-	-
Laundry, dry cleaning operatives, n.e.c.	-	-	-	-	-	-	-	1.79
Meat cutters, butchers, except manufacturing	-	-	-	-	-	2.81	-	-
Mine operatives, n.e.c.	<sup>4</sup> 1.42	-	-	-	-	-	-	-
Packers, wrappers, except retail	-	-	<sup>4</sup> .90	<sup>4</sup> 1.89	-	-	-	-
Grinding machine operatives	-	-	<sup>4</sup> 1.88	-	-	-	-	-
Welders and flame cutters	<sup>4</sup> 1.46	<sup>4</sup> .73	1.74	<sup>4</sup> 1.49	-	-	-	-
Transport equipment operatives	<sup>4</sup> 1.45	.97	1.49	1.74	2.28	2.29	<sup>4</sup> 7.41	3.70
Delivery and route drivers	-	-	<sup>4</sup> 1.34	<sup>4</sup> 4.76	<sup>4</sup> 1.72	<sup>4</sup> 1.37	-	4.03
Forklift, tow motor operatives	-	-	1.21	-	1.71	<sup>4</sup> 3.77	-	-
Truckdrivers	<sup>4</sup> 1.18	1.01	1.87	2.10	2.86	3.45	-	<sup>4</sup> 7.68
Laborers, except farm	<sup>4</sup> 3.12	1.78	4.11	3.09	4.41	2.87	14.20	3.58
Construction laborers, except carpenters' helpers	-	1.43	-	-	<sup>4</sup> 9.50	-	-	-
Freight, material handlers	-	<sup>4</sup> 1.00	<sup>4</sup> 1.81	3.58	<sup>4</sup> 1.67	<sup>4</sup> 3.08	-	6.90
Garbage collectors	-	-	-	<sup>4</sup> 8.16	-	-	-	-
Gardeners, groundskeepers, except farm	-	-	-	-	-	-	<sup>4</sup> 10.38	<sup>4</sup> .82
Stock handlers	-	-	-	-	<sup>4</sup> 1.47	<sup>4</sup> 1.80	-	<sup>4</sup> 1.65
Vehicle and equipment cleaners	<sup>4</sup> 2.00	-	-	-	<sup>4</sup> 1.21	<sup>4</sup> 1.33	-	<sup>4</sup> 1.18
Warehouse laborers, n.e.c.	-	-	5.38	<sup>4</sup> 10.35	9.29	<sup>4</sup> 15.59	-	-
Service workers, except private household	<sup>4</sup> .38	<sup>4</sup> .57	.98	<sup>3</sup> 1.62	<sup>4</sup> 1.12	1.11	3.92	1.65
Cleaning service workers	-	-	1.17	.70	-	1.16	<sup>4</sup> 3.69	1.31
Food service workers	-	-	-	-	-	1.11	-	2.32
Nursing aides, orderlies, attendants	-	-	-	-	-	-	-	3.18

<sup>1</sup> The indexes are derived from the following formula: percent injuries divided by percent employment. Injury and illness data are the mean percents from 25 States weighted for their respective employments. Employment data are percents of private wage-and-salary workers from the Bureau of Labor Statistics 1978 National Industry Occupational-Employment Matrix.

An index was considered publishable only if data for the occupation met the following criteria:

- Injury data were available from five or more States.
- The unweighted mean percentage of injuries was 0.25 or greater. (Except for major occupational groups.)
- The weighted mean percentage of injuries was 0.1 or greater. (Except for major occupational groups.)
- Occupational employment was 0.1 or more of the total.

- The standard deviation of the injury means was 0.5 or less, except as specified in footnote 4.

<sup>2</sup> Excludes data for agriculture, forestry, and fisheries; private households; and the public sector.

<sup>3</sup> Indicates a standard deviation of mean percent injuries greater than 1.75. (Only shown for major occupational groups.)

<sup>4</sup> Indicates a standard deviation of mean percent injuries between 0.25 and 1.75.

NOTE: Dashes indicate data not available, or data which did not meet publication criteria.

n.e.c. = not elsewhere classified.

tow motor operators; truckdrivers; freight and material handlers; and warehouse laborers.

*Transportation and public utilities*—mechanics and repairers; packers and wrappers; welders and flame cutters; delivery and route drivers; freight and material handlers; garbage collectors; and warehouse laborers.

*Wholesale trade*—carpenters; machinists; mechanics and repairers; plumbers and pipefitters; delivery and route drivers; forklift operators; and several nonfarm laborer jobs.

*Retail trade*—shipping and receiving clerks; stock clerks; carpenters; automobile and household appliance mechanics and repairers; gas station attendants; meat cutters and butchers; delivery and route drivers; forklift operators; truckdrivers; freight and material handlers; vehicle cleaners; and warehouse laborers.

*Finance, insurance, and real estate*—carpenters; blue-collar supervisors; mechanics and repairers; painters; gardeners and groundskeepers; and cleaning service and food service workers.

*Services*—stock clerks; carpenters; electricians; blue-collar supervisors; mechanics and repairers; painters;

plumbers and pipefitters; laundry and dry-cleaning operatives; delivery and route drivers; truckdrivers; freight and material handlers; stock handlers; cleaning service and food service workers; and nursing aides and orderlies.

A few of these occupations show markedly high indexes—10 to 14 times the averages for the industry divisions in which they are found. In addition to the inherent danger associated with some jobs, two other factors can account for these very high indexes. First, if the injury incidence rate for the industry division is low, a hazardous occupation will have a much higher index relative to the industry division base of 1 than it would when located in a division with a high injury rate. This would explain why painters appear on the list of high-risk jobs for finance, insurance, and real estate, but not for construction.

The second factor is associated with the nature of the data used to derive the rates, and high turnover in some jobs. A single job characterized by high turnover may have several workers employed in it throughout the year. More than one of these employees could experience work-related injuries, but the average annual employment for that job would be one worker. Thus, while the job is counted only once, each injury to any of its incumbents would be reported separately.<sup>9</sup> □

— FOOTNOTES —

<sup>1</sup> Hereafter, the term injury will also encompass illnesses. The single term is used for brevity.

<sup>2</sup> For a discussion of differences in State coverage and reporting requirements, see Norman Root and David McCaffrey, "Providing more information on work injuries and illnesses," *Monthly Labor Review*, April 1978, pp. 16–21.

<sup>3</sup> A summary of the incidence rate calculation for the Annual Survey of Occupational Injuries and Illnesses is provided in *Occupational Safety and Health Statistics: Concepts and Methods*, Report 518 (Bureau of Labor Statistics, 1978).

<sup>4</sup> The data are from the following States: Alaska, California, Colorado, Hawaii, Idaho, Indiana, Iowa, Kentucky, Maine, Maryland, Michigan, Minnesota, Missouri, Montana, Nebraska, New Jersey, New Mexico, Oregon, South Dakota, Tennessee, Utah, Vermont, Washington, Wisconsin, and Wyoming.

<sup>5</sup> The Cramer's V measure of association of .076 indicates that the frequencies of injuries are similar in the 25 States for the nine occupational groups. Thus, the work injury and illness data of the 25 States were combined for use in the computation of the indexes. For a description of this test of statistical significance see *Statistical Package for the Social Sciences (SPSS) Manual* (New York, McGraw-Hill, Inc., 1975), pp. 224–25.

<sup>6</sup> A description of this data source is available in *National Industry Occupational-Employment Matrix, 1970, 1978, and Projected 1990*, Bulletin 2086 (Bureau of Labor Statistics, 1981). Occupations in the matrix and in the Supplementary Data System (SDS) are coded according to the 1970 Bureau of Census Alphabetical Index of Industries and Occupations. Publishable occupational employment data by State are not available from the matrix.

<sup>7</sup> Standard deviations were computed on the percent distributions of each occupation in each State to measure their dispersion from the mean. Occupations with standard deviations either greater than 1.75 or less than 0.25 times the mean value of the occupation were excluded from this analysis, except as noted.

<sup>8</sup> The reader is reminded that the occupations appearing in tables 1 and 2 are not the only ones with high indexes. Excluded from this analysis are occupations which did not meet size and dispersion criteria for publication.

<sup>9</sup> High turnover in specific jobs, of course, means short duration of employment, which is strongly correlated with occupational injuries. For a more complete discussion of this relationship, see Norman Root and Michael Hofer, "The first work-injury data available from new BLS study," *Monthly Labor Review*, January 1979, pp. 76–80.



# The effects of shift work on the lives of employees

*About 1 in 6 employees works other than regular days schedules, but data are scarce on how workers are affected; incomes may rise, but family routine, social life, and health often suffer*

PETER FINN

At least 10 million Americans are regularly engaged in shift work. According to data from the Current Population Survey,<sup>1</sup> which almost surely underestimates the prevalence of shift work,<sup>2</sup> nearly one worker in six was employed full time in 1978 during hours that differ from typical daytime schedules. There were 4.9 million nonfarm wage and salary workers on the evening shift, 2.1 million on the night shift, and 2.8 million on miscellaneous shifts.

The term "shift work" means different things to different people. Shift work is popularly regarded as work in which employees "shift" schedules on some regular basis from daytime to evening or nighttime. Many researchers define shift work as employment in which two or more groups of employees work at different times of a 17-hour or 24-hour time span, including a so-called "day" shift. Most discussions consider shift work to be any employment that regularly occurs between 7 p.m. and 7 a.m., the definition used in this study.

For a significant proportion of these employees, working after-dark hours may not only reduce satisfaction with their jobs but may also create troublesome problems for their health, family life, social activity, and

on-the-job safety. However, shift work provides unique benefits for many employees as well as proving advantageous in many ways for industry and for society at large. It is important for government policymakers, business leaders, and shift workers themselves to become familiar with the major effects that working evenings and nights may have on employees and their families, in order to consider ways to modify the features that are deleterious, while retaining or enhancing those that are beneficial. This study summarizes what is currently known about these effects, with principal attention focused on the harmful consequences that call for amelioration.

Most of the information in this article comes from original research studies of shift work from both inside and outside the United States. Secondary sources have also been examined. Anecdotal evidence from these sources about the personal experiences of shift workers and their spouses and children has been used to provide understanding of what the data mean in human terms.

There is limited evidence regarding many of the effects of evening and night work on employees. Furthermore, many of the data that have been reported are contradictory. A major American study of shift work concluded, "We have here the unhappy picture of a group of men doing something for their daily bread

---

Peter Finn is a senior research analyst at Abt Associates, Inc., Cambridge, Mass.

which they would prefer not to do if they had the opportunity to start over again." Yet an investigation of 600 English shift workers determined that "for subjective well-being in both its somatic and psychological aspects, shift work can in general probably hardly be called a problem."<sup>3</sup> These and similar conflicting research results represent in large measure a failure to control for numerous variables that may influence employee attitudes toward evening and night work including type of shift and work, job prestige, workplace amenities, age and marital status of shift workers and number and age of their children, neighborhood attitudes toward evening and night work, and the prevalence of night work in the community.<sup>4</sup> Despite this and other limitations in the research to date, there are a number of consistent findings regarding the advantages and drawbacks of shift work.

### Benefits

Some jobseekers accept shift work simply because there are not enough daytime jobs available.<sup>5</sup> For these individuals, evening and night work provides a unique source of gainful employment. Shift work's most alluring feature, however, appears to be its wage differential. According to the Bureau of Labor Statistics, these shift premiums average 10 cents an hour for the evening shift and 13 cents for the night shift.<sup>6</sup>

Shift work also enables workers to increase their income by moonlighting on daytime jobs. One study found that shift workers who did not wish to change shifts cited as their overriding reason the opportunity to hold a second job their current schedules provided. Significantly, 23 percent of night workers and 19 percent of evening workers held second jobs compared with 11 percent of daytime employees.<sup>7</sup>

Shift work provides another financial incentive rarely mentioned in the literature but frequently observed by the author. Although it has been pointed out that "the rapid expansion of service employment has . . . created many opportunities for part-time or intermittent work for young people whose main activity is pursuing their education,"<sup>8</sup> what has gone unnoticed is that many of these service jobs are during evening or night, enabling students to take courses during the day. Many security guards and nurse's aides, for example, use evening and night jobs to work their way through school and, not coincidentally, to provide a quiet environment in which they can spend some of their paid hours studying.

Shift work provides a number of nonpecuniary advantages for some workers. Working evenings or nights allows employees more free time during the day and, in the case of rotating shift work, to accumulate several days off in a row on a regular basis. Some workers enjoy a variety of rotating shifts, while others appreciate being able to remove themselves from unwanted family

situations or responsibilities. The camaraderie and sense of loyalty that is a feature of certain evening or nighttime occupations can be a satisfying substitute for or addition to normal social and family life.<sup>9</sup>

Many shift workers have less tension and a more relaxed pace on the night shift than during the day because of less supervision or fewer interruptions from clerical or management personnel. Finally, shift work accommodates "night owls," who function poorly in the morning and best during evening or night.<sup>10</sup>

### Drawbacks

The attractions of shift work are considerable for many individuals. But the benefits must be weighed by shift workers and policymakers alike against the drawbacks that affect the health, interpersonal relationships, leisure time activities, and perhaps the safety of a large proportion of shift workers. The central feature of shift work that creates dissatisfaction for many evening and night workers is that it puts them "out of rhythm" with their minds and bodies, families and social lives, and routines of the rest of the community.

*Health.* There is a well-documented circadian (24-hour) rhythm that governs many of the major biological functions of the human body. Disturbance of these cycles is responsible for several of the most upsetting physical and emotional problems evening and night workers experience. Diurnal rhythms control pulse, blood pressure, the cardio-pulmonary system, blood composition, endocrine secretions, appetite, elimination, and the wake-sleep cycle.<sup>11</sup> Shift work, of necessity, interrupts these processes and requires that they occur at times for which the body is not genetically programmed or environmentally conditioned for them.

There is disagreement over the extent to which the body, over time, can adapt to changes in these rhythms. Although several studies have found rhythmic adjustments to a new work schedule may occur within four days to two weeks,<sup>12</sup> several considerations suggest that such ready adaptation may not be commonplace. A significant minority of shift workers, for unknown reasons, never significantly adjust, biologically, to the alterations imposed on their normal body cycles. In addition, most evening and night employees in the United States are on rotating shifts. The continuous alteration of day and evening; or day, evening, and night work, seriously diminishes or entirely precludes adjustment of bodily rhythms. Furthermore, any adaptation that may be achieved even among fixed shift workers is repeatedly undermined by days off, holidays, vacations, and sick leave, when employees revert to normal living schedules.<sup>13</sup> Not surprisingly then, problems related to sleep, appetite, and digestion are the most common and persistent complaints for many shift workers.

Particularly widespread among shift workers is insufficient or poor quality sleep resulting from trouble falling asleep, waking during sleep, and waking up early. Although many of these difficulties are from disruptions in the body's normal diurnal sleep rhythms, sleep during daytime is also often disturbed by excessive and unavoidable light and heat, and by noises from children, housework, telephone calls, and street traffic. "Have you ever gone home in the morning after a night's work," one shift worker asked rhetorically, "when the sun is shining and a bed awaits you with the blinds tightly drawn to keep out the light—are you going to sleep?"<sup>14</sup> Sleep can also be unsettled by over-fatigue, restlessness, and tension. As she began preparing dinner at midnight for her husband who was coming home from the evening shift at a local factory, a woman observed, "It always takes a couple of hours to calm him down, We never get to bed before 4."<sup>15</sup>

Lack of adequate sleep and poor quality sleep have been implicated in a number of adverse health and safety consequences, including physical disorders, nervous problems, and deficits in mental and psychomotor performance which can lead to on-the-job accidents. Fatigue is the most commonly encountered and upsetting reaction shift workers experience from sleep deprivation. This is particularly true of night and rotating shift workers. The latter are often required to work emergency overtime without notice, an added burden on an already tiring schedule. Fatigue can have a number of harmful consequences besides those for health, including impaired ability to participate in family and social life during the hours when a shift worker is not at work.<sup>16</sup>

Loss of appetite and irregular eating habits are a common occurrence among shift workers that may lead to weight loss as well as nutritional deficiency. "One week you have dinner at 4 p.m.; the next week you have it at 11:30 p.m. You don't feel like anything at 11 o'clock at night," a rotating shift worker commented.<sup>17</sup> Shift workers also experience more digestive problems. Forty-three percent of 150 shift workers in one study reported taking some form of medication for digestive problems.<sup>18</sup> There is conflicting evidence regarding whether shift workers have higher rates of stomach disorders, including ulcers, colitis, and gastritis, than do day workers.<sup>19</sup>

There is also little agreement regarding the pervasiveness or severity of shift work's impact on employees' emotional well-being. However, some shift workers report feeling guilty at not being able to spend time with their families due to conflicting schedules or fatigue when they are at home.<sup>20</sup> Shift workers may also feel disparaged because of the social stigma toward shift work that appears to be prevalent in many countries. One study found that nonsupervisory night workers in a

state mental hospital and an electronics plant attributed less prestige to their own jobs than did day workers doing the same job. The daytime workers in another plant regarded the company's night workers as "odd."<sup>21</sup>

*Family.* Shift workers experience more family-related problems than do daytime employees because of the lack of synchrony between their hours on the job and their families' daily routines. The most serious family disturbance is that many people who work evenings and nights are less able to spend time with their children, especially small children who go to bed early, than are employees who work during the day.<sup>22</sup>

The time shift workers have to spend with their spouses can also be severely curtailed by hours of work, because a shift worker's wife or husband who works during the day or not at all is often awake at precisely those times when the shift worker must sleep. Spouses who wish to spend time with a mate who works during the evening or night usually have to alter their patterns of sleep, mealtime, and recreation to accommodate the shift worker's atypical schedule.

The time that shift workers spend with their families may prove less satisfying than it could be because the worker's fatigue from poor sleep or lack of sleep can prevent normal social activity. An interstate rig operator commented that the wife of a long-distance trucker "can't even count on her husband to attend a graduation, a communion, any kind of social function. He's usually so darn tired that he'd much rather be home sleeping than getting ready to go out Sunday night." Families may have difficulty just keeping track of the schedule of a shift worker in the family and knowing when the worker will be available for meals, social activities, or special events. Many wives of shift workers have also reported being frightened staying home alone at night without a man available to afford a feeling of protection. Sexual activity is still another aspect of family life that is sometimes disrupted by shift work.<sup>23</sup>

Curiously, there is little difference among evening, night, and day workers regarding frequency of visits with relatives outside the immediate family.

*Social life.* Evening and night work does not appear to interfere significantly with how often shift workers visit friends, but it does deprive at least some shift workers of extensive friendships. "Sometimes at 11 o'clock at night I feel sorry for myself," a junior foreman on a rotating shift related. "If you work shift work, you don't have any friends. They don't know whether you are sleeping or working . . . You have an invite out and find you are working on the evening shift and you can't go." The wife of an air traffic controller reported that her husband's shifts, which change weekly, made it difficult for her to plan anything in advance. "We have to

have friends who are in the same boat as we are." Also, shift workers participate in fewer voluntary organizations than daytime workers. The same junior foreman complained, "The school PTA meets and stuff like that goes on in the evenings and I . . . can't go."<sup>24</sup>

*Safety.* Although disagreement and lack of evidence predominate regarding the effects of evening and night work on employee safety, there are sound physiological grounds for presuming an increased rate of accidents at night based on laboratory studies of efficiency and errors related to circadian rhythms. Laboratory studies of speed, reaction time, and accuracy show demonstrable deficiency after the evening hours begin. Biologists say it is no coincidence that the human errors which led to the nuclear energy accident at Three Mile Island occurred at 4 a.m. by workers who had been changing shifts every week.<sup>25</sup> Some studies also report that workers on night shifts make more mistakes than day shift employees and that this is particularly true for rotating shift workers. By contrast, one investigation of occupational safety concluded that "there are no more accidents at night than there are during the day," and

another study found that only the rate of serious accidents is higher at night. A study of three factories with rotating shift workers showed no statistically significant differences in the accident rates between day and night workers, but the authors pointed to possible confounding of the data because night workers are usually less inclined to seek medical aid for minor injuries.<sup>26</sup>

ONLY A PARTIAL PICTURE of the effects of shift work on employees can be drawn with the information currently available. Clearly, additional research is needed. Furthermore, any decisions about how to enhance the positive features and eliminate the harmful aspects of shift work must reflect the significant advantages evening and night work provides to industry and to society at large. Nonetheless, the evidence that shift work appears to impair the health, domestic life, and social activities of millions of workers and their families indicates that more effort needs to be devoted now by government, industry, organized labor, the local community, and shift workers themselves toward ameliorating these widespread, harmful consequences of evening and nighttime employment. □

— FOOTNOTES —

<sup>1</sup> See Janice Neipert Hedges and Edward S. Sekscenski, "Workers on late shifts in a changing economy," *Monthly Labor Review*, September 1979, pp. 14–22.

<sup>2</sup> The Current Population Survey provides information only on the starting and ending times for full-time workers in its sample population. As a result, the survey omits dual jobholders who work an evening or night shift on a second job, shift workers who are employed fewer than 35 hours a week, and most importantly, employees who are on the day segment of a rotating shift during the reference week of the survey. Given these limitations, the figure of 10 million shift workers in the country underestimates their actual prevalence to an unknown but probably considerable extent. See "Workers on late shifts . . ." pp. 14–22, and Donald L. Tasto and Michael J. Colligan, *Shift Work Practices in the United States* (Washington, The National Institute for Occupational Safety and Health, 1977). Another estimate places the percentage of shift workers at over one-fourth the entire national work force. See Phyllis Lehmann, "The National Institute for Occupational Safety and Health: Expanding the Frontiers of Knowledge," in Judson MacLaury, ed., *Protecting People at Work* (Washington, U.S. Department of Labor, 1980).

<sup>3</sup> See Floyd C. Mann and L. Richard Hoffman, *Automation and the Worker* (New York, Henry Holt and Co., 1960) and J. M. Dirken, "Industrial Shift Work: Decrease in Well-Being and Specific Effects," *Ergonomics*, March 1966, pp. 115–24.

<sup>4</sup> The influence of community attitudes and work schedules in the occupational and off-the-job satisfaction of shift workers has been convincingly documented in Randall B. Dunham, *Community Structure and the Experiences of Shift Workers*, prepared for the U.S. Department of Labor, Employment and Training Administration, (Springfield, Va., National Technical Information Service, 1979).

<sup>5</sup> See John D. Owen, *Working Hours: An Economic Analysis* (Lexington, Mass., D.C. Heath and Co., 1979), p. 65, William Grossin, *Le Travail et le Temps* (Paris, Editions Anthropos, 1969), and Alan P. Henry, "Our New Pioneers," *The Boston Globe*, June 15, 1979.

<sup>6</sup> See Charles M. O'Connor, "Late-shift employment in the manufacturing industries," *Monthly Labor Review*, November 1970, pp. 37–42, and *Shift Work Practices . . .* p. C-2. Shift premiums, however,

have tended to rise less than the general wage rates over the last several years. See "Workers on late shifts . . .," p. 17. Furthermore, it may be that only those shift workers with little experience or education earn more than daytime workers of similar qualifications while among those with higher levels of experience and education, daytime employees may receive the higher wage. See *Working Hours . . .* p. 87. For evidence documenting the appeal of wage differentials, see *Working Hours . . .* p. 64, Mann and Hoffman, *Automation and the Worker*, pp. 136–37, James H. Downie, *Some Social and Industrial Implications of Shift Work* (London, Industrial Welfare Society, Robert Hyde House, 1963), Marc Maurice, *Shift Work* (Washington, International Labor Office, 1975), p. 68, and Paul E. Mott, Floyd C. Mann, Quin McLoughlin, and Donald P. Werwick, *Shift Work: The Social, Psychological and Physical Consequences* (Ann Arbor, University of Michigan Press, 1965).

<sup>7</sup> *Shift Work: The . . . Consequences*, pp. 24, 318. The moonlighting opportunities shift work provides are discussed in Maurice, *Shift Work*, p. 68, *Shift Work: The Consequences*, pp. 304–05, 310, and J. Carpentier and P. Cazamian, *Night Work* (Washington, International Labor Office, 1977).

<sup>8</sup> Eli Ginzberg, *Good Jobs, Bad Jobs, No Jobs* (Cambridge, Mass., Harvard University Press, 1979), p. 17.

<sup>9</sup> On free time, see Maurice, *Shift Work*, pp. 66–67, A. A. I. Wedderburn, "Social Factors in Satisfaction with Swiftly Rotating Shifts," *Occupational Psychology*, 1967, pp. 85–107. On consecutive days off, see, for example, "Social Factors . . .," in *Night Work*, p. 309, and *Shift Work: The . . . Consequences*, pp. 309, 312. On the stimulation of rotating shifts, see "Social Factors in Satisfaction . . ." On removal from the family, see Jadwiga Wojtczak-Jaroszowa, *Physiological and Psychological Aspects of Night and Shift Work* (Washington, U.S. Government Printing Office, 1977), p. 43. On camaraderie, see *Some Social and Industrial Implications . . .*, pp. 8, 10, Joan Aldous, "Occupational Characteristics and Males Role Performance in the Family," *Journal of Marriage and the Family*, November 1969, pp. 707–12, Rosabeth Moss Kanter, *Social Science Frontiers* (New York, Russell Sage Foundation, 1977), p. 33, and Seymour Martin Lipset, James Coleman, and Martin Trow, *Union Democracy* (New York, The Free Press, 1956), pp. 136–39.

<sup>10</sup> On night shift pace, see *Night Work*, p. 52, *Union Democracy*, p. 139, *Shift Work*, p. 63, and Gwynneth De La Mare and J. Walker, "Factors Influencing the Choice of Shift Rotation," *Occupational Psychology*, January 1968, pp. 1-21. On "night owls," see *Night Work*, p. 35, *Shift Work*, p. 62, and Torbjorn Akerstedt, "Shift Work and Health—Interdisciplinary Aspects," in U.S. Department of Health, Education, and Welfare, *Shift Work, and Health: A Symposium* (Washington, D.C., U.S. Government Printing Office, 1976), pp. 179-197.

<sup>11</sup> *Night Work*, p. 14, *Shift Work: The . . . Consequences*, pp. 9-10, Maurice *Shift Work*, p. 48, *Physiological and Psychological Aspects . . .*, pp. 3-12.

<sup>12</sup> *Shift Work*, p. 25, *Shift Work: The . . . Consequences*, p. 312, *Physiological and Psychological Aspects . . .*, p. 7, and W.P. Colquhoun, "Circadian Rhythms, Mental Efficiency, and Shift Work," *Ergonomics*, September 1970, pp. 558-60.

<sup>13</sup> "Circadian Rhythms . . .," pp. 558-60, *Shift Work*, p. 45, *Shift Work: . . . The Consequences*, pp. 280, 312, *Night Work*, p. 17, J. H. Van Loon, "Diurnal Body Temperature Curves in Shift Workers," *Ergonomics*, June 1963, pp. 267-73, and S. Wyatt and R. Marriott, "Night Work and Shift Changes," *British Journal of Industrial Medicine*, July 1953, pp. 164-72.

<sup>14</sup> *Some Social and Industrial Implications . . .* p. 18. On the prevalence and nature of sleep disturbances, see *Shift Work*, p. 44, *Automation and the Worker*, pp. 107, 114-15, *Shift Work: The . . . Consequences*, pp. 10, 290, 300, *Night Work*, pp. 22-24, Harry Levinson, Charlton R. Price, Kenneth J. Munden, Harold J. Mandl, and Charles M. Solley, *Men, Management, and Mental Health* (Cambridge, Mass., Harvard University Press, 1962), and Donald L. Tasto, Michael J. Colligan, Eric W. Skjei, and Susan J. Polly, *Health Consequences of Shift Work* (Cincinnati, Ohio, National Institute of Occupational Safety and Health, 1977).

<sup>15</sup> See Barbara Garson, *All the Livelong Day: The Meaning and Demeaning of Routine Work* (New York, Penguin Books, 1977), pp. 92-93.

<sup>16</sup> On the effects of inadequate sleep on health see *Night Work*, p. 18, *Shift Work*, p. 46, *Physiological and Psychological Aspects . . .*, p. 41. On fatigue, see *Shift Work: The . . . Consequences*, p. 300, *Physiological and Psychological Aspects . . .*, p. 41, *Night Work*, p. 24, *Shift Work*, p. 67, and Wyatt and Marriott, "Night Work and Shift Changes." On the imposition of sudden, mandatory overtime, see *Some Social and Industrial Implications . . .*, p. 6, *All the Livelong Day . . .*, pp. 92-93, "Social Factors in Satisfaction . . ." For fatigue's effects on safety, see *Some Social and Industrial Implications . . .*, p. 17. For the effects of fatigue on family life, see footnote 23. Curiously, afternoon shift workers have been known to complain that they may get too much sleep, since they can usually retire before midnight and need not get up again until the following afternoon. See, for example, *Shift Work: The . . . Consequences*, p. 305. In one study of two evening worker groups, 32 out of 49 workers in one sample and 44 out of 54 workers in the other sample got nine or more hours of continuous sleep a night. See J. Walker, "Frequent Alternation of Shifts on Continuous Work," *Occupational Psychology*, October 1966, pp. 215-25.

<sup>17</sup> *Some Social and Industrial Implications . . .*, p. 11.

<sup>18</sup> See "Night Work and Shift Changes." See also, *Automation and the Worker*, pp. 107, n. 4, 114-15, *Shift Work: The . . . Consequences*, pp. 236, 300. *Health Consequences of Shift Work*, p. 8.

<sup>19</sup> See, for example, *Shift Work: The . . . Consequences*, p. 301, *Shift Work*, p. 44, *Automation and the Worker*, p. 120, "Night Work and Shift Changes," *Health Consequences of Shift Work*, p. 9, and "Shift Work and Health—Interdisciplinary Aspects," p. 181.

<sup>20</sup> *Shift Work: The . . . Consequences*, p. 290, *Men, Management, and Mental Health*, p. 108, and Al Nash, "Job Satisfaction: A Critique," in B. J. Widick, ed., *Auto Work and Its Discontents* (Baltimore, Md., The Johns Hopkins University Press, 1977), p. 79.

<sup>21</sup> See Ronald H. Bohr and Arnold B. Swertloff, "Work Shift, Occupational Status, and the Perception of Job Prestige," *Journal of Applied Psychology*, June 1969, pp. 227-29 and "Factors Influencing the Choice . . ." For a discussion of the stigma against shift work, see Henry, "Our New Pioneers" and J. D. McDonald, "The Social and Psychological Aspects of Night Shift Work," unpublished Ph.D. thesis, University of Birmingham (England), 1958, cited in David Brown, "Shift Work: A Survey of the Sociological Implications of Studies of Male Shiftworkers," *Journal of Occupational Psychology*, December 1975, pp. 231-40.

<sup>22</sup> See Joseph L. Kearns, *Stress in Industry* (London, Priory Press Ltd., 1973), p. 63. See also *Men, Management, and Mental Health*, p. 108, "Job Satisfaction: A Critique," p. 79, *Health Consequences of Shift Work*, pp. 12-15, *Shift Work*, p. 52, *Union Democracy*, p. 137, *Automation and the Worker*, p. 121, *Some Social and Industrial Implications . . .*, p. 15, and Chaya S. Piotrkowski, *Work and the Family System* (New York, the Free Press, 1979), p. 69.

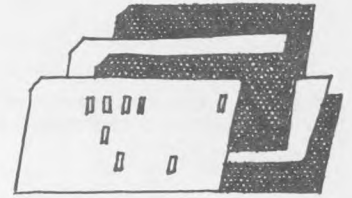
<sup>23</sup> The truck driver is quoted in Studs Terkel, *Working* (New York, Avon Books, 1975), p. 285. On the effects of shift worker fatigue on family life, see *Shift Work: The . . . Consequences*, p. 288. Wives' fear of being alone at home is discussed in *Some Social and Industrial Implications . . .*, p. 13, "Factors Influencing the Choice . . ." "Shift Work and the Shorter Workweek," in Clyde E. Dankert, Floyd C. Mann, and Herbert R. Northrup, eds., *Hours of Work* (New York, Harper and Row, 1965), p. 119 and *A Survey of the Sociological Implications*, pp. 231-40. Shift work's effects on sexual activity are described in *Shift Work: The . . . Consequences*, pp. 19, 95, 111-12.

<sup>24</sup> The quotations are from *Men, Management, and Mental Health*, p. 107, and "A Traffic Controller's Life and Death Job," *The Boston Globe*, April 12, 1981. See also *Shift Work: The . . . Consequences*, pp. 181 and 299, *Shift Work*, p. 55, *Automation and the Worker*, p. 124, *Some Social and Industrial Implications . . .*, p. 7, *Union Democracy*, p. 137, and Martin Reiser, "Stress, Distress, and Adaptation in Police Work," in William H. Kroes and Joseph J. Hurrell, Jr., eds., *Job Stress and the Police Officer: Identifying Stress Reduction Techniques*, proceedings of a symposium, Cincinnati, Ohio, May 8-9, 1975, U.S. Department of Health, Education, and Welfare (Washington, U.S. Government Printing Office, 1975), pp. 19-20.

<sup>25</sup> On laboratory studies of efficiency and errors, see "Circadian Rhythm . . .," pp. 558-60, W. P. Colquhoun, "Accidents, Injuries and Shift Work," in *Shift Work and Health*, U.S. Department of Health, Education, and Welfare (Washington, D.C., U.S. Government Printing Office, 1976), pp. 160-97, and *Physiological and Psychological Aspects . . .*, p. 27. The biologists' comments on the Three Mile Island accident are cited in Dianne Hales, "Temperature Pills," *Family Health*, September 1980, p. 9. Studies of on-the-job mistakes are reported in *Health Consequences of Shift Work*, pp. 10, 75.

<sup>26</sup> Evidence that fails to confirm a relationship between shift work and job safety may be found in "Accidents, Injuries and Shift Work," *Night Work*, p. 25, and "Night Work and Shift Changes."

# Research Summaries



## Marital and family patterns of the labor force

BEVERLY L. JOHNSON AND ELIZABETH WALDMAN

Married persons continue to dominate the work force, but their share has been declining steadily. From March 1970 to March 1980, the proportion fell from 69 to 61 percent, while the share who had never married or were divorced rose from 24 to 33 percent. (See table 1.)

This gradual change in the marital composition of the labor force reflects several of the decade's major demographic and social developments. For example, half of the more than 20-million increase in the labor force during the decade was among persons 25 to 34 years old, who now account for more than 1 of every 4 workers. Many of these workers, born during the post-World War II "baby boom," tended either to postpone marriage or not to marry. Those who did marry were more than twice as likely to become divorced than were workers of a similar age 10 years ago. As a result, only 65 percent of workers 25 to 34 in March 1980, were married—down from 79 percent a decade earlier. (See table 2.)

This information is based on data obtained each March as part of a monthly sample survey of U.S. households.<sup>1</sup> Other selected findings include the decline in the rate of labor force participation among husbands, the record-high levels of participation among wives, especially those with young children, and the consequent increase in the number of multi-earner families.

**Husbands.** Continuing a long-term trend, the proportion of all husbands in the labor force declined from 87 percent in 1970 to 81 percent in 1980.<sup>2</sup> This decrease, however, did not occur among husbands under age 55—more than 90 percent of whom were working or looking for work throughout the decade. For husbands aged 55 to 64, the participation rate dropped from 86 to 75 percent. This decline coincided with the increased availability of early retirement benefits and a broadening of the

eligibility regulations covering work-related disability payments.<sup>3</sup> The participation rate for men 65 years and older also dropped—from about 30 to 22 percent. A good deal of this reduction was attributable to general improvements in retirement income, including private pensions, social security, and asset income. In addition, both age groups suffered some degree of market-related age discrimination.<sup>4</sup>

**Wives.** The number of married women (husband present) in the labor force rose by nearly 6 million over the 1970's—the largest increase for wives in any decade in U.S. history. By March 1980, 24.4 million wives—half of all wives 16 years and over—were working or looking for work. Through age 54, well over half of the wives were in the labor force, with the proportion moving past the 60-percent mark for those aged 20 to 24 and 35 to 44. Labor force participation rates for women 55 to 64 and 65 and over were essentially unchanged over the decade, averaging 36 and 7 1/2 percent, respectively. Thus the decade's changes in social security and private pension benefits could have had only a minimal effect on the participation rates of older wives. The main reason for the limited effect is that the older women were considerably more likely than older men to have had interruptions in their work lives and to have worked part time or part year—conditions that reduce pension coverage. Even when covered under social secu-

**Table 1. Changes in civilian labor force, by sex and marital status, March 1970, 1979, and 1980**

Marital status and sex	March 1970	March 1979	March 1980	Change from March 1970 to 1980	
				Number (thousands)	Percent
Both sexes, total:					
Number (in thousands)	82,058	101,579	103,339	21,281	.....
Percent	100.0	100.0	100.0	.....	100.0
Men, total	61.7	57.7	57.5	8,767	41.2
Never married	11.4	14.7	14.6	5,778	27.2
Married, wife present	46.8	38.2	37.7	597	2.8
Married, wife absent	1.3	1.6	1.6	601	2.8
Widowed	0.8	0.6	0.5	-120	-0.6
Divorced	1.4	2.7	3.0	1,912	9.0
Women, total	38.3	42.3	42.5	12,514	58.8
Never married	8.5	10.8	10.6	3,925	18.4
Married, husband present	22.6	23.5	23.7	5,922	27.8
Married, husband absent	1.8	1.8	1.8	443	2.1
Widowed	3.1	2.3	2.3	-196	-0.9
Divorced	2.3	3.9	4.2	2,421	11.4

NOTE: Data for March 1980 are revised and may differ from those published previously.

Beverly L. Johnson is a social science research analyst, and Elizabeth Waldman is a senior economist in the Office of Current Employment Analysis, Bureau of Labor Statistics.

**Table 2. Labor force participation of men and women 25-34 years old, by marital status, March 1970 and March 1980**

[Numbers in thousands]

Marital status and sex	1970			1980		
	Labor force		Labor force participation rate	Labor force		Labor force participation rate
	Number	Percent		Number	Percent	
Total age 25-34	17,394	100.0	70.0	27,923	100.0	80.1
Men, total	11,605	66.7	95.2	16,106	57.7	95.0
Never married	1,546	8.9	86.4	3,729	13.4	88.7
Married, wife present	9,565	55.0	98.3	10,770	38.6	97.4
Married, wife absent	226	1.3	66.9	536	1.9	94.2
Widowed	11	( <sup>1</sup> )	( <sup>2</sup> )	19	( <sup>1</sup> )	( <sup>2</sup> )
Divorced	257	1.5	82.1	1,052	3.8	94.3
Women, total	5,789	33.3	45.7	11,817	42.3	66.0
Never married	873	5.0	80.8	2,320	8.3	84.2
Married, husband present	4,104	23.6	39.7	7,296	26.1	59.3
Married, husband absent	327	1.9	53.6	644	2.3	66.0
Widowed	28	0.2	( <sup>2</sup> )	90	0.3	66.4
Divorced	458	2.6	79.7	1,467	5.3	84.0

<sup>1</sup> Less than 0.05 percent.

<sup>2</sup> Rate not shown where base is less than 75,000.

NOTE: Data for 1980 are revised and may differ from those published previously.

**Table 4. Number of earners in families during 1969 and 1979, by type of family in March 1970 and March 1980**

[Numbers in thousands]

Characteristic	March 1970		March 1980	
	Number	Percent	Number	Percent
Total	51,237	100.0	58,774	100.0
Husband-wife families, total	44,436	100.0	48,199	100.0
No earners	3,022	6.8	5,420	11.2
1 earner	16,268	36.6	13,598	28.2
Husband only	15,133	34.1	11,667	24.2
Wife only	797	1.8	1,463	3.0
Other relative only	339	.8	468	1.0
2 earners or more	25,145	56.6	29,180	60.5
Husband and wife	20,327	45.7	25,148	52.2
Husband and other, not wife	4,517	10.2	3,448	7.2
Husband non-earner	302	.7	585	1.2
Other families, total	6,812	...	10,576	...
Maintained by women, <sup>1</sup> total	5,573	100.0	8,834	100.0
No earners	1,194	21.4	2,041	23.1
1 earner	2,468	44.2	4,290	48.6
2 earners or more	1,911	34.3	2,503	28.3
Maintained by men, <sup>1</sup> total	1,239	100.0	1,742	100.0
No earners	121	9.7	219	12.6
1 earner	520	41.9	778	44.7
2 earners or more	598	48.2	745	42.8

<sup>1</sup> Includes divorced, separated, widowed, or never-married persons.

NOTE: Because of rounding, sums of individual items may not equal totals. Data for March 1980 are revised and may differ from those published previously.

ity, the great majority of older retired wives receive their husbands higher benefits rather than their own.<sup>5</sup>

About 13.4 million or 54 percent of all wives with children under 18 were in the labor force in March 1980. Although the mothers of school age children remain much more likely to be in the work force (62 percent) than those with children under 6 (45 percent), the proportion of mothers with preschoolers has risen a dramatic 15 percentage points since 1970. (See table 3.)

Another notable change was the reversal in the longstanding relationship between the participation rates of the mothers and those of wives without children under 18 in the home.

Prior to the late 1960's and early 1970's, the wives without children under 18 had a considerably higher participation rate than the mothers. In 1960, for example, their rate was 35 percent compared with only 28

percent for the mothers. Although the participation rate for both groups kept rising, the pace was much faster for the mothers. By the mid-1970's, the mothers' rate was only 1 percentage point lower than that for the other group; by 1980, the relationship had reversed and mothers were much more likely to be the labor force participants.

### Multiearner families

Annual increases in the number and proportions of working wives were almost entirely responsible for the rising number of multiearner families. By March 1980, 29.2 million married-couple families reported that at least two family members were earners during the previous year. Since 1970, this number has increased by about 4 million. (See table 4.) Multiearner families now account for 61 percent of all married couples, and most of the time, both the husband and wife are earners.

About two-thirds of the wives in multiearner families worked 40 weeks or more during the year, mostly full time. Median earnings for all wives were about \$6,300 in 1979, or \$10,200 if they worked year round, full time. For families in which both the husband and wife were earners, median income in 1979 was \$25,300, compared with \$18,900 where the husband was the only earner. □

### FOOTNOTES

<sup>1</sup> This report is the latest from an annual series based primarily on information from supplementary questions in the March 1980 Current Population Survey. The most recent report on this subject, containing

**Table 3. Labor force participation rates of married women, 16 years and over, by presence and age of children, March 1960, 1970, 1975, and 1980**

Wives	March			
	1960	1970	1975	1980
Wives, total	30.5	40.8	44.4	50.2
No children under 18 years	34.7	42.2	43.9	46.1
With children under 18 years:				
Total	27.6	39.7	44.9	54.2
Youngest 6 to 17 years	39.0	49.2	52.3	61.8
Youngest under 6 years	18.6	30.3	36.6	45.0

NOTE: Labor force as percent of population.

data for March 1979, was published in the *Monthly Labor Review*, April 1980, pp. 48–52, and reprinted as Special Labor Force Report 237.

The data in this report relate to the noninstitutional population 16 years and over, including those male members of the Armed Forces living off post or with their families on post (855,000 in March 1980). Sampling variability may be relatively large in cases where numbers are small, and small differences between estimates or percentages should be interpreted with caution. See tables 1–3, pp. A–6 and A–7, Special Labor Force Report 237.

<sup>2</sup> For 1970 to 1979 data, see *Handbook of Labor Statistics*, Bulletin 2070 (Bureau of Labor Statistics, 1980), pp. 108–12.

<sup>3</sup> See Philip L. Rones, Older men—the choice between work and retirement, *Monthly Labor Review*, November 1978, pp. 3–10; and William V. Deutermann, Jr., Another look at working-age men who are not in the labor force, *Monthly Labor Review*, June 1977, pp. 9–14.

<sup>4</sup> Ibid. Also see Philip L. Rones, The retirement decision: a question of opportunity? *Monthly Labor Review*, November 1980, pp. 14–17.

<sup>5</sup> See *Social Security and the Changing Roles of Men and Women*, U.S. Department of Health, Education, and Welfare, February 1979 pp. 1–7 and p. 11.

## Investment for productivity growth subject of new congressional study

Productivity growth—the increase in goods and services produced per hour of work—slowed to a crawl in the United States during the 1970's. At the direction of the Budget Committee of the House of Representatives, the U.S. Congressional Budget Office undertook a study of the causes of, and possible remedies for, this critical economic problem. Salient conclusions from the study were published in a formal report earlier this year.<sup>1</sup>

One focus of the project was the stock of physical capital (land, plant, and equipment) per worker as a determinant of labor productivity. The following discussion, which was excerpted from the complete report, compares trends in capital formation and productivity over the last three decades, and examines the factors which encourage business fixed investment.

### Capital formation

The relationship between capital investment, or capital formation, and gains in productivity has been the subject of considerable study. This research has produced substantially different estimates of the contribution made by capital to productivity growth.<sup>2</sup> Using a combination of gross and net measures of the capital stock, Edward F. Denison has estimated that increases in the amount of capital per worker contributed about 0.34 percentage point to the annual growth in national income per worker in the nonresidential business sector during the 1948–78 period. In contrast, J. R. Norsworthy, Michael J. Harper, and Kent Kunze have calculated that increases in the net capital stock per manhour accounted for roughly 0.67 percentage point

of the average annual growth in output per manhour in the private business sector, during the same period. Still others such as Peter K. Clark have arrived at different estimates, based on somewhat different measures of capital, labor, and output.<sup>3</sup>

Despite the conceptual and methodological differences among these studies of the contribution made by capital to productivity growth, it is clear that they all attribute a significant role to capital accumulation. It is also apparent that the estimated contribution of capital has declined substantially in recent years, although there is some disagreement about when the decline began.

Variations over time in the contribution of capital to labor productivity growth primarily reflect changes in the growth rate of the capital-labor ratio. Differences in the way capital and labor are measured lead to different estimates of when the growth in this ratio began to decline. Most estimates agree that, while capital and labor in the nonfarm, nonresidential business sector both grew more slowly during the 1973–78 period, the slowdown in the rate of capital formation was more pronounced, and hence growth of the capital-labor ratio was retarded. Whether or not slower growth in the capital-labor ratio began earlier (in the 1965–1973 period) depends on how labor is measured. During that earlier period, the growth of both capital and labor accelerated, but the number of hours worked grew substantially slower than the number of full-time and part-time employees. As a result, the growth of the capital-hours ratio accelerated, while the growth of the capital-employment ratio slowed. Those who measure labor in terms of hours worked (such as Norsworthy, Harper, and Kunze) thus conclude that the contribution of capital to labor productivity did not begin to decline until the 1973–78 period.<sup>4</sup> In contrast, those such as Denison, who measure labor in terms of the number of employees, report that the contribution of capital began to decline earlier. From a policymaking viewpoint, however, the issue of when capital formation began to contribute less to productivity is not as important as the observation that its contribution has diminished.

### Determinants of investment

Increases in the capital stock are made through investment. The average of annual growth rates of all major components of real gross fixed investment declined between 1966–73 and 1974–79. The largest decline was in residential investment, a category especially sensitive to business cycles. Of particular importance to the productivity issue, however, is nonresidential investment. Its average rate fell from 4.2 percent in 1966–1973 to 2.4 percent in 1974–79. Within the nonresidential category, the average of annual growth rates for equipment investment fell by 2.6 percentage points,



while that of structures declined by 0.5 percentage point.

The fraction of gross national product (GNP) devoted to investment declined to 13.8 percent during the 1974–79 period, but the ratio of equipment investment to GNP rose to 6.8 percent—the highest ratio observed for the periods discussed here. Equipment investment accounted for 49 percent of gross investment during this period, compared to a 23 percent share for nonresidential structures and a 28 percent share for residential investment. Between 1949–65 and 1974–79, the ratio of equipment investment to total fixed investment increased by 11 percentage points, while the comparable ratios for nonresidential structures and residential investment declined by 4.2 percentage points and 6.8 percentage points, respectively.

What are the major influences determining business fixed investment? The determinants of investment have been the subject of many studies. They are thought to include both nonfinancial factors, such as changes in the demand for goods and services and the rate of capacity utilization, and financial considerations, such as the rate of return on capital investments and the cost and availability of funds.

Although there is general agreement about the importance of the nonfinancial factors, there is considerable debate among economists about the magnitude of the financial influences. The issue is an empirical one that has not yet been resolved. The weight of the evidence, however, indicates that financial considerations do have a significant effect on business investment. Therefore, policy measures that reduce the cost of capital would likely be effective in stimulating productivity growth.

General agreement about the importance of nonfinancial factors for business investment decisions suggests that, during periods of economic slack, policies to promote capital accumulation might best be concentrated on returning the economy to high levels of production. In general, investment subsidies are not considered to be the most effective stabilization tools. Increased Federal purchases and personal tax cuts generally have larger and quicker impacts on output and employment. As the economy approaches high levels of unemployment, however, such policies tend to contribute more to inflation and less to real growth in demand. As a result, the positive impact on investment dissipates, and may even become negative.

Policies to raise the capital intensity of production at high-employment levels of output (or at constant levels of resource utilization) must include measures that reduce the cost of capital. In the absence of sufficient foreign sources of financing, however, the success of such policies requires either a decrease in the proportion of private saving devoted to residential investment or an increase in the national rate of savings.<sup>5</sup> Without such

changes in the rate or composition of saving, interest rates are likely to rise and offset the effect of investment incentives on the overall level of business investment.<sup>6</sup> The composition of investment, however, is likely to change in favor of the specific types of investment being subsidized.

### Tax incentives

A variety of investment tax incentives can be used to stimulate capital formation. These include: reducing corporate tax rates, raising the existing investment tax credit, and increasing depreciation deductions either by indexing them to the rate of inflation or by shortening depreciation periods. While all these tax changes tend to stimulate investment by reducing the cost of capital, their impact on different forms of investment can vary. This is an important consideration, because policies to stimulate capital formation will not achieve the maximum effect on productivity if they divert some capital resources away from their most productive uses, by artificially raising the profitability of some investments relative to other, more productive ones. In some cases, there may be good reasons for favoring some forms of investment over others, but the biases of particular investment subsidies should be intentional rather than inadvertent.

The corporate income tax has a nonneutral influence on investment decisions. It is biased against corporations relative to unincorporated businesses, and favors debt financing over equity financing. The main reasons for these results are that corporate income is subject to “double taxation” (once at the corporate level and again at the stockholder level when paid out in dividends), and that interest costs are deductible whereas dividend payments are not.

A flat-rate investment tax credit of the type now available for most equipment purchases lowers the effective tax rate proportionately more for short-lived than for long-lived investment.<sup>7</sup> Thus, it encourages investment in industries such as construction and motor vehicle manufacturing, which are heavy users of short-lived equipment, relative to industries such as primary metals, communications, and utilities. Also, the current investment tax credit favors investment in equipment rather than in structures, since the latter does not qualify.

The distorting effects of the investment tax credit are offset somewhat by the lack of an inflation adjustment for depreciation deductions. The use of historical cost depreciation discourages investment in general, but has a relatively greater impact on short-lived investments. A simplified explanation for this is that the average annual effect of inflation on depreciation costs (a factor affecting the rate of return) is greater for assets with relatively short useful lives.<sup>8</sup> □

## FOOTNOTES

<sup>1</sup> See *The Productivity Problem: Alternatives for Action* (U.S. Congressional Budget Office, 1981).

<sup>2</sup> The contribution of capital formation to productivity growth generally is calculated as the percentage change in the capital-labor ratio weighted by the share of output or income attributable to capital. Quantitative estimates of the contribution can differ because of alternative approaches to the measurement of capital, labor, and output.

<sup>3</sup> Edward F. Denison, *Accounting for Slower Economic Growth* (Brookings Institution, 1979); J. R. Norsworthy, Michael J. Harper, and Kent Kunze, "The Slowdown in Productivity Growth: Analysis of Some Contributing Factors," in *Brookings Papers on Economic Activity* (1979:2), pp. 387-421; and Peter K. Clark, "Capital Formation and the Recent Productivity Slowdown," *The Journal of Finance*, vol. 33, no. 3 (June 1978), pp. 965-75.

<sup>4</sup> Although hours worked is the measure employed by the Bureau of Labor Statistics to calculate labor productivity, its use can result in movements of the capital-labor ratio that may not be related to labor productivity. As noted by Clark, a decline in the average workweek during the 1965-73 period caused hours to grow sufficiently less than employment so that the growth of capital per hour worked actually increased, even though the growth in the capital-employment ratio declined. Yet, a decrease in average weekly hours represents a less intensive use of available capital rather than a move to a more capital-intensive production process. See Peter K. Clark, "Issues in the Analysis of Capital Formation and Productivity Growth," in *Brookings Papers on Economic Activity* (1979:2), pp. 423-31.

<sup>5</sup> National saving includes personal saving, business saving (retained earnings and capital consumption allowances), and government surpluses. The rate of saving in this discussion is the ratio of national saving to high-employment GNP.

<sup>6</sup> Policies that stimulate foreign investment in the United States can, however, raise the investment-output ratio without a corresponding rise in the national saving rate at full employment, provided such investment is financed abroad.

<sup>7</sup> An intuitive explanation is that the average yearly value of a credit equal to  $x$  dollars is greater for short-lived investments than for long-lived investments. The nonneutral character of the current investment tax credit and other investment subsidies is discussed more fully in Jane G. Gravelle, *Depreciation Policy Options*, Congressional Research Service, Report No. 80-182E (October 10, 1980). See also Jane G. Gravelle, *The Capital Cost Recovery System and the Corporate Income Tax*, Congressional Research Service, Report No. 79-230E (November 26, 1979).

<sup>8</sup> Consider two different \$100 investments with useful lives of 1 year and 2 years, respectively. Assuming straight-line depreciation and an annual inflation rate of 10 percent, the average annual impact of inflation on depreciation costs would be \$10 for the 1-year asset and \$7.75 for the 2-year asset.

## Cost of living indexes for Americans living abroad

The U.S. Department of State has prepared new indexes of living costs abroad for 21 major foreign cities. The changes in the indexes range from declines of 20 percent for Brussels and 8 to 13 percent for six other European cities—Vienna, Paris, Rome, Frankfurt, Madrid, and The Hague—to increases of 5 to 8 percent for Mexico City, Buenos Aires, and Tel Aviv, and 17 percent for Manila. The changes in the indexes for the other 10 cities were no more than 3 percent, however. The periods between price survey dates were 4 months for Johannes-

burg, 1-1/2 to 2 years for New Delhi, Manila, and Singapore, and 8 to 14 months for the other cities.

The indexes of living costs abroad are used to compute post allowances for Americans assigned to foreign posts where living costs, based on an American pattern of living, are higher than in Washington, D.C. The indexes compare the cost in dollars of representative goods and services, excluding housing and education, purchased at foreign posts and in Washington, D.C. Changes in the indexes reflect both relative changes in the prices of goods and services between survey dates and changes in foreign currency exchange rates. Table 1 presents indexes of living costs abroad for 30 cities.

The declines in the local indexes for the seven European cities reflect the improvement in the U.S. dollar exchange rate versus the European currencies, because (except for Frankfurt) local prices paid by Americans actually rose more than prices in Washington, D.C. Prices increased 15 percent more in Madrid, 9 to 12 percent more in Paris, Rome, and The Hague, 6 percent more in Brussels, and 3 percent more in Vienna. In Frankfurt, prices paid by Americans rose at the same rate as in Washington, D.C. However, the dollar gained about 15 percent versus the Austrian and German

**Table 1. Indexes of living costs abroad, excluding housing and education, July 1981**

[Washington, D.C.=100]

Country and city	Survey date	Monetary unit	Rate of exchange per U.S. dollar	Local index
Argentina: Buenos Aires	Feb. 1981	Peso	2232	164
Australia: Canberra	Jan. 1981	Dollar	0.8626	123
Austria: Vienna	Feb. 1981	Shilling	15.0	141
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. 1980	Dollar	1.18	103
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	Nov. 1980	Shekel	6.60	133
Italy: Rome	Jan. 1981	Lira	1032	113
Japan: Tokyo	Jan. 1981	Yen	205	155
Korea: Seoul	June 1980	Won	587	135
Mexico: Mexico, D.F.	Feb. 1981	Peso	23.5	104
Netherlands: The Hague	Feb. 1981	Guilder	2.50	132
Nigeria: Lagos	Mar. 1981	Naira	0.5774	169
Philippines: Manila	Dec. 1980	Peso	7.66	104
Saudi Arabia: Al Khobar (Dhahran)	May 1980	Riyal	3.33	139
Singapore: Singapore	Nov. 1980	Dollar	2.10	116
South Africa: Johannesburg	Oct. 1980	Rand	0.7407	114
Spain: Madrid	Feb. 1981	Peseta	86.3	109
Sweden: Stockholm	June 1980	Krona	4.18	168
Switzerland: Geneva	May 1980	Franc	1.58	176
United Arab Emirates: Abu Dhabi	Aug. 1980	Dirham	3.66	135
United Kingdom: London	Apr. 1980	Pound	0.4169	154
U.S.S.R.: Moscow	Nov. 1980	Ruble	0.6622	134
Venezuela: Caracas	Oct. 1980	Bolivar	4.28	137

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

marks, 20 percent against the French franc, 25 percent versus the Italian lira and the Dutch guilder, and 30 percent against the Belgian franc and the Spanish peseta. Therefore, living costs in U.S. dollars declined from 8 to 13 percent, in descending order, in Vienna, Paris, Rome, Frankfurt, Madrid, and The Hague, and costs in dollars fell 20 percent for Americans in Brussels.

On the other hand, living costs in dollars rose 5 to 8 percent in Mexico City, Buenos Aires, and Tel Aviv, and 17 percent (over 2 years) in Manila. In all cases, the appreciation of the dollar offset, in part, the effect of higher local price increases. For Americans in Mexico City, the exchange rate offset about one-third of a 9-percent higher trend in local prices. In Buenos Aires, local prices rose about 30 percent more than those in Washington, D.C., and in Manila, about 20 percent. However, the exchange rate cost of the Argentine peso was down almost 20 percent, while the Philippine peso declined only 4 percent. For Americans in Tel Aviv, a 50-percent depreciation of the shekel versus the dollar offset almost all of the local price increases, which were 115 percent higher than those in Washington, D.C.

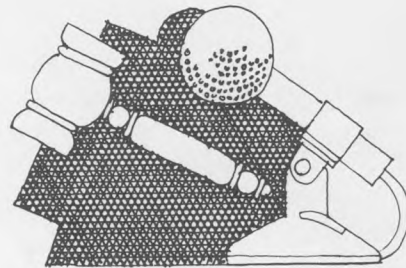
For the other 10 cities, the changes in living costs in dollars were small. Except for Tokyo and Hong Kong, this reflects moderate changes in both relative prices and exchange rates. For Tokyo, the local index was almost unchanged, but local prices paid by Americans rose considerably less than those in Washington, D.C.,

while the foreign exchange cost of the Japanese yen increased 10 percent. (The exchange rate has since declined.) In Hong Kong, conversely, the higher local price increases were almost exactly offset by 8-percent lower exchange rate costs. For the other eight cities, both relative prices in local currency and the exchange rates were little changed. The new local indexes were down 1 to 3 percent for Tokyo, Moscow, Hong Kong, Lagos, Canberra, and Manama; unchanged for New Delhi; and up 1 to 3 percent for Singapore, Johannesburg, and Ottawa.

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 for 164 foreign cities are published in quarterly reports entitled *U.S. Department of State Indexes of Living Costs Abroad and Quarters Allowances*. Data for all cities are published in April, and subsequent revisions are published in July, October, and January. The methods of compiling and using the indexes are explained in *U.S. Department of State Indexes of Living Costs Abroad and Quarters Allowances: A Technical Description*, Report 568 (Bureau of Labor Statistics, 1980). The reports are available from the Office of Publications, Bureau of Labor Statistics, Washington, D.C. 20212. □

# Conventions



## Key officer of new police union loses to coalition in close vote

MARY ANN MULLEN

At the third annual convention of the fledgling International Union of Police Associations (IUPA, AFL-CIO), delegates wrestled with problems of leadership and structure, as they voted for new officers, set legislative goals, and authorized an examination of their bylaws. Seventy-nine delegates representing 40 of the IUPA's 200 local affiliates attended the July 17-22 convention in Chicago.

The IUPA was united in its goals—the growth of the union, the attainment of improved working conditions through collective bargaining, and the passage of police-oriented legislation through a strong political action committee—however, there was some disagreement within the union over the means for achieving these objectives.

*Officer elections.* This difference of opinion was evident in the contested election for first vice president, one of the three principal leadership positions of the union. David Baker of the Memphis Police Association defeated incumbent Jack Hawkonson of the Illinois State Council of Police, by a 8,108-to-7,907 vote.

The election of Baker, which was the result of a coalition of delegates from the Southern States and California, leaves the leadership divided, with President Edward Kiernan representing the status quo and Baker representing a more aggressive style of management. It is not clear how much influence Baker will have on the IUPA. Heretofore, the first vice president has been in a powerful position, because many of his duties are determined by the international president.<sup>1</sup>

Executive vice presidents also were elected for each of the IUPA's 20 regions. These officers serve with the president, secretary-treasurer, and first vice president on the

International Executive Board, which conducts the union's business between conventions and supervises the investment and disbursement of union funds. Other elections involved area vice presidents, who are responsible for advising locals of policies and procedures and for organizing new locals. Elections for the president, secretary-treasurer, and first vice president are staggered, with each officeholder serving a 3-year term. President Kiernan will face reelection in 1983, and secretary-treasurer Robert Gordon, at the 1982 convention.

*Legislative goals.* Foremost among the union's legislative goals has been preventing the mandatory coverage of public employees under the social security program. The IUPA believes that the inclusion of public employees would do little to salvage the financially distressed program. The union maintains that civil servants presently covered by sound retirement plans would suffer because no concept yet presented for integration into the social security program assures public employees that current benefits will not be lowered.

Kiernan, in his report to the convention, stated that he had received President Reagan's commitment to oppose mandated social security for State and local employees. This position was confirmed by Robert F. Bonitati, President Reagan's special assistant, in his comments to the convention delegates.

The creation of a "Police Officers' Bill of Rights" remains a high priority legislative goal for the IUPA. The union seeks a uniform law which would establish due process guarantees for State and local law enforcement personnel. The bill would ensure police officers that they would not be prohibited from engaging in political activity when off duty; it would institute requirements that police officers be notified when there is any investigation of alleged impropriety on their part; and it would require adequate representation of law enforcement personnel whenever a police review board is established to examine citizens' complaints.

The IUPA has also lobbied in Congress for legislation which would extend the benefits of the Public Safety Officer Benefit Act to include Federal-level law enforcement personnel and firefighters. Currently, the act pro-

Mary Ann Mullen is an economist in the Labor Management Services Administration, U.S. Department of Labor.

vides a \$50,000 lump-sum benefit to the survivors of State and local police officers and firefighters killed in the line of duty.

*Constitutional amendments.* Much of the floor discussion at the convention centered on the need for changes in the union's constitution and bylaws. Prior to the convention, some 20 amendments were submitted to the By-Law Committee, covering such varied areas as an officers' retirement and widows' pension plan, age restrictions on candidates for the offices of president and secretary-treasurer, the establishment of a Department of Organizing, and modifications in the authority and duties of union officers.

As the delegates considered these amendments, it became clear that a more complete overhaul of the bylaws would be necessary. The current bylaws, adopted at the founding convention in 1979, were appropriated with little modification from the constitutions of other AFL-CIO unions. The union now needs a constitution tailored more precisely to its own structure and administration.

Therefore, the majority of the amendments which had been submitted to the By-Law Committee were withdrawn. The delegates directed the committee to review the bylaws (including the withdrawn proposals) and issue a report at the next convention. On the recommendation of the committee, the proposed amendments which were not withdrawn were defeated.

The delegates, however, approved an amendment prohibiting the IUPA from recruiting private sector security guards. Because this proposal was made by the delegates on the convention floor, approval by two-thirds of those present was required for its adoption. The admittance of private security guards has been a controversial issue since the union's inception, with one faction seeking to organize such workers and the other advocating a "pure" union limited to public sector law enforcement personnel. The easy passage of this amendment fol-

lowed a recent National Labor Relations Board decision which found inappropriate a bargaining unit which included both guard and other employees. (See *Burns Electronic Security Services, Inc.* 256 NLRB No. 139, June 23, 1981.)

*Other issues.* Organizing continues to be one of the primary concerns of the IUPA. Kiernan noted that since its birth in San Francisco 3 years ago, the union has continued to grow, with nearly 200 affiliated locals, representing 30,000 members. In fact, each month since the founding convention the IUPA has chartered at least one new local. While these affiliates are primarily small locals, organizations of police officers in a number of larger cities such as San Francisco, Houston, Chicago, and Toledo have also joined the IUPA. The union now represents members in more than 30 States, the Virgin Islands, and Canada.

The delegates endorsed a resolution to provide support for the activities of the Law Enforcement Political Action Committee of the IUPA. Established in 1979 with responsibility for the political education of the member associations, this body had received little financial support from IUPA locals to date. Delegates were encouraged to promote a dues-checkoff program at the local level, with each local president functioning as a liaison to his area vice president on this program. During the next year, the committee will conduct regional seminars to educate union members in the political process and to increase the awareness of politicians and police officers concerning its political action program. □

— FOOTNOTE —

<sup>1</sup> The International Union of Police Associations' Constitution and By-laws, adopted July 17, 1979, states in Article VI, Section 3: "The First Vice President shall perform such duties as may be assigned to him by the International President."

# Foreign Labor Developments



## ILO conference focuses on bargaining, worker safety, rather than politics

TADD LINSENMAYER

It came as a surprise to many observers, and a relief to most participants. After years of concentrating on political issues, the 1981 Conference of the International Labor Organization focused on technical issues, such as industrial relations and working conditions. If this tendency continues, the ILO could emerge as one of the stronger and more broadly supported specialized agencies of the United Nations. Representatives from 145 countries attended the 67th Session of the ILO conference, which met in Geneva, Switzerland, during June 3–24. Alioune Diagne of Senegal was elected conference president.

For all its focus on technical issues, the 1981 conference was not without drama. Lech Walesa, head of Poland's Solidarity trade union—and the first truly independent worker delegate ever from a Communist country—received an enthusiastic welcome when he thanked the ILO for its help during the difficult period of Solidarity's development. Similarly, there was an air of tension when the conference formally censured the Soviet Union for prohibiting free trade unions, after years of avoiding this explosive issue.

The United States did not escape criticism. The U.S. Government cast two of seven abstentions on an otherwise unanimous vote approving a new ILO declaration condemning South Africa's apartheid policy. Both the U.S. worker and employer delegates voted in favor of the declaration. Although the U.S. Government argued that the declaration's call for direct assistance to liberation movements prevented full support for the declaration, a number of delegates openly criticized U.S. policies toward South Africa.

### Technical issues

The 1981 conference considered five technical items. Three resulted in the adoption of new Conventions and Recommendations; the remaining two will be discussed at the 1982 conference.

A Convention is an international treaty that carries a *legal obligation* for states which ratify or sign it. A Recommendation is a document which *suggests* measures that can be taken to implement labor policies.

This year, the adopted standards increasingly used "flexibility devices," which define different methods of implementation so that countries with widely differing situations can ratify the standards. The employers' groups and a number of governments, including the United States, were largely responsible for promoting the use of these devices.

*Collective bargaining.* Previous ILO standards have established the principles of collective bargaining. The purpose of the Convention and Recommendation adopted by the 1981 conference is to promote collective bargaining in all branches of economic activity. The Convention outlines specific subjects which might be covered in collective bargaining—working conditions, terms of employment, and relations between employers and workers. In addition, it states that freedom of collective bargaining should not be hampered, and that national authorities should consult with all concerned parties before taking any action on the specific issues.

The delegates debated a number of controversial provisions surrounding the collective bargaining Convention. Several governments argued for modifications that would allow flexibility in determining the scope of the Convention. Under this proposal, certain sectors, such as agriculture or public service employees, could be excluded at the option of the ratifying states. However, all such amendments were defeated, leaving the universal coverage language intact.

Delegates were more successful with changes aimed at preventing intervention by national authorities in the collective bargaining process. The employers, with the support of the U.S. Government, wanted to define "promote" as "to encourage and facilitate." After much discussion, the employers withdrew this amendment with the understanding that the standards implied "no obligation for the state to intervene or compel negotia-

---

Tadd Linsenmayer is Assistant Director for International Organizations, Bureau of International Labor Affairs, U.S. Department of Labor.

tions." In the Recommendation on this issue, one provision was altered so that governments "may provide," rather than "should provide," services such as training in collective bargaining.

The U.S. Government and employer delegates did not support the Convention, but did support the Recommendation. The U.S. worker delegate supported both instruments.

*Workers with family responsibilities.* Child care, flexible working schedules, part-time jobs, vocational guidance, and placement services for parents entering or re-entering the workforce were addressed in a new Convention and Recommendation. The two standards are meant to ensure equal treatment and opportunity for all workers with dependents.

One part of the Recommendation on these issues presented problems to certain governments. The provision in question specified that workers on extended parental leave be financially compensated and protected by social security. This was resolved by an amendment which allows member states to provide, when necessary, social security benefits, tax relief, or other measures consistent with national policy.

The U.S. Government and worker delegates supported both the Convention and Recommendation, while the employer delegate abstained on both.

*Safety, health, and working environment.* Standards on occupational safety and health and the working environment were adopted with virtually unanimous votes. The Convention provides for the development of national policies on the working environment and emphasizes the importance of a comprehensive accident prevention system and the need for cooperation between management and workers. The Recommendation specifies areas for preventive action—ventilation, noise and vibration, barometric pressure, clothing, sanitation, and mental stress due to conditions of work. In addition, it details the obligations of employers and workers in maintaining a safe and healthy workplace.

The adopted standards advocate workers' safety committees to consult with management on work content or organization of work, training programs on safety and health, and protection from dismissal or other discriminatory measures for workers involved in safety and health issues. On the national level, the standards encourage governments to identify hazards, issue regulations or codes of practice on safety and health, and advise workers and employers on how to reduce safety and health hazards. The conference adopted both standards with virtually unanimous votes.

*Proposed standards.* The conference discussed possible new standards regarding terminations of employment

by employers. These proposed standards will be considered by the 1982 conference. This year, employers and workers were opposed on almost all points raised. The governments were divided because of differences in their legal systems and approaches to the question of termination of employment. Neither the U.S. Government nor employer delegates supported the proposed conclusions because of the emphasis on government intervention in private disputes and the adversarial nature of the proposed provisions. However, the U.S. worker delegate supported the proposed standards.

The conference started work on possible standards concerning social security rights of workers and family members who are employed outside their home countries. The conference agreed that even if a Convention is adopted by the 1982 conference, a third discussion would be necessary in 1983 to develop a Recommendation concerning model provisions for use in bilateral or multilateral social security treaties. The U.S. delegation supported the conclusions of this committee.

### Supervising ILO standards

One of the more volatile issues was the use of the "special list" and "special paragraph" systems to highlight violations of ILO standards. The conclusions of the Conference demonstrate a renewed determination to cite countries for violations, regardless of political or economic pressures.

The most dramatic case involved the Soviet Union which, for the first time, was cited in a special paragraph for violating ILO standards on freedom of association. On two previous occasions, in 1974 and 1977, the Soviet Union had been cited by a conference committee for violating ILO standards, but the full conference did not adopt the committee's report.

This year, the conference also cited in "special paragraphs" six other countries with continuing problems in upholding ILO standards. According to the ILO report, Argentina, Bolivia, and the Central African Republic have not yet ensured full freedom of association. The conference requested the Argentine government to guarantee full respect for freedom of association and collective bargaining standards and asked for further information on all cases of imprisoned trade union leaders.

Bolivia claims to be in the process of preparing new legislation that will conform with freedom of association standards. The conference urged Bolivia to expedite the legislation, as little progress had been made in recent years. On two occasions in the past year, the ILO assisted the Central African Republic in developing legislative texts that would address and correct its observance of freedom of association standards; to date, these texts have not been adopted. The conference expressed "hope that there would be real progress by next year."

On forced labor standards, the conference found that Tanzania and the Central African Republic have serious compliance problems. Tanzania's current law allows for compulsory cultivation as well as involuntary labor for public and development purposes in agriculture and industry. In the Central African Republic, compulsory labor may be imposed on persons convicted for political reasons, as well as persons who cannot show proof of a "normal" occupation or student status.

Chile was set apart in a "special paragraph" for its problems in observing standards concerning discrimination in employment. The conference was particularly concerned about Chile's policy of "debureaucratization," which may have been used to dismiss persons for their political opinions.

Guatemala was not only cited in a special paragraph for problems in meeting standards on labor clauses and plantations, but also was censured for "continued failure to implement" ILO freedom of association standards. Guatemalan authorities explained they were aware of the discrepancies and were drafting a new labor code to correct the situation. However, the conference said that this explanation had been given for too many years, and that despite numerous requests, the Guatemalan government was not cooperating with ILO supervisory bodies and had not made any progress in guaranteeing the right to freedom of association in law and practice.

The conference addressed the problems of child labor, particularly in developing countries where extreme economic need makes the problem serious and a solution difficult. The conference will conduct more indepth discussions on this subject in 1983 for the purpose of examining existing ILO standards and deciding whether they need updating.

## Resolutions

In past years, the ILO conference often has been used as a forum for discussing political resolutions that, according to many delegations, were outside the competence of the organization. Generally, this problem was avoided this year. The only politically controversial resolution dealt with disarmament.

A resolution given top priority was aimed at overcoming the shortage of competent managers, particularly those in developing countries. The resolution encourages the ILO and member states to provide training for managers and entrepreneurs in such matters as labor relations, collective bargaining, and relations with free and independent trade unions.

The conference also adopted a resolution on the ILO's role in the new International Development Strategy. It emphasizes the need for tripartite consultation in development policies, as well as on the importance of ratification and observance of key ILO standards.

A third resolution on the social and economic consequences of disarmament threatened to take the ILO into political discussions similar to those already underway in other U.N. agencies. After protracted negotiations, however, the conference adopted a proposal requesting the ILO to perform certain functions which are rightfully within its competence and to cooperate with other U.N. agencies in their work on disarmament.

Another resolution requests the ILO to research the future needs of vocational training systems and to establish regional training institutes. In addition, the resolution asks member states to develop, in consultation with workers' and employers' organizations, comprehensive national training policies and programs.

The resolutions adopted this year keep the ILO focused on issues which are most important to member states. However, this has not always been the case and the ILO is continuing its efforts to ensure that extraneous political resolutions are not introduced in or considered by future sessions. For 8 years, a Working Party on Structure has been considering proposals, one of which would make it more difficult to introduce politically inspired resolutions which are extraneous to the ILO's work. A tentative agreement, reached in February 1981, suggests that a 13-member conference review committee decide whether a political resolution should be circulated at a conference. The 1981 conference did not discuss this suggestion, but did consider questions concerning the composition of the governing body. The conference concluded that the Working Party on Structure should meet again to finalize its proposals for consideration in 1982.

## A step in right direction

While the 1981 ILO conference concentrated on technical issues, there nevertheless was an undercurrent of political issues throughout the session. The Middle East situation, which had preoccupied past ILO conferences, was kept under control and limited to speeches at nearly empty plenary sessions. The declaration on apartheid, which could have posed major problems for the United States, was resolved in such manner that the U.S. Government was able to abstain from voting. The conference's censure of the Soviet Union for violating trade union rights standards was not seriously challenged by the Soviet Government.

This does not guarantee, however, that future sessions will be spared the political storms of the past. To be sure, there is a general desire among most member countries to depoliticize the ILO. Many delegates believe that substantial progress has been made. Few ILO observers would conclude that the 1981 conference was anything more than another step in the right direction, albeit an important and in many ways impressive step. □



# Major Agreements Expiring Next Month



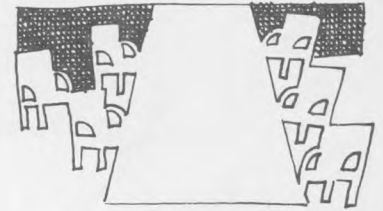
This list of collective bargaining agreements expiring in November is based on contracts on file in the Bureau's Office of Wages and Industrial Relations. The list includes agreements covering 1,000 workers or more.

Employer and location	Industry	Union <sup>1</sup>	Number of workers
Allied Chemical Corp., Automotive Products Division (Knoxville, Tenn.) .	Apparel . . . . .	Clothing and Textile Workers . . . . .	1,000
Continental Airlines (Interstate) <sup>2</sup> . . . . .	Air transportation . . . . .	Independent Airline Union . . . . .	2,000
General Dynamics Corp., Fort Worth Division (Forth Worth, Tex.) . . . . .	Transportation equipment . . . . .	Machinists . . . . .	4,750
General Telephone Company of Ohio . . . . .	Communications . . . . .	Electrical Workers (IBEW) . . . . .	1,200
Kaiser Foundation Hospitals and 2 others (California) . . . . .	Hospitals . . . . .	Service Employees . . . . .	7,800
Martin Marietta Aerospace Co. (Florida and Maryland) . . . . .	Ordnance . . . . .	Auto Workers (Ind.) . . . . .	2,250
Midtec Paper Corp., (Kimberly, Wis.) . . . . .	Paper . . . . .	Paper Mill Workers (Ind.) . . . . .	1,000
New York City Private Sanitation Contract (New York, N.Y.) <sup>3</sup> . . . . .	Utilities . . . . .	Teamsters (Ind.) . . . . .	1,650
Norfolk Shipbuilding and Drydock Corp. (Norfolk, Va.) . . . . .	Transportation equipment . . . . .	Boilermakers . . . . .	3,050
Northwest Airlines, Ground Service (Interstate) <sup>2</sup> . . . . .	Air transportation . . . . .	Machinists . . . . .	3,500
Phonograph Record Labor Agreement (Interstate) <sup>3</sup> . . . . .	Amusements . . . . .	Musicians . . . . .	15,000
Reliance Electric Co., Dodge Manufacturing Division (Mishawaka, Ind.) . . . . .	Machinery . . . . .	Steelworkers . . . . .	1,000
Volkswagen of America, Inc. (Westmoreland County, Pa.) . . . . .	Transportation equipment . . . . .	Auto Workers (Ind.) . . . . .	3,500
Western Airlines, Flight Attendants (Interstate) <sup>2</sup> . . . . .	Air transportation . . . . .	Airline Pilots Association (Ind.) . . . . .	2,300

<sup>1</sup> Affiliated with AFL-CIO except where noted as independent (Ind.).  
<sup>2</sup> Information is from newspaper reports.

<sup>3</sup> Industry area (group of companies signing same contract).

# Developments in Industrial Relations



## Striking air controllers fired by President Reagan

The Nation's air transportation system was disrupted when members of the Professional Air Traffic Controllers Organization (PATCO) walked off their jobs and then were dismissed by President Reagan for violating laws prohibiting walkouts by Federal employees. The situation was further confused by Government legal actions against strike leaders and the union's strike fund and a move to decertify PATCO as a bargaining agent. Controllers in other nations conducted sympathy job actions, contending that the U.S. air control system was not safe because of the reduction in the number of available controllers. Meanwhile, the Government was beginning to hire and train new controllers to replace the 12,000 strikers, a process that was expected to take about 2 years. The walkout led to pay cuts and layoffs at the airlines, already hard hit by high fuel costs and competition from new carriers.

There had been some hope that a walkout would be averted when PATCO and the Federal Aviation Administration agreed on a 42 month, \$40-million wage and benefit package. However, the controllers rejected the package by a 13,495 to 616 vote, reportedly because they wanted a 32-hour workweek, a larger earnings increase, and improvements in pensions.

The rejected accord would have raised average earnings by about 6.6 percent, or \$2,300 a year. This would have been in addition to the 4.8-percent annual increase that PATCO members and other Federal white-collar employees were scheduled to receive in October under provisions of the Federal Pay Comparability Act of 1970. Part of the 6.6-percent earnings increase would have resulted from a new provision giving the controllers time and one-half pay for the 37th, 38th, 39th, and 40th hours worked in a week. The balance would have come from increasing the premium pay to 15 percent, from 10 percent, for hours worked from 6 p.m. to 6 a.m., and

from ending the \$1,927.40 statutory limit on bi-weekly earnings. Finally, the accord called for the establishment of 14 weeks of severance pay for certain employees terminated for medical reasons.

When the walkout started, President Reagan said the union's current demands totaled \$681 million, which would impose an unacceptable tax burden on citizens. Citing the "no-strike" oath that Federal employees take, the President warned that strikers who did not report to work within 48 hours "have forfeited their jobs and will be terminated."

Despite this threat, only 800 controllers returned to work by the deadline and the FAA then began distributing dismissal notices. The Government sought back-to-work orders in various Federal district courts. Several fines were imposed on the union, including one by a judge in Brooklyn, N.Y., for violating a 1970 court order enforcing a consent decree with the airlines in which PATCO agreed not to strike again after a 1970 work stoppage.

Meanwhile, the Federal Labor Relations Authority was considering stripping PATCO of its right to represent the controllers. The authority was established by the Civil Service Reform Act of 1978 to act as an impartial tribunal to resolve labor disputes involving Federal workers. Decisions of the authority can be appealed to Federal appellate courts.

In response to charges by PATCO and other organizations regarding the safety of flight operations, the Federal Aviation Administration started a study of conditions that was expected to take about 4 months. Another study was begun by the National Transportation Safety Board, an independent agency. Flight operations stabilized at about 75 percent of the prestrike level of landings and takeoffs.

There was no public statement by the International Federation of Air Traffic Controllers Associations on what actions it might take in support of PATCO. After a 2-day meeting in the Netherlands, the federation strongly backed a resumption of negotiations between the Administration and PATCO, but said announcements of "details of any contemplated or agreed action at this time" would not be conducive to a settlement.

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

## Free agent issue settled, baseball strike ends

The first mid-season strike in the history of big league baseball ended after 50 days, when the Major League Baseball Players Association and the team owners' Player Representation Committee settled a dispute over how teams are compensated for "free agents" who move to another team. (The free agent option is available to all players with at least 6 years of major league service. It was adopted in 1976 after an arbitrator struck down the "reserve clause" that bound a player to one team for his entire career.)

The settlement provides that if a team loses a free agent who performs in the top 20 percent at his playing position (based on statistics), the team can select a player from a pool consisting of players from other clubs. If the departing player is in the top 20 to 30 percent category, the team losing the player receives a draft choice from the signing team for the annual draft of amateur players; if the player is below the top 30 percent, the team will not be compensated. Teams signing free agents can exclude 24 of their players from the pool and teams that do not sign free agents can exclude 26 players. A team losing a player from the pool will receive \$150,000 from a central fund established by the 26 major league teams.

The team owners agreed to give the 650 players service credit for the strike period in calculating pensions and other benefits. In return, the players agreed to extend the existing basic contract for 1 year, to December 31, 1984.

## Fred Kroll, head of Railway Clerks, dies

Fred J. Kroll, age 45, president of the Railway and Airline Clerks, died on July 30. Kroll was regarded as one of the Nation's outstanding labor leaders, and was the youngest person ever elected to the AFL-CIO's Executive Council. He joined the council in 1978, 2 years after he was selected to lead his union following the retirement of C. L. Dennis. Kroll, who was elected chairman of the Railway Labor Executives Association earlier this year, started his career as head of a local union in Philadelphia, moved up through various leadership positions, and became a vice president of the union in 1975. Richard I. Kilroy, a vice president of the Railway and Airline Clerks since 1973, was selected to complete Kroll's term, which ends on August 31, 1982.

## AFL-CIO council attacks Administration's policies

The AFL-CIO's Executive Council, meeting in Chicago for its summer session, assailed President Reagan's economic programs. Referring to the Administration's budget, views on job safety and social security benefits, and tax policies, AFL-CIO President Lane Kirkland said or-

ganized labor cannot "watch from the sidelines" as the policies are "consolidated on the backs of workers." In other business, the Auto Workers union, which had rejoined the federation on July 1, gained membership on the council when union president Douglas A. Fraser was elected a federation vice president.

## Citicorp announces 1981 pay raises

Employee resentment over Citicorp's decision not to grant a yearend bonus for 1980 operations was eased when the New York City bank holding company announced that it will raise salaries 9 percent in 1981 regardless of the profit level for 1981. The 50,000 employees had been receiving year-end bonuses of 10 to 15 percent of annual salaries, based on the increase in corporate profit per share of stocks. In 1980, Citicorp's profit dropped 6 percent from 1979, which led to the decision not to grant a bonus.

## Change in premium pay at Goodyear

The Rubber Workers accepted a Goodyear Tire & Rubber Co. proposal to end premium pay for some weekend work at a plant in Topeka, Kansas. As a result, Goodyear announced that it will proceed with a \$160 million addition to the plant, which now produces bias ply truck tires but will be converted to radial truck tires. Goodyear said that the contract change was necessary to permit continuous, economical operation of the plant.

Under the revised provision, premium pay will be time and one-half on Saturday and double time on Sunday for employees whose workweek starts on Monday, and time and one-half on Sunday for those whose workweek starts on Tuesday. Previously, all Saturday work was paid at time and one-half rates and Sunday work was paid at double time rates.

The change in premium pay indirectly improved the possibility that the company would not shut down its 44-year-old Jackson, Mich., plant, which also manufactures bias ply truck tires. Goodyear had earlier indicated that it no longer needed two plants producing this type of tire and that the Jackson plant was the logical choice for closing because of its higher operating costs, compared with the Topeka plant.

## Union concessions save newspaper

A scheduled shutdown of *The Philadelphia Bulletin* was averted when eight unions agreed to wage cuts, benefit reductions, and job terminations designed to reduce the newspaper's labor costs by \$4.9 million a year. The parent Charter Co. said the cuts were necessary to end 5 years of deficits. The company said it would spend \$30 million over the next 4 years to aid the *Bulletin*.

The concessions varied by union but were effective immediately, as specified in new 5-year contracts that superseded existing contracts. All of the new contracts provide for a 3-percent wage increase at the beginning of the second contract year and a 7-percent increase at the beginning of the third year. The contracts may be reopened for bargaining on wages, pension, and insurance benefits which would apply during the final 2 years of the contracts. The 900 workers represented by the unions are to receive 25 percent of the pretax amount of any profits earned by the newspaper.

The *Bulletin* had already announced pay reductions and layoffs among its nonunion employees that were expected to cut costs by \$1.4 million a year. News, advertising and circulation employees are not represented by unions.

The newspaper said that its financial difficulties stemmed from the same problems that have led to the closing of other afternoon papers—competition from television newscasts and the problem of distributing papers during rush-hour traffic. In early August, *The Washington Star*, an afternoon newspaper, closed after 128 years of operation in the Nation's Capital. In late August, the morning *New York Daily News* ended its 1-year-old "Tonight" edition.

#### **Auto industry continues to cut costs**

A. O. Smith Corp.'s Milwaukee plant won a contract to produce automobile frames for General Motors Corp. after seven unions agreed to forgo the next four quarterly cost-of-living pay adjustments. The company had asked for the freeze to hold down increases in its labor cost by 80 cents to \$1 an hour over the 1-year period, and thus, improve its chances of winning the production contract. The unions represent 4,300 workers.

As part of its cost containment effort, A. O. Smith also eliminated the 1981 bonus and reduced the merit pay budget for salaried employees, who are not represented by a union.

Elsewhere in the automobile industry, the Hayes Alcion Co. closed its West Unity, Ohio, plant after members of Allied Industrial Workers, Local 441 rejected a company request for a wage cut. The vote was 203 to

22. Under the proposed 3-year contract, the \$8.85 an hour average pay would have been reduced by about \$2, but the workers would have received a 45-cent increase in the second and third years. The plant manufactured tailpipes and mufflers.

#### **Meatpackers accept pay cut**

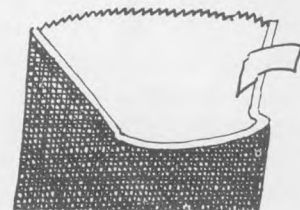
In Baltimore, 700 employees of the Schluderberg-Kurdle Co. Inc. meatpacking plant agreed to a wage and benefit concession to avert a planned shutdown. The company said the \$1.99-an-hour immediate reduction and elimination of 69 cents in scheduled future increases was necessary because of continued operating losses at the 123 year old plant, which produces meat products under the trade name Esskay. The plant lost \$1.6 million in the first half of 1981, compared with a \$495,000 loss for all of 1980. The employees are represented by the Food and Commercial Workers and the Teamsters unions.

#### **Southern textile workers get pay raise**

Several major textile companies in the South announced July or August wage increases for their employees. The size of the increase was not disclosed, but Burlington Industries, Inc. said that the increase for its 43,000 hourly employees varied somewhat from plant to plant but was generally uniform within each plant. The July 20 increase covered about 100 Burlington operations in 11 States. Other companies that announced increases were Cone Mills, Inc., and Dan River, Inc. The last round of wage increases in the industry was in July 1980. (See *Monthly Labor Review*, September 1980, p. 60.)

The Amalgamated Clothing and Textile Workers Union, which represents about 15 percent of the textile workers in the South, settled under a contract reopening provision with J. P. Stevens & Co. on a 9 percent wage increase for employees at plants in Roanoke Rapids and High Point, N.C., Allendale, S.C., and Montgomery, Ala. The union also negotiated a 9 percent increase for employees it represents at Cone Mills plants in Greensboro, Haw River, Reidsville, and Salisbury, N.C. □

# Book Reviews



## Labor's survival in an unlikely milieu

*Organizing Dixie: Alabama Workers in the Industrial Era.* By Philip Taft; revised and edited by Gary M Fink. Westport, Conn., Greenwood Press, 1981. 238 pp. \$35.

A renewed union drive to organize southern workers during the past 20 years has only recently obtained a foothold in the representation and negotiation of agreements in textiles, clothing, furniture, auto assembly, and shipbuilding. But union organization still has far to go in the South, and the climate remains unfriendly, as evidenced by the prevalence of "right to work" statutes in southern States. The industrial development of the southern and sunbelt States, some of which represents shifts from northern production centers, is crucial to the trade union movement.

Philip Taft's posthumous study, "Organizing Dixie," is significant in making clear that there is in Alabama a tradition of union organization, collective bargaining, and political activity that has its roots in the post-Civil War industrial development in the South. This was established in the face of endogenous factors which have been viewed as obstacles to unionism. These have included small establishments, a largely native work force drawn from rural areas, persistent discrimination against blacks, and a broad climate of employers and political opposition to union organization.

Taft undertook the study of Alabama labor while he was a consultant at the University of Alabama's Center for Labor Education and Research in 1972. The draft of the study, completed shortly before his death in 1976, has been revised and edited by Gary M Fink, Professor of History at Georgia State University. One can agree with Fink that the result is a Taft book, the last in an impressive output of labor economics and history which bear the hallmark of the Wisconsin school and the John R. Commons tradition. This found an emphasis in the American labor movement on American experimentalism in adjusting to new conditions, with an antipathy to doctrinaire positions.

This viewpoint is reflected in Taft's treatment of the more than a century of Alabama labor history. He has contributed an important insight into the development and influence of union coordination and confederation at State levels. His contribution is enhanced by

detailing the qualities of this southern labor leadership in meeting the impact of northern industrial interests on the regional economy, and in seeking to overcome the divisive effects of black-white prejudices, at least in the workplace and the union. The basic outlines of ebb and flow of union strength in Alabama generally followed the broader national patterns influenced by economic conditions; the intensity of employer opposition; and the role of government, notably during the First World War, and the New Deal period and thereafter. But while prejudices and differences among immigrant groups in the northern labor force were assuaged in time, racial prejudice persisted in the South along with opposition to union organization.

Alabama was attractive for northern capital investment within a decade after the Civil War. Its iron ore, coal resources, and railroads readily made for combining the development of natural resources with new steel facilities. By the end of the century, the major national steel companies had absorbed many of these operations. While local union organizations had developed early among craft workers and railroad workers, the groundwork for much of the Alabama labor movement developed out of the organization of the coal miners. The mines were intensively developed after the Civil War with a labor force consisting of native-born black and white miners from the rural areas. Convict laborers, leased to private employers, were a part of the labor force, sufficient to influence the outcome of a strike, since they had no choice but to continue working.

Effective organization among Alabama miners developed in the eighties and in 1898 the independent Alabama miners union affiliated with the United Mine Workers of America. The study demonstrates the union leadership's recognition that unity among black and white miners was essential to mutual progress, and the United Mine Workers made no distinctions on equal rights in the union. For over a decade, the terms of the contract negotiated with the Tennessee Coal and Iron Railroad Co. became the standard for most of the Alabama coal industry. In 1908, however, the union conducted a strike which failed in the face of a combination of newspaper stories appealing to racial prejudice through allegations of social equality resulting from the union's policies, and the governor's action, claiming sanitation needs, in ordering the tearing down of the tents to which the miners' families had moved following

eviction from company-owned housing.

The United Mine Workers played a major role in the formation of the Alabama State Federation of Labor in 1900 and in its continuing activities over the years. This influence was apparent in the election of blacks to 2 of the 5 elected offices. The Federation was weak in membership and funds, but it was vocal on political matters. The 1912 convention of the Federation was notable for its reform platform expressing working-class interests. This called for elimination of the convict lease system; protection of women and child labor; mine safety reforms; and the initiative, referendum, and recall, among the reforms.

During the First World War, there were gains in organization, limited recognition, and improved wage and working conditions in major Alabama industries. With the postwar open shop drive of the America Plan in the twenties to eliminate wartime gains, there were unsuccessful defensive strikes in Alabama as elsewhere. The 1920–21 strike in Alabama coal mining was marked by violence and charges that the United Mine Workers were fighting for black social equality.

Coal and the UMWA again provided the impetus for renewed activity and organization with the New Deal. For a time, company resistance to union organization kept Alabama coal mines in constant turmoil. But the UMWA made gains, achieving total organization in coal mines by the early forties, and became the largest Alabama union. Its officials were prominent in organizing the Alabama steelworkers. In 1935, the Alabama State Federation of Labor endorsed industrial unionism and elected the district UMW president to the Federation presidency. With the split between the AFL and CIO in 1937, the president resigned, urging cooperation and warning against recriminations which would endanger the labor movement.

Black workers had joined in substantial numbers in coal, iron ore, and steel manufacturing unions before the split. The Alabama State Federation and the newly established Alabama State Industrial Council, respectively AFL and CIO affiliates, were actively engaged in extending organization among both black and white workers. In 1942, the Alabama CIO called for elimination of discrimination in employment, but remained circumspect in maintaining separate social arrangements. The Alabama AFL called for efforts at more rapid unionization of black workers at the end of the Second World War. In 1946, the Federation was one of the few organizations to oppose a constitutional amendment designed to reduce the political rights of black voters in Alabama, and in 1947 the State Federation approved of a Federal civil rights law.

The State labor organizations readily accommodated to the merger of the AFL and CIO in 1955. With it, their political role in Alabama was enhanced. Functioning in

what was often an unfriendly environment, which included the opposition of many union members, as well as of the public, the Alabama Labor Council officials may be viewed as political realists. They have focused on protecting the interests of the State's workers, particularly against denial of the rights of workers and unions in labor disputes. In supporting candidates for State and local offices, emphasis for endorsement has been placed on the candidates' willingness to consider the labor point of view and to oppose legislation hostile to the labor movement. On race relations, as Fink sums it up, the Alabama labor movement may have been wanting in resisting school integration, but it was the labor leaders who "Led Alabama workers, however reluctantly, into a new era of racial accommodation beneficial to workers of both races".

—JOSEPH P. GOLDBERG  
Special Assistant to the Commissioner  
Bureau of Labor Statistics

### Women, the family, and the women's movement

*At Odds: Women and the Family in America from the Revolution to the Present.* By Carl N. Degler. New York, Oxford University Press, 1980. 527 pp. \$19.95.

In every branch of written history, the family has been the vehicle through which men and women have entered upon life. So begins Carl N. Degler, Pulitzer prize-winning historian who never loses sight of this context as he discusses the role of women in the United States.

His balanced presentation indicates that, prior to the American Revolution, families in America were much like those anywhere else in the world.

By the 19th century, however, American families differed from those of earlier times in that (1) marriages were based upon affection and mutual respect between partners (2) the wife's primary role was the caring for children and maintenance of the home (3) the attention, energy, and resources of the parents were increasingly centered upon the rearing of their offspring, and (4) the family, on the average, was significantly smaller than the families of earlier times which were unable to save and accumulate wealth for investment and economic growth.

The wife was perceived as the moral superior to the husband, though his legal and social inferior. The ideological justification of the division of labor—the wife spending her time in the house while the husband worked outside the home—is called by Degler, "the doctrine of the two spheres."

In the years before the Civil War, the antislavery cause conspicuously attracted women, especially married women, and did the most to move them into public activities. After the Civil War, a number of organizations came into being to press for improved moral standards within and outside the family. Women campaigned against liquor and prostitution, in favor of raising the age of consent for girls, and generally advocated a single standard of sexual behavior for men and women.

Social purists defended women's rights to employment, one argument being that it would help make marriage a relationship of affection between companions and advance the autonomy of women within it.

Around the end of the 18th century, there was marked improvement in the education of young women. In 1837, the total exclusion of women from colleges was broken when Oberlin College, in Ohio, permitted women to enroll with men at its opening. The most obvious and important connection between the new educational opportunity for women and organizations of women was the settlement movement. The idea was to have young, socially conscious middle-class men and women live in the poor, working class, and immigrant districts of the great cities in order to bring understanding, practical help, entertainment, and some intellectual experience to the inhabitants.

The new occupation of social work not only appealed to women, but was also quickly accepted as a proper occupation for women.

Some women's organizations were equally direct responses to the radical social transformation engendered by industrial expansion. In 1866, the Young Women's Christian Association was formed in Boston to help young women find work. The National Consumer's League and the Women's Trade Union League were the most important women's organizations that clearly responded to the stresses of industrialization. By the end of the 19th century, half of the important women's organizations had been established—most of them in the 1890's. In 1910, Congress awarded a national charter to the General Federation of Women's Clubs and national membership had reached 800,000.

By the turn of the 20th century, single women were clearly more than the peripheral or ignored persons they had been earlier in American history, Degler indicates. Although some women may have felt excluded or deeply unhappy because they could not marry, for others, remaining single was a conscious choice and one that promised a richness of experience that marriage did not offer. By 1972, about one-fifth of the women between 35 and 44 years of age who had some graduate education or an income of \$20,000 or more, had not married. This figure is to be compared with the barely 5 percent of women in that age bracket without college

education who were still single.

Men originally could not accept women's suffrage, for they could not help recognizing that it might alter their place in politics and in the family, says the author. Also, a sizable minority of women were far from silent in their opposition to the movement. These women organized against their own political emancipation because they perceived it to be a threat to the family.

How was it that suffrage was finally accepted in 1928? First, the campaign, mounted by the suffragists was powerful and well organized, and second, the fear that suffrage threatened the family declined. Though the suffrage cause in the 19th century had become increasingly central to the feminist cause, suffrage, once achieved, had almost no observable effect upon the position of women. The right to vote did not—and could not—affect women's role within the family one way or the other.

Within 3 years after the ratification of the women's suffrage amendment, Alice Paul, a radical feminist, proposed an equal rights amendment to the Constitution. It would have required the law to recognize and treat women as individuals, not as members of a sex. If it had been ratified, it would have nullified all the special protective legislation on behalf of women that had been enacted in the preceding 20 years or more, according to Degler. As a result, women leaders of the day, such as Jane Addams, the head of the Chicago settlement house Hull House, rejected the amendment.

Prior to World War II, women between the ages of 20 and 24 tended to work, then marry and leave the labor force. But World War II transformed the labor market by increasing occupational opportunities for women. By 1960, the proportion of women between 45 and 54 in the labor force was greater than the percentage of women between 20 and 24.

The Civil Rights Act of 1964 was the most significant single force behind the new feminist movement for, from the time of its passage on, women's equality of opportunity was endorsed by the Federal Government. The increasing participation of married women in the work force and the general concern for equality which the Civil Rights Revolution sparked, helped to bring pressures for legislation.

Because women in the work force had become older, the safety laws that had been passed to protect women who had yet to bear children were no longer so important as to endanger the Equal Rights Amendment point of view. However, the organized women's movement was once again unable to pass the Equal Rights Amendment. Part of the reason undoubtedly was that the amendment seemed to threaten some women as well as men, says Carl Degler. The truth is, despite the assertions from both sides, ratification of the amendment would not change much, so complete had been the legal

and constitutional transformation brought about by the feminist revival, the author maintains. But, Degler argues, passage of the ERA would imbue in the Constitution the legal basis for feminist gains of the preceding decade and thus make their repeal difficult in the future. It would also hasten the removal of the few remaining legal obstacles to full equal opportunity between the sexes.

The National Organization for Women sought to attract ethnic and radical minority women into its ranks, but largely without success, the author points out. Feminism has always been a middle-class cause and for many women, equal employment was not a real issue, especially if it seemed to compete with or threaten family relations.

How can young women be offered, at the outset of their lives, the same personal horizons that are routinely vouchsafed to young men? One authority contends that if women are to have equal opportunity, the work patterns of the economy must be altered to fit their fundamental relationship to children and family. Another alternative to women as sole child-rearers, and the option most commonly advocated, is some form of institutional arrangement that would permit women with children to pursue work.

The recognition and the realization of women's individuality in work will be difficult for an even more profound reason, Degler says. The central values of the modern family stand in opposition to those which underlie women's emancipation. The family has insisted upon subordination of individual interests to those of the group.

"The ideal goal, it would seem, would be one in which the values of family and the realization of women's individuality could be reconciled," Degler says.

"Will it be possible for women and men to work out some arrangements—call it family or something else—in which these two goals can be realized? Or must the historic drive for women's individuality stop short of full realization in the name of children, husband, and family?" He concludes that, ". . . presumably a resolution will come in something less than another two centuries."

Degler indicates in his acknowledgments that he and his wife, also a teacher, have debated women's issues for over 30 years. This, plus his considerable talent, may be a factor that has helped to produce an admirable well-tempered discussion of abortion, equal pay for equal work, and the women's movement—all of which could be subject to woeful distortions.

—MARY ELLEN AYRES  
Office of Publications  
Bureau of Labor Statistics

## Publications received

### Economic and social statistics

- Abel, Andrew B., "A Dynamic Model of Investment and Capacity Utilization." *The Quarterly Journal of Economics*, August 1981, pp. 379-403.
- Bianchi, Suzanne M., *Household Composition and Racial Inequality*. New Brunswick, N.J., Rutgers, The State University of New Jersey, 1981, 199 pp., bibliography. \$16, Rutgers University Press, New Brunswick, N.J.
- Levhari, David and Robert S. Pindyck, "The Pricing of Durable Exhaustible Resources," *The Quarterly Journal of Economics*, August 1981, pp. 365-77.
- Meyer, Robert H. and David A. Wise, *Discontinuous Distributions and Missing Persons: The Minimum Wage and Unemployed Youth*. Cambridge, Mass., National Bureau of Economic Research, Inc., 1981, 62 pp. (NBER Working Paper Series, 711.) \$1.50.

### Economic growth and development

- Dasgupta, Partha and Joseph Stiglitz, *Uncertainty, Industrial Structure and the Speed of R&D*. Cambridge, Mass., National Bureau of Economic Research, Inc., 1981. (Reprinted from *The Bell Journal of Economics*, Spring 1980, pp. 1-28). (NBER Reprint 156.) \$1.50.
- Hershman, Arlene, "The 1982 Economy: How Much Growth?" *Dun's Review*, August 1981, pp. 32-36.
- Levi, Maurice, *Economics Deciphered: A Layman's Survival Guide*. New York, Basic Books, Inc., Publishers, 1981, 306 pp. \$13.95.

### Education

- "Education as Transformation: Identity, Change, and Development—A Special Issue," *Harvard Educational Review*, February 1981, pp. 1-184.
- Venti, Steven and David A. Wise, *Test Scores and Self-Selection of Higher Education: College Attendance Versus College Completion*. Cambridge, Mass., National Bureau of Economic Research, Inc., 1981, 65 pp. (NBER Working Paper Series, 709.) \$1.50.

### Industrial relations

- Balfour, Alan and Alexander B. Holmes, "The Effectiveness of No Strike Laws for Public School Teachers," *Journal of Collective Negotiations in the Public Sector*, Vol. 10, No. 2, 1981, pp. 133-44.
- Cascio, Wayne F. and H. John Bernardin, "Implications of Performance Appraisal Litigation for Personnel Decisions," *Personnel Psychology*, Summer 1981, pp. 211-26.
- Coffinberger, Richard L., "A Primer on Unionization Motives," *Journal of Collective Negotiations in the Public Sector*, Vol. 10, No. 2, 1981, pp. 123-32.
- Cooke, Lawrence H., "Waste Not, Wait Not—A Consideration of Federal State Jurisdiction," *Fordham Law Review*, May 1981, pp. 895-903.
- Dorr, John Van N. III, "Labor Arbitrator Training: The Internship," *The Arbitration Journal*, June 1981, pp. 4-10.
- Gilmore, Carol B., "The Impact of Faculty Collective Bargaining on the Management of Public Higher Educational Institutions," *Journal of Collective Negotiations in the*



*Public Sector*, Vol. 10, No. 2, 1981, pp. 145-52.

Holley, William H., Hubert S. Feild, James C. Crowley, "Negotiating Quality of Worklife, Productivity and Traditional Issues: Union Members' Preferred Roles of Their Union," *Personnel Psychology*, Summer 1981, pp. 309-28.

Honadle, Beth Walter, "A Model of the Public Sector Wage Determination Process—With Special Reference to Institutional Factors," *Journal of Collective Negotiations in the Public Sector*, Vol. 10, No. 2, 1981, pp. 105-22.

Karro, David G., "The Importance of Being Earnest: Pleading and Maintaining a Title VII Class Action for the Purpose of Resolving the Claims of Class Members," *Fordham Law Review*, May 1981, pp. 904-55.

Krislov, Joseph and John Mead, "Arbitrating Union Conflicts: An Analysis of the AFL-CIO Internal Disputes Plan." *Arbitration Journal*, June 1981, pp. 21-29.

Noam, Eli M., "The Valuation of Legal Rights," *The Quarterly Journal of Economics*, August 1981, pp. 465-76.

Princeton University, *Outstanding Books in Industrial Relations and Labor Economics, 1980*. Princeton, N.J., Princeton University, Industrial Relations Section, March 1981, 4 pp. (Selected References, 206.) 50 cents.

Zack, Arnold M., "Who Is Responsible for the Development of Arbitrators—The Parties or the Arbitrators?" *The Arbitration Journal*, June 1981, pp. 11-14.

Zirkel, Perry A. and J. Gary Lutz, "Characteristics and Functions of Mediators: A Pilot Study," *The Arbitration Journal*, June 1981, pp. 15-20.

### Industry and government organization

Bemis, Judson and John A. Cairns, "In Minnesota, Business is Part of the Solution," *Harvard Business Review*, July-August 1981, pp. 85-93.

Congressional Quarterly, Inc., *Federal Regulatory Directory, 1981-82*. 2d. ed. Washington, Congressional Quarterly, Inc., 1981, 875 pp. \$27.50.

Drayton, William, "Getting Smarter About Regulation," *Harvard Business Review*, July-August 1981, beginning on p. 38.

Economic Council of Canada, *Reforming Regulation*. Ottawa, Ontario, Economic Council of Canada, 1981, 167 pp. \$9.95, Canada; \$11.95, other countries. Available from Canadian Government Publishing Center, Supply and Services Canada, Ottawa.

Fernandez, John P., *Racism and Sexism in Corporate Life: Changing Values in American Business*. Lexington, Mass., D.C. Heath and Co., Lexington Books, 1981, 359 pp., bibliography. \$28.95.

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

Lave, Lester B., *The Strategy of Social Regulation: Decision Frameworks for Policy*. Washington, The Brookings Institution, 1981, 166 pp., bibliography. \$19.95, cloth; \$7.95, paper.

### International economics

Bond, Marian E., "Exchange Rates, Inflation, and Vicious Circles," *International Monetary Fund Staff Papers*, December 1981, pp. 679-711.

Buiter, William H., "Monetary, Financial, and Fiscal Policies Under Rational Expectations," *International Monetary Fund Staff Papers*, December 1980, pp. 785-813.

"Export Diversification and the New Protectionism: The Experiences of Latin America—Special Issue," *The Quarterly Review of Economics and Business*, Summer 1981, pp. 9-301.

Heller, Peter S., "Impact of Inflation on Fiscal Policy in Developing Countries," *International Monetary Fund Staff Papers*, December 1981, pp. 712-48.

Pardee, Scott E., "Treasury and Federal Reserve Foreign Exchange Operations: Interim Report," *Federal Reserve Bulletin*, June 1981, pp. 486-87.

The American Assembly, Columbia University, *The China Factor: Final Report of the 59th American Assembly, Held at Arden House, Harriman, N.Y., Mar. 19-22, 1981*. New York, Columbia University, The American Assembly, 1981, 15 pp.

von Furstenberg, George M., "Domestic Determinants of New U.S. Foreign Investment," *International Monetary Fund Staff Papers*, December 1981, pp. 637-78.

"Where Growth Still Works," *The Economist*, July 18, 1981, beginning on p. 51.

### Labor force

Alternative Work Options for Older Workers: Part I, "Employees' Interests," by Carolyn E. Usher; Part II, "The Managers' View," by Stephen R. McConnell, *Aging and Work*, Spring 1981, pp. 74-87.

Nodera, Yasuyuki, "Japanese Employment Policies for Older Workers," *Aging and Work*, Spring 1981, pp. 101-08.

U.S. Bureau of Labor Statistics, *Philadelphia Employment Trends, 1980*. Philadelphia, Pa., 1981, 28 pp. (Regional Report 52.)

### Management and organization theory

Baird, John E., Jr., "Supervisory and Managerial Training Through Communication by Objectives," *Personnel Administrator*, July 1981, pp. 28-32.

Bekiroglu, Haluk and Turan Gonen, "Labor Turnover: Roots, Costs and Some Potential Solutions," *Personnel Administrator*, July 1981, beginning on p. 67.

Biles, George E., "A Program Guide for Preventing Sexual Harassment in the Workplace," *Personnel Administrator*, June 1981, pp. 49-56.

Burck, Charles G., "Working Smarter: What's In It for Unions," *Fortune*, Aug. 24, 1981, pp. 88-92.

Buss, Martin D. J., "Penny-Wise Approach to Data Processing," *Harvard Business Review*, July-August 1981, pp. 111-17.

Ebenstein, Michael and Leonard I. Krauss, "Strategic Planning for Information Resource Management," *Management Review*, June 1981, pp. 21-26.

Ezell, Hazel F., Charles A. Odewahn, J. Daniel Sherman, "The Effects of Having Been Supervised by a Woman on Perceptions of Female Managerial Competence," *Personnel Psychology*, Summer 1981, pp. 291-99.

Flynn, W. Randolph and Judith U. Litzsinger, "Careers Without Conflict," *Personnel Administrator*, July 1981, pp. 81-85.

- Goode, Leon F. and David H. Meier, "Productivity Measurement for Thinkers," *The Bureaucrat*, Spring 1981, pp. 36-42.
- Greenlaw, Paul S. and John P. Kohl, "Sexual Harassment: Homosexuality, Bisexuality, and Blackmail," *Personnel Administrator*, June 1981, pp. 59-62.
- Haldane, Bernard, *Career Satisfaction and Success: How to Know and Manage Your Strengths*. (Rev. ed.) New York, AMACOM, A division of American Management Associations, 1981, 210 pp. \$12.95.
- Hatvany, Nina and Vladimir Pucik, "Japanese Management Practices and Productivity," *Organizational Dynamics*, Spring 1981, pp. 4-21.
- Hayes, Robert H., "Why Japanese Factories Work," *Harvard Business Review*, July-August 1981, pp. 56-66.
- Holbrook, James E., "Here's How to Sell Your Ideas for Audio-Visual Training Programs to Top Management," *Personnel Administrator*, July 1981, pp. 34-39.
- Jennings, Eugene E., "How to Develop Your Management Talent Internally," *Personnel Administrator*, July 1981, pp. 20-23.
- Juran, J. M., "Product Quality—A Prescription for the West: Part I, Training and Improvement Programs," *Management Review*, June 1981, pp. 9-14.
- Kammert, James L., *International Commercial Banking Management*. New York, AMACOM, A division of American Management Associations, 1981, 403 pp. \$24.95.
- Lynch, Thomas D. and Gerald T. Gabris, "Obstacles to Effective Management," *The Bureaucrat*, Spring 1981, pp. 8-14.
- McCrone, William P. and Richard L. Arthur, "The Deaf Applicant: Considerations for Personnel Managers," *Personnel Administrator*, June 1981, pp. 65-69.
- Martin, Wallace, "What Management Can Expect From an Employee Attitude Survey," *Personnel Administrator*, July 1981, beginning on p. 75.
- Medoff, James L. and Katharine G. Abraham, *Experience, Performance, and Earnings*. Cambridge, Mass., National Bureau of Economic Research, Inc., 1981. Reprinted from *The Quarterly Journal of Economics*, December 1980, pp. 703-36. (NBER Reprint, 159.) \$1.50.
- Monat, Jonathan S., "A Perspective on the Evaluation of Training and Development Programs," *Personnel Administrator*, July 1981, pp. 47-52.
- Montgomery, Robert L., *Listening Made Easy: How to Improve Listening on the Job, at Home and in the Community*. New York, AMACOM, A division of American Management Associations, 1981, 134 pp. \$10.95.
- Moravec, Milan, "Performance Appraisal: A Human Resource Management System with Productivity Payoffs," *Management Review*, June 1981, pp. 51-54.
- Myers, Donald W., "The Impact of a Selected Provision in the Federal Guidelines on Job Analysis and Training," *Personnel Administrator*, July 1981, pp. 41-45.
- Newstrom, John W., "The Dynamics of Effective Team Teaching," *Personnel Administrator*, July 1981, beginning on p. 55.
- Nugent, Patrick S., "Management and Modes of Thought," *Organizational Dynamics*, Spring 1981, pp. 44-59.
- "Personnel and Energy," *Personnel Administrator*, June 1981, beginning on p. 20.
- Porras, Jerry I. and Brad Anderson, "Improving Managerial Effectiveness Through Modeling Based Training," *Organizational Dynamics*, Spring 1981, pp. 60-77.
- Rosenbaum, Bernard L., *How to Motivate Today's Workers: Motivational Models for Managers and Supervisors*. New York, McGraw-Hill Book Co., 1982, 201 pp. \$15.95.
- Tavernier, Gerard, "Awakening a Sleeping Giant . . . Ford's Employee Involvement Program," *Management Review*, June 1981, pp. 15-20.
- Tracey, William R., *Human Resource Development Standards: A Self Evaluation Manual for HRD Managers and Specialists*. New York, AMACOM, A division of American Management Associations, 1981, 598 pp. \$39.95.
- Truskie, Stanley D., "Guidelines for Conducting in-House Management Development," *Personnel Administrator*, July 1981, pp. 25-27.
- White, Michael C., Michael D. Crino, Gerry L. DeSanctis, "A Critical Review of Female Performance, Performance Training and Organizational Initiatives Designed to Aid Women in the Work-Role Environment," *Personnel Psychology*, Summer 1981, pp. 227-48.
- Zedeck, Sheldon, "Behaviorally Based Performance Appraisals," *Aging and Work*, Spring 1981, pp. 89-100.
- Zierden, William E., "Managing Workplace Innovations: A Framework and a New Approach," *Management Review*, June 1981, pp. 57-61.

#### Monetary and fiscal policy

- Cole, Roger T., "Financial Performance of Small Banks, 1977-80," *Federal Reserve Bulletin*, June 1981, pp. 480-85.
- Cook, Timothy, "Determinants of the Spread Between Treasury Bill and Private Sector Money Market Rates," *Journal of Economics and Business*, Summer 1981, pp. 177-87.
- Cornyn, Anthony G. and Thomas L. Zearley, "Financial Developments of Bank Holding Companies in 1980," *Federal Reserve Bulletin*, June 1981, pp. 473-79.
- Kolb, Robert W., "Predicting Dividend Changes," *Journal of Economics and Business*, Summer 1981, pp. 218-30.
- Kopecky, Kenneth J., "Required Reserve Ratios and Monetary Control," *Journal of Economics and Business*, Summer 1981, pp. 212-17.
- Stuart, Alexander, "Are the Oil Stocks Oversold?" *Fortune*, Aug. 24, 1981, pp. 50-56.

#### Productivity and technological change

- Buehler, Vernon M. and Y. Krishna Shetty, eds., *Productivity Improvements: Case Studies of Proven Practice*. New York, AMACOM, A division of American Management Associations, 1981, 273 pp. \$19.95.
- Lichtenberg, Frank R., *Training, Tenure, and Productivity*. Cambridge, Mass., National Bureau of Economic Research, Inc., 1981, 40 pp. (NBER Working Paper Series, 671.) \$1.50.
- Peitchinis, Stephen G. with Elizabeth MacDonald, *The Attitude of Trade Unions Towards Technological Changes*. Ottawa, Ontario, Canada, Federal Department of Industry, Trade and Commerce, Technology Branch, 1980, 73 pp. □

# Current Labor Statistics

---

<b>Notes on Current Labor Statistics</b> .....	58
<b>Schedule of release dates for major BLS statistical series</b> .....	58
<b>Employment data from household survey. Definitions and notes</b> .....	59
1. Employment status of noninstitutional population, selected years, 1950-80 .....	59
2. Employment status by sex, age, and race, seasonally adjusted .....	60
3. Selected employment indicators, seasonally adjusted .....	61
4. Selected unemployment indicators, seasonally adjusted .....	62
5. Unemployment rates, by sex and age, seasonally adjusted .....	63
6. Unemployed persons, by reason for unemployment, seasonally adjusted .....	63
7. Duration of unemployment, seasonally adjusted .....	63
<b>Employment, hours, and earnings data from establishment surveys. Definitions and notes</b> .....	64
8. Employment by industry, 1951-80 .....	65
9. Employment by State .....	65
10. Employment by industry division and major manufacturing group .....	66
11. Employment by industry division and major manufacturing group, seasonally adjusted .....	67
12. Labor turnover rates in manufacturing, 1977 to date .....	68
13. Labor turnover rates in manufacturing, by major industry group .....	68
14. Hours and earnings, by industry division, 1950-80 .....	69
15. Weekly hours, by industry division and major manufacturing group .....	70
16. Weekly hours, by industry division and major manufacturing group, seasonally adjusted .....	71
17. Hourly earnings, by industry division and major manufacturing group .....	72
18. Hourly Earnings Index, by industry division, seasonally adjusted .....	72
19. Weekly earnings, by industry division and major manufacturing group .....	73
20. Gross and spendable weekly earnings, in current and 1967 dollars, 1961 to date .....	74
<b>Unemployment insurance data. Definitions</b> .....	75
21. Unemployment insurance and employment service operations .....	75
<b>Price data. Definitions and notes</b> .....	76
22. Consumer Price Index, 1967-80 .....	77
23. Consumer Price Index, U.S. city average, general summary and selected items .....	77
24. Consumer Price Index, cross classification of region and population size class .....	83
25. Consumer Price Index, selected areas .....	84
26. Producer Price Indexes, by stage of processing .....	85
27. Producer Price Indexes, by commodity groupings .....	86
28. Producer Price Indexes, for special commodity groupings .....	88
29. Producer Price Indexes, by durability of product .....	88
30. Producer Price Indexes for the output of selected SIC industries .....	88
<b>Productivity data. Definitions and notes</b> .....	91
31. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years, 1950-80 .....	91
32. Annual changes in productivity, hourly compensation, unit costs, and prices, 1970-80 .....	92
33. Quarterly indexes of productivity, hourly compensation, unit costs, and prices, seasonally adjusted .....	92
34. Percent change from preceding quarter and year in productivity, hourly compensation, unit costs, and prices ..	93
<b>Labor-management data. Definitions</b> .....	94
35. Wage and benefit settlements in major collective bargaining units, 1976 to date .....	94
36. Effective wage rate adjustments going into effect in major collective bargaining units, 1976 to date .....	95
37. Work stoppages, 1947 to date .....	95

## NOTES ON CURRENT LABOR STATISTICS

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

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

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

Seasonally adjusted labor force data in tables 2-7 were revised in the February 1981 issue of the *Review* to reflect the preceding year's experience. Beginning in January 1980, the BLS introduced two major modifications in the seasonal adjustment methodology for labor force data. First, the data are being seasonally adjusted with a new procedure called X-11/ARIMA, which was developed at Statistics Canada as an extension of the standard X-11 method. A detailed description of the procedure appears in *The X-11 ARIMA Seasonal Adjustment Method* by Estela Bee Dagum (Statistics Canada Catalogue No. 12-564E, February 1980). The second change is that seasonal factors are now being calculated for use during the first 6 months of the year, rather than for the entire year, and then are calculated at mid-year for the July-December period. Revisions of historical data continue to be made only at the end of each calendar year.

Annual revision of the seasonally adjusted payroll data in tables 11, 13, 16, and 18 begins with the August 1980 issue using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in tables 33 and 34 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month to month and from quarter to quarter are

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

**Adjustments for price changes.** Some data are adjusted to eliminate the effect of changes in price. These adjustments are made by dividing current dollar values by the Consumer Price Index or the appropriate component of the index, then multiplying by 100. For example, given a current hourly wage rate of \$3 and a current price index number of 150, where 1967 = 100, the hourly rate expressed in 1967 dollars is \$2 ( $\$3/150 \times 100 = \$2$ ). 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, and in two comprehensive data books issued annually—*Employment and Earnings, United States* and *Employment and Earnings, States and Areas*. More detailed information on wages and other aspects of collective bargaining appears in the monthly periodical, *Current Wage Developments*. More detailed price information is published each month in the periodicals, the *CPI Detailed Report* and *Producer Prices and Price Indexes*.

### Symbols

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

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

n.e.c. = not elsewhere classified.

**Schedule of release dates for major BLS statistical series**

Series	Release date	Period covered	Release date	Period covered	MLR table number
Employment situation .....	October 2	September	November 6	October	1-11
Producer Price Index .....	October 9	September	November 6	October	26-30
Consumer Price Index .....	October 23	September	November 24	October	22-25
Real earnings .....	October 23	September	November 24	October	14-20
Productivity and costs:					
Nonfarm business and manufacturing .....	October 28	3d quarter	...	...	31-34
Nonfinancial corporations .....	...	...	November 25	3d quarter	31-34
Labor turnover in manufacturing .....	October 29	September	November 30	October	12-13
Work stoppages .....	October 29	September	November 30	October	37
Major collective bargaining settlements .....	October 30	1st 9 months	...	...	35-36

## EMPLOYMENT DATA FROM THE HOUSEHOLD SURVEY

EMPLOYMENT DATA in this section are obtained from the Current Population Survey, a program of personal interviews conducted monthly by the Bureau of the Census for the Bureau of Labor Statistics. The sample consists of about 60,000 households beginning in May 1981, selected to represent the U.S. population 16 years of age and older. Households are interviewed on a rotating basis, so that three-fourths of the sample is the same for any 2 consecutive months.

### Definitions

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

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

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

those not classified as employed or unemployed; this group includes persons retired, those engaged in their own housework, those not working while attending school, those unable to work because of long-term illness, those discouraged from seeking work because of personal or job market factors, and those who are voluntarily idle. The **noninstitutional population** comprises all persons 16 years of age and older who are not inmates of penal or mental institutions, sanitariums, or homes for the aged, infirm, or needy.

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

### Notes on the data

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

Data in tables 2-7 are seasonally adjusted, based on the seasonal experience through December 1980.

Year	Total non-institutional population	Total labor force		Civilian labor force					Not in labor force	
		Number	Percent of population	Total	Employed			Unemployed		
					Total	Agriculture	Nonagricultural industries	Number		Percent of labor force
1950	106,645	63,858	59.9	62,208	58,918	7,160	51,758	3,288	5.3	42,787
1955	112,732	68,072	60.4	65,023	62,170	6,450	55,722	2,852	4.4	44,660
1960	119,759	72,142	60.2	69,628	65,778	5,458	60,318	3,852	5.5	47,617
1964	127,224	75,830	59.6	73,091	69,305	4,523	64,782	3,786	5.2	51,394
1965	129,236	77,178	59.7	74,455	71,088	4,361	66,726	3,366	4.5	52,058
1966	131,180	78,893	60.1	75,770	72,895	3,979	68,915	2,875	3.8	52,288
1967	133,319	80,793	60.6	77,347	74,372	3,844	70,527	2,975	3.8	52,527
1968	135,562	82,272	60.7	78,737	75,920	3,817	72,103	2,817	3.6	53,291
1969	137,841	84,240	61.1	80,734	77,902	3,606	74,296	2,832	3.5	53,602
1970	140,182	85,903	61.3	82,715	78,627	3,462	75,165	4,088	4.9	54,280
1971	142,596	86,929	61.0	84,113	79,126	3,387	75,732	4,993	5.9	55,666
1972	145,775	88,991	61.0	86,542	81,702	3,472	78,230	4,840	5.6	56,785
1973	148,263	91,040	61.4	88,714	84,409	3,452	80,957	4,304	4.9	57,222
1974	150,827	93,240	61.8	91,011	83,935	3,492	82,443	5,076	5.6	57,587
1975	153,449	94,793	61.8	92,613	84,783	3,380	81,403	7,830	8.5	58,655
1976	156,048	96,917	62.1	94,773	87,485	3,297	84,188	7,288	7.7	59,130
1977	158,559	99,534	62.8	97,401	90,546	3,244	87,302	6,855	7.0	59,025
1978	161,058	102,537	63.7	100,420	94,373	3,342	91,031	6,047	6.0	58,521
1979	163,620	104,996	64.2	102,908	96,945	3,297	93,648	5,963	5.8	58,623
1980	166,246	106,821	64.3	104,719	97,270	3,310	93,960	7,448	7.1	59,425

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

[Numbers in thousands]

Employment status	Annual average		1980						1981						
	1979	1980	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
<b>TOTAL</b>															
Total noninstitutional population <sup>1</sup> .....	163,620	166,246	166,578	166,789	167,005	167,201	167,396	167,585	167,747	167,902	168,071	168,272	168,480	168,685	168,855
Total labor force .....	104,996	106,821	107,059	107,101	107,288	107,404	107,191	107,668	107,802	108,305	108,851	109,533	108,307	108,603	108,762
Civilian noninstitutional population <sup>1</sup> .....	161,532	164,143	164,464	164,667	164,884	165,082	165,272	165,460	165,627	165,774	165,941	166,145	166,349	166,546	166,695
Civilian labor force .....	102,908	104,719	104,945	104,980	105,167	105,285	105,067	105,543	105,681	106,177	106,722	107,406	106,176	106,464	106,602
Employed .....	96,945	97,270	97,003	97,180	97,206	97,339	97,282	97,696	97,927	98,412	98,976	99,235	98,392	98,962	98,944
Agriculture .....	3,297	3,310	3,210	3,399	3,319	3,340	3,394	3,403	3,281	3,276	3,463	3,353	3,265	3,258	3,370
Nonagricultural industries .....	93,648	93,960	93,793	93,781	93,887	93,999	93,888	94,294	94,646	95,136	95,513	95,882	95,127	95,704	95,574
Unemployed .....	5,963	7,448	7,942	7,800	7,961	7,946	7,785	7,847	7,754	7,764	7,746	8,171	7,784	7,502	7,657
Unemployment rate .....	5.8	7.1	7.6	7.4	7.6	7.5	7.4	7.4	7.3	7.3	7.3	7.6	7.3	7.0	7.2
Not in labor force .....	58,623	59,425	59,519	59,687	59,717	59,797	60,205	59,917	59,946	59,598	59,219	58,739	60,173	60,082	60,093
<b>Men, 20 years and over</b>															
Civilian noninstitutional population <sup>1</sup> .....	68,293	69,607	69,756	69,864	69,987	70,095	70,198	70,320	70,413	70,481	70,574	70,687	70,788	70,894	70,978
Civilian labor force .....	54,486	55,234	55,403	55,475	55,495	55,539	55,470	55,443	55,445	55,816	56,013	56,395	55,876	55,957	56,045
Employed .....	52,264	51,972	51,791	51,823	51,963	52,007	52,045	52,091	52,134	52,511	52,750	52,849	52,451	52,811	52,724
Agriculture .....	2,350	2,355	2,301	2,389	2,351	2,372	2,331	2,378	2,289	2,296	2,409	2,349	2,320	2,329	2,402
Nonagricultural industries .....	49,913	49,617	49,490	49,434	49,612	49,635	49,714	49,713	49,844	50,215	50,342	50,500	50,131	50,482	50,323
Unemployed .....	2,223	3,261	3,612	3,652	3,532	3,532	3,425	3,352	3,312	3,305	3,262	3,546	3,425	3,147	3,321
Unemployment rate .....	4.1	5.9	6.5	6.6	6.4	6.4	6.2	6.0	6.0	5.9	5.8	6.3	6.1	5.6	5.9
Not in labor force .....	13,807	14,373	14,353	14,389	14,492	14,556	14,728	14,877	14,968	14,665	14,561	14,292	14,912	14,937	14,933
<b>Women, 20 years and over</b>															
Civilian noninstitutional population <sup>1</sup> .....	76,860	78,295	78,473	78,598	78,723	78,842	78,959	79,071	79,175	79,271	79,377	79,498	79,617	79,739	79,848
Civilian labor force .....	38,910	40,243	40,523	40,317	40,486	40,629	40,570	40,942	41,090	41,293	41,481	41,852	41,743	41,879	41,857
Employed .....	36,698	37,696	37,890	37,804	37,754	37,909	37,820	38,191	38,410	38,567	38,760	39,014	39,011	39,082	39,155
Agriculture .....	591	575	555	592	576	574	665	621	615	606	603	583	562	575	601
Nonagricultural industries .....	36,107	37,120	37,335	37,212	37,178	37,335	37,155	37,570	37,794	37,961	38,157	38,431	38,449	38,507	38,554
Unemployed .....	2,213	2,547	2,633	2,513	2,732	2,720	2,750	2,680	2,680	2,725	2,721	2,838	2,731	2,797	2,701
Unemployment rate .....	5.7	6.3	6.5	6.2	6.7	6.7	6.8	6.7	6.5	6.6	6.6	6.8	6.5	6.7	6.5
Not in labor force .....	37,949	38,052	37,950	38,281	38,237	38,213	38,389	38,129	38,085	37,978	37,896	37,646	37,874	37,860	37,991
<b>Both sexes, 16 to 19 years</b>															
Civilian noninstitutional population <sup>1</sup> .....	16,379	16,242	16,235	16,205	16,174	16,145	16,114	16,069	16,039	16,022	15,991	15,961	15,944	15,913	15,869
Civilian labor force .....	9,512	9,242	9,019	9,188	9,186	9,117	9,027	9,158	9,146	9,068	9,228	9,159	8,558	8,628	8,700
Employed .....	7,984	7,603	7,322	7,553	7,489	7,423	7,417	7,414	7,384	7,334	7,465	7,372	6,930	7,069	7,065
Agriculture .....	356	380	354	418	392	394	398	404	376	374	451	421	383	354	368
Nonagricultural industries .....	7,628	7,223	6,968	7,135	7,097	7,029	7,019	7,010	7,008	6,960	7,014	6,951	6,547	6,715	6,697
Unemployed .....	1,528	1,640	1,697	1,635	1,697	1,694	1,610	1,744	1,762	1,734	1,763	1,787	1,628	1,559	1,635
Unemployment rate .....	16.1	17.7	18.8	17.8	18.5	18.6	17.8	19.0	19.3	19.1	19.1	19.5	19.0	18.1	18.8
Not in labor force .....	6,867	7,000	7,216	7,017	6,988	7,028	7,087	6,911	6,893	6,954	6,763	6,802	7,386	7,285	7,169
<b>White</b>															
Civilian noninstitutional population <sup>1</sup> .....	141,614	143,657	143,900	144,051	144,211	144,359	144,500	144,651	144,774	144,882	145,006	145,160	145,316	145,464	145,575
Civilian labor force .....	90,602	92,171	92,288	92,317	92,516	92,562	92,383	92,832	93,035	93,313	93,860	94,506	93,464	93,767	93,789
Employed .....	86,025	86,380	86,067	86,307	86,371	86,409	86,377	86,620	86,940	87,291	87,791	88,083	87,500	87,979	88,046
Unemployed .....	4,577	5,790	6,221	6,010	6,145	6,153	6,006	6,213	6,095	6,022	6,069	6,422	5,964	5,787	5,787
Unemployment rate .....	5.1	6.3	6.7	6.5	6.6	6.6	6.5	6.7	6.6	6.5	6.5	6.8	6.4	6.2	6.1
Not in labor force .....	51,011	51,486	51,612	51,734	51,695	51,797	52,117	51,819	51,739	51,569	51,146	50,654	51,852	51,697	51,786
<b>Black and other</b>															
Civilian noninstitutional population <sup>1</sup> .....	19,918	20,486	20,564	20,617	20,673	20,723	20,771	20,809	20,853	20,892	20,936	20,985	21,033	21,081	21,120
Civilian labor force .....	12,306	12,548	12,630	12,677	12,686	12,706	12,668	12,684	12,598	12,765	12,899	12,895	12,741	12,658	12,793
Employed .....	10,920	10,890	10,902	10,894	10,884	10,922	10,895	11,051	10,942	11,020	11,193	11,138	10,928	10,939	10,877
Unemployed .....	1,386	1,658	1,728	1,783	1,802	1,784	1,773	1,634	1,655	1,745	1,706	1,757	1,813	1,719	1,916
Unemployment rate .....	11.3	13.2	13.7	14.1	14.2	14.0	14.0	12.9	13.1	13.7	13.2	13.6	14.2	13.6	15.0
Not in labor force .....	7,612	7,938	7,934	7,940	7,987	8,017	8,103	8,125	8,255	8,127	8,037	8,090	8,292	8,423	8,327

<sup>1</sup>As in table 1, population figures are not seasonally adjusted.

### 3. Selected employment indicators, seasonally adjusted

[Numbers in thousands]

Selected categories	Annual average		1980					1981							
	1979	1980	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
<b>CHARACTERISTIC</b>															
Total employed, 16 years and over .....	96,945	97,270	97,003	97,180	97,206	97,339	97,282	97,696	97,927	98,412	98,976	99,235	98,392	98,962	98,944
Men .....	56,499	55,988	55,589	55,754	55,881	55,897	55,920	56,012	56,045	56,383	56,688	56,718	56,026	56,494	56,368
Women .....	40,446	41,283	41,414	41,426	41,325	41,442	41,362	41,684	41,882	42,029	42,288	42,517	42,366	42,467	42,577
Married men, spouse present .....	39,090	38,302	37,987	38,027	38,142	38,167	38,231	38,182	38,113	38,365	38,510	38,498	38,216	38,283	38,315
Married women, spouse present .....	22,724	23,097	23,126	23,027	22,993	23,065	23,063	23,352	23,356	23,513	23,529	23,831	23,763	23,820	23,683
<b>OCCUPATION</b>															
White-collar workers .....	49,342	50,809	51,307	51,074	51,101	51,148	51,065	51,594	51,698	51,746	51,801	51,967	51,959	51,857	52,123
Professional and technical .....	15,050	15,613	15,751	15,540	15,780	15,863	15,810	15,965	15,813	15,827	15,754	15,688	16,057	15,966	16,299
Managers and administrators, except farm .....	10,516	10,919	11,109	11,007	10,979	11,016	11,009	11,363	11,488	11,565	11,444	11,260	11,174	11,418	11,217
Salesworkers .....	6,163	6,172	6,140	6,316	6,277	6,155	6,175	6,265	6,271	6,220	6,145	6,461	6,440	6,220	6,369
Clerical workers .....	17,613	18,105	18,307	18,211	18,065	18,114	18,071	18,001	18,125	18,135	18,457	18,557	18,288	18,254	18,238
Blue-collar workers .....	32,066	30,800	30,232	30,436	30,521	30,550	30,373	30,338	30,446	30,594	31,156	31,373	30,922	31,038	31,113
Craft and kindred workers .....	12,880	12,529	12,346	12,490	12,485	12,424	12,337	12,306	12,386	12,605	12,624	12,743	12,482	12,575	12,508
Operatives, except transport .....	10,909	10,346	10,147	10,202	10,210	10,247	10,194	10,331	10,390	10,189	10,524	10,609	10,550	10,567	10,501
Transport equipment operatives .....	3,612	3,468	3,478	3,434	3,443	3,429	3,402	3,322	3,361	3,363	3,411	3,390	3,425	3,461	3,499
Nonfarm laborers .....	4,665	4,456	4,261	4,310	4,383	4,450	4,440	4,380	4,309	4,437	4,596	4,632	4,466	4,415	4,605
Service workers .....	12,834	12,958	12,928	12,943	12,891	12,888	12,982	12,946	13,070	13,279	13,255	13,213	12,930	13,284	13,002
Farmworkers .....	2,703	2,704	2,620	2,757	2,735	2,729	2,804	2,737	2,662	2,679	2,834	2,707	2,648	2,689	2,732
<b>MAJOR INDUSTRY AND CLASS OF WORKER</b>															
Agriculture:															
Wage-and-salary workers .....	1,413	1,384	1,282	1,417	1,363	1,417	1,411	1,465	1,336	1,338	1,524	1,464	1,377	1,457	1,472
Self-employed workers .....	1,580	1,628	1,640	1,688	1,640	1,612	1,655	1,615	1,610	1,615	1,648	1,644	1,657	1,568	1,629
Unpaid family workers .....	304	297	280	309	325	324	305	284	325	312	290	231	258	235	250
Nonagricultural industries:															
Wage-and-salary workers .....	86,540	86,706	86,490	86,395	86,587	86,643	86,513	87,125	87,236	87,870	88,195	88,877	87,734	88,291	88,189
Government .....	15,369	15,624	15,531	15,575	15,597	15,651	15,653	15,738	15,589	15,685	15,628	15,512	15,460	15,349	15,140
Private industries .....	71,171	71,081	70,959	70,820	70,990	70,992	70,860	71,387	71,647	72,185	72,567	73,365	72,274	72,942	73,048
Private households .....	1,240	1,166	1,196	1,125	1,144	1,148	1,110	1,197	1,176	1,235	1,241	1,164	1,146	1,211	1,236
Other industries .....	69,931	69,915	69,763	69,695	69,846	69,844	69,750	70,190	70,471	70,949	71,327	72,201	71,128	71,731	71,812
Self-employed workers .....	6,652	6,850	6,881	6,977	7,005	6,943	6,973	6,839	6,923	6,896	7,021	6,761	7,005	6,886	6,942
Unpaid family workers .....	455	404	403	416	417	405	396	422	371	354	306	338	369	389	378
<b>PERSONS AT WORK <sup>1</sup></b>															
Nonagricultural industries .....	88,133	88,325	88,195	88,246	88,488	88,694	88,468	89,499	89,441	89,583	89,202	89,870	89,625	90,837	89,823
Full-time schedules .....	72,647	72,022	71,526	71,929	72,071	72,265	72,131	72,807	72,945	72,875	72,761	73,375	73,115	74,232	72,932
Part time for economic reasons .....	3,281	3,965	4,143	4,183	4,220	4,176	4,218	4,474	4,145	4,227	4,044	4,143	3,798	4,225	4,187
Usually work full time .....	1,325	1,669	1,709	1,701	1,685	1,620	1,647	1,698	1,622	1,638	1,517	1,630	1,367	1,632	1,654
Usually work part time .....	1,956	2,296	2,434	2,482	2,535	2,556	2,571	2,776	2,523	2,589	2,527	2,513	2,431	2,593	2,533
Part time for noneconomic reasons .....	12,205	12,338	12,526	12,134	12,197	12,253	12,119	12,218	12,351	12,481	12,397	12,352	12,713	12,380	12,704

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

4. Selected unemployment indicators, seasonally adjusted

[Unemployment rates]

Selected categories	Annual average		1980					1981							
	1979	1980	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
<b>CHARACTERISTIC</b>															
Total, 16 years and over .....	5.8	7.1	7.6	7.4	7.6	7.5	7.4	7.4	7.3	7.3	7.3	7.6	7.3	7.0	7.2
Men, 20 years and over .....	4.1	5.9	6.5	6.6	6.4	6.4	6.2	6.0	6.0	5.9	5.8	6.3	6.1	5.6	5.9
Women, 20 years and over .....	5.7	6.3	6.5	6.2	6.7	6.7	6.8	6.7	6.5	6.6	6.6	6.8	6.5	6.7	6.5
Both sexes, 16 to 19 years .....	16.1	17.7	18.8	17.8	18.5	18.6	17.8	19.0	19.3	19.1	19.1	19.5	19.0	18.1	18.8
White, total .....	5.1	6.3	6.7	6.5	6.6	6.6	6.5	6.7	6.6	6.5	6.5	6.8	6.4	6.2	6.1
Men, 20 years and over .....	3.6	5.2	5.8	5.8	5.7	5.7	5.5	5.5	5.4	5.4	5.2	5.6	5.3	4.9	5.1
Women, 20 years and over .....	5.0	5.6	5.8	5.5	5.8	5.8	5.9	6.0	5.7	5.6	5.7	6.0	5.7	5.8	5.4
Both sexes, 16 to 19 years .....	13.9	14.8	16.6	15.1	16.0	16.4	15.4	16.8	17.4	16.9	17.2	18.0	16.5	16.1	15.6
Black and other, total .....	11.3	13.2	13.7	14.1	14.2	14.0	14.0	12.9	13.1	13.7	13.2	13.6	14.2	13.6	15.0
Men, 20 years and over .....	8.4	11.4	12.5	13.2	12.1	12.0	11.6	10.5	10.8	10.8	10.6	11.8	12.5	11.6	12.4
Women, 20 years and over .....	10.1	11.1	10.9	10.6	12.3	12.2	12.3	11.0	11.9	12.6	11.8	12.0	12.0	12.0	12.8
Both sexes, 16 to 19 years .....	33.5	35.8	37.6	37.8	37.4	36.6	37.5	36.5	35.4	37.3	36.1	33.6	38.6	36.4	45.7
Married men, spouse present .....	2.7	4.2	4.8	4.7	4.6	4.4	4.3	4.2	4.1	4.1	3.8	4.1	4.2	3.9	3.9
Married women, spouse present .....	5.1	5.8	6.0	5.7	6.0	5.9	5.8	6.2	5.8	6.0	5.9	5.9	5.6	5.6	5.3
Women who head families .....	8.3	9.1	9.0	9.0	10.2	9.9	10.4	10.5	9.6	9.4	9.8	10.3	10.6	11.5	9.8
Full-time workers .....	5.3	6.8	7.3	7.3	7.3	7.4	7.3	7.1	7.1	7.1	6.9	7.3	7.0	6.7	6.7
Part-time workers .....	8.7	8.7	8.7	8.7	9.1	8.6	8.2	9.2	9.1	9.0	9.0	9.7	9.2	9.3	9.7
Unemployed 15 weeks and over .....	1.2	1.7	2.0	2.2	2.2	2.2	2.3	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.1
Labor force time lost <sup>1</sup> .....	6.3	7.9	8.3	8.2	8.4	8.3	8.2	8.2	8.1	8.1	8.2	8.6	8.0	7.9	7.9
<b>OCCUPATION</b>															
White-collar workers .....	3.3	3.7	3.7	3.8	3.9	3.9	4.0	3.9	3.7	3.9	4.0	4.1	3.8	4.1	3.9
Professional and technical .....	2.4	2.5	2.4	2.5	2.6	2.5	2.6	2.8	2.6	2.7	3.2	2.9	2.8	2.8	2.4
Managers and administrators, except farm .....	1.9	2.4	2.5	2.4	2.5	2.4	2.5	2.4	2.4	2.6	2.4	2.7	2.8	2.7	2.8
Salesworkers .....	3.9	4.4	4.2	4.3	4.6	4.8	4.7	4.4	4.0	3.8	4.0	4.6	4.1	5.1	4.7
Clerical workers .....	4.6	5.3	5.4	5.4	5.6	5.6	5.8	5.7	5.3	5.9	5.6	5.6	5.3	5.7	5.6
Blue-collar workers .....	6.9	10.0	11.1	10.8	10.8	10.7	10.5	10.2	10.1	9.8	9.6	10.0	9.8	9.4	9.3
Craft and kindred workers .....	4.5	6.6	7.6	7.4	7.1	7.1	7.1	6.8	7.2	7.1	6.8	7.7	7.2	6.7	6.9
Operatives, except transport .....	8.4	12.2	13.3	13.0	13.2	13.0	12.9	12.1	11.9	11.3	11.5	11.9	11.0	11.1	11.6
Transport equipment operatives .....	5.4	8.8	9.8	10.4	10.6	10.6	8.8	9.1	8.3	9.3	8.1	8.2	8.4	6.9	7.9
Nonfarm laborers .....	10.8	14.6	16.1	15.2	15.3	15.0	14.8	15.0	14.9	14.1	13.8	13.1	14.8	14.2	12.9
Service workers .....	7.1	7.9	8.5	8.1	8.3	8.3	7.8	8.0	8.7	8.1	8.5	9.4	9.0	8.0	8.9
Farmworkers .....	3.8	4.4	5.5	4.3	4.4	4.0	4.0	5.0	4.7	5.1	3.7	5.4	6.0	4.5	5.6
<b>INDUSTRY</b>															
Nonagricultural private wage-and-salary workers <sup>2</sup> .....	5.7	7.4	8.0	7.8	7.8	7.8	7.7	7.5	7.5	7.3	7.2	7.8	7.4	7.2	7.2
Construction .....	10.2	14.2	17.3	15.9	14.6	14.8	13.8	13.3	13.2	14.7	14.4	16.3	16.6	15.0	16.7
Manufacturing .....	5.5	8.5	9.3	9.2	9.2	8.9	8.8	8.4	8.4	8.0	7.4	7.9	7.6	7.3	7.0
Durable goods .....	5.0	8.9	10.1	10.0	9.5	9.0	9.0	8.3	8.5	7.9	7.3	7.3	7.4	7.3	6.4
Nondurable goods .....	6.4	7.9	8.0	7.9	8.9	8.6	8.5	8.5	8.2	8.3	7.6	8.9	7.8	7.3	7.9
Transportation and public utilities .....	3.7	4.9	5.6	5.3	5.3	4.9	4.9	5.8	5.5	6.4	5.7	5.9	4.7	4.0	4.8
Wholesale and retail trade .....	6.5	7.4	7.7	7.7	7.8	8.2	8.3	7.6	7.6	7.3	7.3	8.4	7.5	7.9	7.8
Finance and service industries .....	4.9	5.3	5.5	5.4	5.6	5.5	5.5	5.8	6.0	5.6	5.9	5.9	5.8	5.6	5.6
Government workers .....	3.7	4.1	4.0	4.1	4.4	4.2	4.1	4.4	4.3	4.6	4.9	4.8	4.5	4.5	4.4
Agricultural wage-and-salary workers .....	9.1	10.8	13.2	10.7	11.1	10.1	10.6	11.5	12.1	11.9	9.1	11.1	13.1	10.3	12.6

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

<sup>2</sup> Includes mining, not shown separately.



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

Sex and age	Annual average		1980					1981							
	1979	1980	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Total, 16 years and over .....	5.8	7.1	7.6	7.4	7.6	7.5	7.4	7.4	7.3	7.3	7.3	7.6	7.3	7.0	7.2
16 to 19 years .....	16.1	17.7	18.8	17.8	18.5	18.6	17.8	19.0	19.3	19.1	19.1	19.5	19.0	18.1	18.8
16 to 17 years .....	18.1	20.0	22.1	20.1	20.9	21.4	19.9	21.0	21.4	21.3	22.0	21.6	22.6	19.3	20.5
18 to 19 years .....	14.6	16.1	16.5	16.0	16.7	16.5	16.4	17.5	17.9	17.7	17.2	18.2	17.3	17.7	17.4
20 to 24 years .....	9.0	11.5	12.0	12.0	12.3	12.1	11.7	11.9	11.8	11.7	12.1	12.9	12.1	11.3	11.8
25 years and over .....	3.9	5.0	5.4	5.4	5.4	5.4	5.3	5.3	5.1	5.2	5.0	5.3	5.2	5.1	5.1
25 to 54 years .....	4.1	5.4	5.9	5.9	5.9	5.9	5.8	5.7	5.5	5.5	5.4	5.6	5.6	5.4	5.4
55 years and over .....	3.0	3.3	3.4	3.4	3.4	3.3	3.5	3.5	3.6	3.7	3.3	3.3	3.4	3.5	3.5
Men, 16 years and over .....	5.1	6.9	7.6	7.6	7.4	7.4	7.2	7.2	7.1	7.0	6.9	7.4	7.1	6.6	7.0
16 to 19 years .....	15.8	18.2	19.9	18.9	19.8	19.8	19.0	20.3	20.1	19.5	19.3	20.2	19.8	18.4	19.7
16 to 17 years .....	17.9	20.4	23.7	21.2	21.8	22.3	20.5	23.0	22.1	21.1	22.7	22.7	24.4	19.8	21.5
18 to 19 years .....	14.2	16.7	17.1	16.9	18.1	17.8	17.8	18.5	18.7	18.6	17.0	18.3	18.1	17.8	18.1
20 to 24 years .....	8.6	12.5	13.6	13.5	13.8	13.2	12.5	12.8	12.7	13.0	13.2	14.2	12.8	11.3	12.7
25 years and over .....	3.3	4.7	5.3	5.4	5.1	5.1	4.9	4.9	4.8	4.7	4.6	4.8	5.0	4.7	4.8
25 to 54 years .....	3.4	5.1	5.7	6.0	5.6	5.6	5.4	5.2	5.2	5.1	4.9	5.1	5.3	4.9	5.0
55 years and over .....	2.9	3.3	3.6	3.5	3.3	3.3	3.3	3.4	3.4	3.2	3.1	3.4	3.5	3.4	3.4
Women, 16 years and over .....	6.8	7.4	7.6	7.2	7.7	7.7	7.7	7.7	7.6	7.7	7.7	7.9	7.6	7.7	7.5
16 to 19 years .....	16.4	17.2	17.6	16.6	17.0	17.2	16.5	17.5	18.4	18.7	18.9	18.7	18.2	17.7	17.8
16 to 17 years .....	18.3	19.5	20.2	18.8	19.8	20.3	19.3	18.7	20.5	21.6	21.1	20.4	20.6	18.7	19.5
18 to 19 years .....	15.0	15.6	15.9	15.1	15.1	15.1	14.8	16.4	17.0	16.5	17.4	18.2	16.4	17.5	16.8
20 to 24 years .....	9.6	10.3	10.2	10.2	10.6	10.8	10.8	10.8	10.8	10.1	10.9	11.4	11.2	11.3	10.8
25 years and over .....	4.8	5.5	5.7	5.4	5.9	5.8	5.9	5.8	5.6	5.9	5.6	5.9	5.6	5.7	5.5
25 to 54 years .....	5.2	5.9	6.2	5.9	6.4	6.2	6.3	6.3	5.9	6.2	6.0	6.4	6.0	6.1	5.9
55 years and over .....	3.2	3.2	3.1	3.3	3.4	3.4	3.9	3.6	3.9	4.5	3.7	3.3	3.3	3.7	3.6

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

[Numbers in thousands]

Reason for unemployment	1980					1981								
	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	
<b>NUMBER OF UNEMPLOYED</b>														
Lost last job .....	4,319	4,387	4,240	4,229	4,226	3,847	3,896	3,846	3,819	4,084	4,219	3,691	3,929	
On layoff .....	1,699	1,744	1,692	1,453	1,470	1,258	1,267	1,299	1,280	1,368	1,367	1,178	1,205	
Other job losers .....	2,620	2,643	2,548	2,776	2,756	2,590	2,629	2,547	2,539	2,715	2,852	2,513	2,724	
Left last job .....	890	855	870	897	813	907	884	863	854	1,009	863	898	838	
Reentered labor force .....	1,883	1,844	2,013	1,896	1,869	2,039	1,970	2,040	2,017	2,126	1,955	2,022	1,939	
Seeking first job .....	870	862	880	890	868	1,000	928	986	987	938	956	873	944	
<b>PERCENT DISTRIBUTION</b>														
Total unemployed .....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Job losers .....	54.2	55.2	53.0	53.5	54.3	49.4	50.7	49.7	49.7	50.1	52.8	49.3	51.4	
On layoff .....	21.3	21.9	21.1	18.4	18.9	16.1	16.5	16.8	16.7	16.8	17.1	15.7	15.7	
Other job losers .....	32.9	33.3	31.8	35.1	35.4	33.2	34.2	32.9	33.1	33.3	35.7	33.6	35.6	
Job leavers .....	11.2	10.8	10.9	11.3	10.5	11.6	11.5	11.2	11.1	12.4	10.8	12.0	11.0	
Reentrants .....	23.6	23.2	25.2	24.0	24.0	26.2	25.7	26.4	26.3	26.1	24.5	27.0	25.4	
New entrants .....	10.9	10.8	11.0	11.2	11.2	12.8	12.1	12.7	12.9	11.5	12.0	11.7	12.3	
<b>UNEMPLOYED AS A PERCENT OF THE CIVILIAN LABOR FORCE</b>														
Job losers .....	4.1	4.2	4.0	4.0	4.0	3.6	3.7	3.6	3.6	3.8	4.0	3.5	3.7	
Job leavers .....	.8	.8	.8	.9	.8	.9	.8	.8	.8	.9	.8	.8	.8	
Reentrants .....	1.8	1.8	1.9	1.8	1.8	1.9	1.9	1.9	1.9	2.0	1.8	1.9	1.8	
New entrants .....	.8	.8	.8	.8	.8	.9	.9	.9	.9	.9	.9	.8	.9	

### 7. Duration of unemployment, seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average		1980					1981							
	1979	1980	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Less than 5 weeks .....	2,869	3,208	3,255	3,042	3,186	3,108	3,115	3,259	3,203	3,209	3,074	3,369	3,172	3,187	3,161
5 to 14 weeks .....	1,892	2,411	2,533	2,586	2,500	2,524	2,217	2,264	2,324	2,356	2,462	2,581	2,360	2,196	2,345
15 weeks and over .....	1,202	1,829	2,150	2,295	2,292	2,329	2,378	2,358	2,250	2,192	2,105	2,168	2,315	2,100	2,194
15 to 26 weeks .....	684	1,028	1,239	1,366	1,256	1,213	1,231	1,079	992	1,013	1,001	1,022	1,205	1,068	1,059
27 weeks and over .....	518	802	911	929	1,036	1,116	1,147	1,279	1,257	1,179	1,104	1,146	1,110	1,032	1,135
Average (mean) duration, in weeks .....	10.9	11.9	12.5	13.0	13.3	13.6	13.5	14.4	14.4	14.0	13.7	13.2	14.2	13.9	14.5

## EMPLOYMENT, HOURS, AND EARNINGS DATA FROM ESTABLISHMENT SURVEYS

EMPLOYMENT, HOURS, AND EARNINGS DATA in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by 166,000 establishments representing all industries except agriculture. In most industries, the sampling probabilities are based on the size of the establishment; most large establishments are therefore in the sample. (An establishment is not necessarily a firm; it may be a branch plant, for example, or warehouse.) Self-employed persons and others not on a regular civilian payroll are outside the scope of the survey because they are excluded from establishment records. This largely accounts for the difference in employment figures between the household and establishment surveys.

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

### Definitions

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

**Production workers** in manufacturing include blue-collar worker supervisors and all nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 14-20 include production workers in manufacturing and mining; construction workers in construction; and nonsupervisory workers in transportation and public utilities, in wholesale and retail trade, in finance, insurance, and real estate, and in services industries. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

**Earnings** are the payments production or nonsupervisory workers receive during the survey period, including premium pay for overtime or late-shift work but excluding irregular bonuses and other special payments. **Real earnings** are earnings adjusted to eliminate the effects of price change. The **Hourly Earnings Index** is calculated from average hourly earnings data adjusted to exclude the effects of two types of changes that are unrelated to underlying wage-rate developments: fluctuations in overtime premiums in manufacturing (the only sector for which overtime data are available) and the effects of changes and seasonal factors in the proportion of workers in high-wage and low-wage industries. **Spendable earnings** are earnings from which estimated social security and Federal income taxes have been deducted. The

Bureau of Labor Statistics computes spendable earnings from gross weekly earnings for only two illustrative cases: (1) a worker with no dependents and (2) a married worker with three dependents.

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

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

### Notes on the data

Establishment data collected by the Bureau of Labor Statistics are periodically adjusted to comprehensive counts of employment (called "benchmarks"). The latest complete adjustment was made with the release of June 1981 data, published in the August 1981 issue of the *Review*. Consequently, data published in the *Review* prior to that issue are not necessarily comparable to current data. Complete comparable historical unadjusted and seasonally adjusted data are published in a Supplement to Employment and Earnings (unadjusted data from April 1977 through March 1981 and seasonally adjusted data from January 1974 through March 1981) and in *Employment and Earnings, United States, 1909-78*, BLS Bulletin 1312-11 (for prior periods).

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

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

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

## 8. Employment by industry, 1951-80

[Nonagricultural payroll data, in thousands]

Year	Total	Mining	Construction	Manufacturing	Transportation and public utilities	Wholesale and retail trade	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services	Government		
											Total	Federal	State and local
1951	47,819	929	2,637	16,393	4,226	9,742	2,727	7,015	1,956	5,547	6,389	2,302	4,087
1952	48,793	898	2,668	16,632	4,248	10,004	2,812	7,192	2,035	5,699	6,609	2,420	4,188
1953	50,202	856	2,659	17,549	4,290	10,247	2,854	7,393	2,111	5,835	6,645	2,305	4,340
1954	48,990	791	2,646	16,314	4,084	10,235	2,867	7,368	2,200	5,969	6,751	2,188	4,563
1955	50,641	792	2,839	16,882	4,141	10,535	2,926	7,610	2,298	6,240	6,914	2,187	4,727
1956	52,369	822	3,039	17,243	4,244	10,858	3,018	7,840	2,389	6,497	7,278	2,209	5,069
1957	52,853	826	2,962	17,174	4,241	10,886	3,028	7,858	2,438	6,708	7,616	2,217	5,399
1958	51,324	751	2,817	15,945	3,976	10,750	2,980	7,770	2,481	6,765	7,839	2,191	5,648
1959 <sup>1</sup>	53,268	732	3,004	16,675	4,011	11,127	3,082	8,045	2,549	7,087	8,083	2,233	5,850
1960	54,189	712	2,926	16,796	4,004	11,391	3,143	8,248	2,629	7,378	8,353	2,270	6,083
1961	53,999	672	2,859	16,326	3,903	11,337	3,133	8,204	2,688	7,620	8,594	2,279	6,315
1962	55,549	650	2,948	16,853	3,906	11,566	3,198	8,368	2,754	7,982	8,890	2,340	6,550
1963	56,653	635	3,010	16,995	3,903	11,778	3,248	8,530	2,830	8,277	9,225	2,358	6,868
1964	58,283	634	3,097	17,274	3,951	12,160	3,337	8,823	2,911	8,660	9,586	2,348	7,248
1965	60,765	632	3,232	18,062	4,036	12,716	3,466	9,250	2,977	9,036	10,074	2,378	7,696
1966	63,901	627	3,317	19,214	4,158	13,245	3,597	9,648	3,058	9,498	10,784	2,564	8,220
1967	65,803	613	3,248	19,447	4,268	13,606	3,689	9,917	3,185	10,045	11,391	2,719	8,672
1968	67,897	606	3,350	19,781	4,318	14,099	3,779	10,320	3,337	10,567	11,839	2,737	9,102
1969	70,384	619	3,575	20,167	4,442	14,705	3,907	10,798	3,512	11,169	12,195	2,758	9,437
1970	70,880	623	3,588	19,367	4,515	15,040	3,993	11,047	3,645	11,548	12,554	2,731	9,823
1971	71,214	609	3,704	18,623	4,476	15,352	4,001	11,351	3,772	11,797	12,881	2,696	10,185
1972	73,675	628	3,889	19,151	4,541	15,949	4,113	11,836	3,908	12,276	13,334	2,684	10,649
1973	76,790	642	4,097	20,154	4,656	16,607	4,277	12,329	4,046	12,857	13,732	2,663	11,068
1974	78,265	697	4,020	20,077	4,725	16,987	4,433	12,554	4,148	13,441	14,170	2,724	11,446
1975	76,945	752	3,525	18,323	4,542	17,060	4,415	12,645	4,165	13,892	14,686	2,748	11,937
1976	79,382	779	3,576	18,997	4,582	17,755	4,546	13,209	4,271	14,551	14,871	2,733	12,138
1977	82,471	813	3,851	19,682	4,713	18,516	4,708	13,808	4,467	15,303	15,127	2,727	12,399
1978	86,697	851	4,229	20,505	4,923	19,542	4,969	14,573	4,724	16,252	15,672	2,753	12,919
1979	89,823	958	4,463	21,040	5,136	20,192	5,204	14,989	4,975	17,112	15,947	2,773	13,147
1980	90,564	1,020	4,399	20,300	5,143	20,386	5,281	15,104	5,168	17,901	16,249	2,866	13,383

<sup>1</sup>Data include Alaska and Hawaii beginning in 1959.

## 9. Employment by State

[Nonagricultural payroll data, in thousands]

State	July 1980	June 1981	July 1981 <sup>P</sup>	State	July 1980	June 1981	July 1981 <sup>P</sup>
Alabama	1,342.5	1,346.2	1,344.5	Montana	280.2	291.4	284.2
Alaska	181.1	184.7	190.6	Nebraska	625.0	638.3	629.3
Arizona	973.7	1,003.5	995.9	Nevada	401.9	417.4	418.3
Arkansas	734.7	749.9	745.3	New Hampshire	386.9	390.0	389.5
California	9,726.3	9,992.9	9,882.4	New Jersey	3,085.8	3,140.7	3,133.1
Colorado	1,253.4	1,270.1	1,273.4	New Mexico	462.2	467.4	466.3
Connecticut	1,415.6	1,450.6	1,427.9	New York	7,223.0	7,307.3	7,264.4
Delaware	259.5	262.0	263.9	North Carolina	2,328.3	2,414.6	2,357.2
District of Columbia	632.5	616.0	629.5	North Dakota	246.5	250.1	248.3
Florida	3,497.7	3,747.1	3,689.1	Ohio	4,340.0	4,422.9	4,364.9
Georgia	2,129.0	2,161.9	2,151.2	Oklahoma	1,132.0	1,185.1	1,176.2
Hawaii	410.4	405.3	407.6	Oregon	1,027.3	1,031.7	1,010.7
Idaho	328.7	329.9	326.7	Pennsylvania	4,724.3	4,743.2	4,686.2
Illinois	4,893.6	4,879.4	4,864.4	Rhode Island	391.0	401.9	391.0
Indiana	2,101.2	2,135.5	2,108.5	South Carolina	1,165.8	1,199.4	1,184.6
Iowa	1,081.3	1,081.1	1,063.6	South Dakota	236.7	240.0	235.0
Kansas	935.9	962.0	943.4	Tennessee	1,704.7	1,727.0	1,705.3
Kentucky	1,198.9	1,191.8	1,187.4	Texas	5,872.2	6,134.1	6,150.3
Louisiana	1,572.2	1,632.7	1,638.4	Utah	543.4	554.1	548.8
Maine	418.3	428.8	428.0	Vermont	196.3	203.6	201.4
Maryland	1,703.9	1,718.6	1,690.1	Virginia	2,113.4	2,164.3	2,145.0
Massachusetts	2,626.9	2,702.4	2,532.1	Washington	1,600.6	1,616.3	1,582.0
Michigan	3,348.7	3,498.3	3,458.5	West Virginia	651.3	625.7	641.3
Minnesota	1,767.5	1,771.6	1,753.7	Wisconsin	1,930.0	1,964.3	1,952.7
Mississippi	817.4	820.0	817.1	Wyoming	209.3	213.4	213.3
Missouri	1,957.7	1,980.5	1,964.0	Virgin Islands	36.4	36.9	37.4

**10. Employment by industry division and major manufacturing group**

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual average		1980					1981							
	1979	1980	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June <sup>P</sup>	July <sup>P</sup>	Aug.
<b>TOTAL</b> .....	89,823	90,564	89,969	90,638	91,244	91,599	91,750	89,988	90,138	90,720	91,337	91,848	92,481	91,685	91,767
<b>MINING</b> .....	958	1,020	1,024	1,030	1,034	1,051	1,060	1,066	1,071	1,084	941	957	1,132	1,154	1,167
<b>CONSTRUCTION</b> .....	4,463	4,399	4,637	4,613	4,619	4,533	4,343	3,995	3,901	4,048	4,246	4,356	4,477	4,551	4,568
<b>MANUFACTURING</b> .....	21,040	20,300	19,997	20,212	20,235	20,293	20,238	20,075	20,065	20,160	20,253	20,342	20,531	20,351	20,513
Production workers .....	15,068	14,223	13,907	14,131	14,141	14,190	14,126	13,975	13,971	14,049	14,127	14,195	14,325	14,126	14,285
<b>Durable goods</b> .....	12,760	12,181	11,796	11,990	12,061	12,156	12,147	12,072	12,042	12,120	12,197	12,235	12,334	12,208	12,214
Production workers .....	9,110	8,438	8,048	8,244	8,304	8,391	8,374	8,305	8,279	8,345	8,412	8,438	8,500	8,361	8,366
Lumber and wood products .....	766.9	690.3	686.5	693.6	691.4	687.9	685.9	674.6	674.5	678.3	686.9	703.4	711.0	709.6	708.2
Furniture and fixtures .....	497.8	468.8	449.8	461.6	465.0	468.6	470.5	469.6	471.7	472.1	478.0	479.0	480.5	472.9	481.9
Stone, clay, and glass products .....	708.7	665.6	661.4	665.5	663.5	665.2	652.3	635.0	630.6	639.5	652.6	659.7	671.0	665.6	670.0
Primary metal industries .....	1,253.9	1,144.1	1,069.9	1,092.0	1,103.7	1,123.3	1,136.3	1,136.7	1,137.7	1,141.3	1,149.9	1,147.5	1,155.5	1,137.0	1,130.0
Fabricated metal products .....	1,717.7	1,609.0	1,549.9	1,576.4	1,586.6	1,597.6	1,596.4	1,580.2	1,578.1	1,585.4	1,593.7	1,596.1	1,606.8	1,584.7	1,587.6
Machinery, except electrical .....	2,484.8	2,497.0	2,426.4	2,453.4	2,461.2	2,479.6	2,496.8	2,496.9	2,498.4	2,504.3	2,506.1	2,508.6	2,531.3	2,522.2	2,522.1
Electric and electronic equipment .....	2,116.9	2,103.2	2,057.5	2,079.6	2,094.8	2,109.6	2,118.0	2,114.0	2,112.3	2,119.5	2,129.7	2,134.7	2,152.7	2,139.6	2,142.0
Transportation equipment .....	2,077.2	1,875.3	1,772.5	1,842.4	1,869.0	1,894.6	1,871.4	1,854.9	1,824.8	1,860.4	1,874.3	1,877.4	1,882.7	1,844.3	1,823.7
Instruments and related products .....	691.2	708.5	707.0	705.6	706.3	711.2	713.8	712.4	710.1	712.1	714.4	715.2	723.2	721.3	726.7
Miscellaneous manufacturing .....	444.8	419.3	415.2	419.8	419.2	417.9	405.9	398.0	403.3	406.7	411.3	413.4	419.5	411.1	421.7
<b>Nondurable goods</b> .....	8,280	8,118	8,201	8,222	8,174	8,137	8,091	8,003	8,023	8,040	8,056	8,107	8,197	8,143	8,299
Production workers .....	5,958	5,786	5,859	5,887	5,837	5,799	5,752	5,670	5,692	5,704	5,715	5,757	5,825	5,765	5,919
Food and kindred products .....	1,732.5	1,710.8	1,828.7	1,823.5	1,765.2	1,719.3	1,688.5	1,645.2	1,639.2	1,632.5	1,631.0	1,648.1	1,673.4	1,719.1	1,770.6
Tobacco manufactures .....	70.0	69.2	71.2	74.9	75.9	75.3	74.4	72.0	70.6	68.3	66.2	65.2	66.4	66.3	75.1
Textile mill products .....	885.1	852.7	842.5	843.3	845.4	847.8	846.1	841.0	841.1	840.9	841.6	844.3	851.0	837.2	847.1
Apparel and other textile products .....	1,304.3	1,265.8	1,267.6	1,274.3	1,270.5	1,262.3	1,241.1	1,222.8	1,238.7	1,250.2	1,255.2	1,265.9	1,283.0	1,230.8	1,281.4
Paper and allied products .....	706.8	694.0	689.0	688.6	690.6	691.4	691.5	687.7	687.7	688.6	690.9	693.1	701.0	695.5	700.8
Printing and publishing .....	1,235.1	1,258.3	1,251.0	1,255.1	1,259.1	1,268.2	1,278.3	1,269.0	1,273.6	1,278.2	1,280.4	1,281.8	1,286.2	1,287.2	1,287.7
Chemicals and allied products .....	1,109.3	1,107.4	1,102.8	1,100.9	1,099.5	1,100.1	1,101.2	1,100.1	1,102.9	1,106.8	1,106.2	1,110.3	1,121.1	1,115.5	1,116.0
Petroleum and coal products .....	209.8	196.6	211.8	210.2	209.7	209.5	206.8	206.5	205.7	207.0	209.5	212.9	215.4	216.0	215.9
Rubber and miscellaneous plastics products .....	781.6	730.7	702.2	716.0	725.7	730.6	733.2	731.8	734.2	737.2	743.5	749.2	759.0	747.4	755.8
Leather and leather products .....	245.7	232.6	234.4	232.7	232.1	232.5	229.4	226.9	229.5	230.4	231.7	235.9	239.1	228.0	248.1
<b>TRANSPORTATION AND PUBLIC UTILITIES</b> .....	5,136	5,143	5,134	5,159	5,166	5,147	5,150	5,063	5,076	5,095	5,120	5,148	5,195	5,171	5,184
<b>WHOLESALE AND RETAIL TRADE</b> .....	20,192	20,366	20,373	20,495	20,533	20,761	21,138	20,366	20,196	20,290	20,513	20,672	20,795	20,733	20,812
<b>WHOLESALE TRADE</b> .....	5,204	5,281	5,287	5,293	5,315	5,312	5,315	5,276	5,273	5,293	5,317	5,335	5,381	5,375	5,381
<b>RETAIL TRADE</b> .....	14,989	15,104	15,086	15,202	15,218	15,449	15,823	15,090	14,923	14,997	15,196	15,337	15,414	15,358	15,431
<b>FINANCE, INSURANCE, AND REAL ESTATE</b> .....	4,975	5,168	5,238	5,201	5,211	5,223	5,237	5,235	5,245	5,263	5,295	5,326	5,384	5,410	5,409
<b>SERVICES</b> .....	17,112	17,901	18,136	18,087	18,115	18,118	18,149	17,972	18,126	18,287	18,512	18,633	18,764	18,858	18,856
<b>GOVERNMENT</b> .....	15,947	16,249	15,430	15,841	16,331	16,473	16,435	16,216	16,458	16,493	16,457	16,414	16,203	15,457	15,258
Federal .....	2,773	2,866	2,862	2,754	2,774	2,776	2,782	2,773	2,774	2,769	2,773	2,782	2,825	2,833	2,797
State and local .....	13,174	13,383	12,568	13,087	13,557	13,697	13,653	13,443	13,684	13,724	13,684	13,632	13,378	12,624	12,461

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

[Nonagricultural payroll data, in thousands]

Industry division and group	1980					1981							
	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July <sup>P</sup>	Aug. <sup>P</sup>
<b>TOTAL</b> .....	90,219	90,461	90,668	90,844	90,949	91,091	91,258	91,347	91,458	91,564	91,615	91,966	92,027
<b>MINING</b> .....	1,008	1,023	1,032	1,052	1,069	1,083	1,091	1,098	950	957	1,110	1,131	1,149
<b>CONSTRUCTION</b> .....	4,324	4,362	4,379	4,389	4,387	4,390	4,389	4,416	4,418	4,334	4,284	4,269	4,265
<b>MANUFACTURING</b> .....	19,990	20,060	20,110	20,188	20,175	20,174	20,177	20,191	20,332	20,414	20,424	20,547	20,515
Production workers .....	13,930	13,992	14,024	14,081	14,059	14,053	14,053	14,074	14,187	14,247	14,245	14,342	14,327
<b>Durable goods</b> .....	11,907	11,968	12,013	12,090	12,077	12,084	12,074	12,099	12,207	12,254	12,278	12,339	12,330
Production workers .....	8,176	8,229	8,259	8,320	8,301	8,306	8,297	8,325	8,412	8,442	8,455	8,502	8,505
Lumber and wood products .....	671	680	679	683	687	689	691	692	702	710	699	703	693
Furniture and fixtures .....	456	462	462	463	464	464	466	467	478	484	486	489	489
Stone, clay, and glass products .....	651	656	655	658	655	654	654	651	656	658	658	657	661
Primary metal industries .....	1,077	1,092	1,108	1,126	1,137	1,137	1,140	1,141	1,145	1,142	1,144	1,142	1,138
Fabricated metal products .....	1,567	1,575	1,578	1,582	1,581	1,579	1,577	1,581	1,585	1,604	1,604	1,614	1,607
Machinery, except electrical .....	2,454	2,463	2,481	2,489	2,490	2,487	2,481	2,480	2,491	2,511	2,521	2,537	2,553
Electric and electronic equipment .....	2,074	2,078	2,087	2,096	2,103	2,110	2,110	2,117	2,134	2,143	2,148	2,163	2,161
Transportation equipment .....	1,839	1,843	1,848	1,874	1,839	1,840	1,833	1,849	1,878	1,872	1,886	1,887	1,884
Instruments and related products .....	707	709	709	712	712	713	711	712	714	716	717	722	727
Miscellaneous manufacturing .....	411	410	406	407	409	411	411	409	414	414	415	425	417
<b>Nondurable goods</b> .....	8,083	8,092	8,097	8,098	8,098	8,090	8,103	8,092	8,125	8,160	8,146	8,208	8,185
Production workers .....	5,754	5,763	5,765	5,761	5,758	5,747	5,756	5,749	5,775	5,805	5,790	5,840	5,822
Food and kindred products .....	1,720	1,712	1,711	1,705	1,701	1,696	1,705	1,691	1,697	1,703	1,673	1,695	1,666
Tobacco manufactures .....	68	68	69	71	71	71	72	72	72	71	71	71	72
Textile mill products .....	844	843	845	844	842	841	839	838	842	843	846	857	849
Apparel and other textile products .....	1,263	1,261	1,256	1,253	1,250	1,244	1,243	1,243	1,250	1,258	1,264	1,278	1,276
Paper and allied products .....	687	689	691	692	692	691	691	689	691	694	695	696	699
Printing and publishing .....	1,256	1,261	1,262	1,265	1,269	1,269	1,272	1,276	1,280	1,283	1,284	1,291	1,293
Chemicals and allied products .....	1,097	1,101	1,102	1,103	1,105	1,106	1,109	1,108	1,107	1,109	1,111	1,109	1,110
Petroleum and coal products .....	208	208	208	209	209	211	210	210	211	213	212	212	212
Rubber and miscellaneous plastics products .....	708	717	722	725	729	730	731	734	744	753	757	760	763
Leather and leather products .....	232	232	231	231	230	231	231	231	231	233	232	239	245
<b>TRANSPORTATION AND PUBLIC UTILITIES</b> .....	5,126	5,124	5,129	5,114	5,118	5,124	5,135	5,139	5,161	5,148	5,149	5,161	5,179
<b>WHOLESALE AND RETAIL TRADE</b> .....	20,413	20,450	20,461	20,464	20,470	20,529	20,600	20,635	20,636	20,714	20,717	20,794	20,863
<b>WHOLESALE TRADE</b> .....	5,274	5,290	5,296	5,296	5,300	5,305	5,313	5,316	5,333	5,346	5,349	5,359	5,370
<b>RETAIL TRADE</b> .....	15,139	15,160	15,165	15,168	15,170	15,224	15,287	15,319	15,303	15,368	15,368	15,435	15,493
<b>FINANCE, INSURANCE, AND REAL ESTATE</b> .....	5,188	5,206	5,221	5,235	5,254	5,268	5,283	5,293	5,316	5,326	5,331	5,346	5,355
<b>SERVICES</b> .....	17,981	18,043	18,087	18,160	18,240	18,300	18,343	18,371	18,475	18,540	18,560	18,653	18,688
<b>GOVERNMENT</b> .....	16,189	16,193	16,249	16,242	16,236	16,223	16,240	16,204	16,170	16,131	16,040	16,065	16,013
Federal .....	2,808	2,784	2,795	2,796	2,800	2,799	2,795	2,781	2,767	2,779	2,791	2,777	2,742
State and local .....	13,381	13,409	13,454	13,446	13,436	13,424	13,445	13,423	13,403	13,352	13,259	13,288	13,271

12. Labor turnover rates in manufacturing, 1977 to date

[Per 100 employees]

Year	Annual average	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<b>Total accessions</b>													
1977	4.0	3.7	3.7	4.0	3.8	4.6	4.9	4.3	5.3	4.6	3.9	3.1	2.4
1978	4.1	3.8	3.2	3.8	4.0	4.7	4.9	4.4	5.4	4.9	4.3	3.3	2.4
1979	4.0	4.0	3.4	3.8	3.9	4.7	4.8	4.3	5.0	4.5	4.1	3.0	2.2
1980	3.5	3.8	3.3	3.5	3.1	3.4	3.9	3.8	4.5	4.3	3.6	2.7	2.2
1981	...	3.4	3.0	3.4	3.3	3.5	4.0	P3.6	...	...	...	...	...
<b>New hires</b>													
1977	2.8	2.2	2.1	2.6	2.7	3.5	3.7	3.0	4.0	3.5	3.0	2.2	1.6
1978	3.1	2.5	2.2	2.7	2.9	3.6	3.9	3.3	4.2	3.9	3.5	2.6	1.7
1979	2.9	2.8	2.5	2.8	2.9	3.6	3.8	3.1	3.7	3.4	3.1	2.2	1.5
1980	2.1	2.4	2.2	2.3	2.0	2.1	2.4	2.1	2.5	2.6	2.2	1.6	1.2
1981	...	1.8	1.8	2.0	2.0	2.3	2.8	P2.3	...	...	...	...	...
<b>Recalls</b>													
1977	.9	1.2	1.3	1.1	.9	.8	.8	.9	1.0	.8	.6	.6	.6
1978	.7	1.0	.7	.8	.8	.8	.7	.8	.9	.7	.6	.5	.5
1979	.7	.9	.7	.7	.7	.8	.7	.9	.9	.8	.7	.6	.5
1980	1.1	1.1	.9	.9	.8	1.0	1.2	1.5	1.7	1.4	1.1	.9	.8
1981	...	1.3	1.0	1.1	1.1	1.0	.9	P1.0	...	...	...	...	...
<b>Total separations</b>													
1977	3.8	3.9	3.4	3.4	3.4	3.5	3.5	4.3	5.1	4.9	3.8	3.4	3.4
1978	3.9	3.6	3.1	3.5	3.6	3.7	3.8	4.1	5.3	4.9	4.1	3.5	3.4
1979	4.0	3.8	3.2	3.6	3.7	3.8	3.9	4.3	5.7	4.7	4.2	3.8	3.5
1980	4.0	4.1	3.5	3.7	4.7	4.8	4.4	4.2	4.8	4.1	3.8	3.0	3.1
1981	...	3.6	3.1	3.2	3.1	3.1	3.2	P3.6	...	...	...	...	...
<b>Quits</b>													
1977	1.8	1.4	1.3	1.6	1.7	1.9	1.9	1.9	3.1	2.8	1.9	1.5	1.2
1978	2.1	1.5	1.4	1.8	2.0	2.1	2.2	2.1	3.5	3.1	2.3	1.7	1.3
1979	2.0	1.8	1.6	1.9	2.0	2.1	2.1	2.0	3.3	2.7	2.1	1.6	1.1
1980	1.5	1.6	1.5	1.6	1.5	1.5	1.4	1.4	2.2	1.9	1.4	1.1	.9
1981	...	1.2	1.1	1.2	1.3	1.3	1.4	P1.5	...	...	...	...	...
<b>Layoffs</b>													
1977	1.1	1.7	1.4	1.0	.9	.8	.8	1.5	1.0	1.1	1.1	1.1	1.5
1978	.9	1.2	.9	.9	.8	.7	.7	1.1	.8	.8	.9	1.0	1.4
1979	1.1	1.1	.8	.8	.9	.7	.9	1.4	1.3	1.1	1.2	1.5	1.7
1980	1.7	1.6	1.2	1.3	2.3	2.5	2.2	2.0	1.7	1.4	1.5	1.3	1.6
1981	...	1.6	1.2	1.2	1.0	1.0	1.1	P1.3	...	...	...	...	...

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

[Per 100 employees]

Major industry group	Accession rates									Separation rates								
	Total			New hires			Recalls			Total			Quits			Layoffs		
	July 1980	June 1981	July 1981 P	July 1980	June 1981	July 1981 P	July 1980	June 1981	July 1981 P	July 1980	June 1981	July 1981 P	July 1980	June 1981	July 1981 P	July 1980	June 1981	July 1981 P
<b>MANUFACTURING</b>	3.8	4.0	3.6	2.1	2.8	2.3	1.5	0.9	1.0	4.2	3.2	3.6	1.4	1.4	1.5	2.0	1.1	1.3
Seasonally adjusted	3.5	3.4	3.3	2.0	2.2	2.2	1.3	1.0	.9	3.8	3.4	3.2	1.4	1.4	1.5	1.6	1.3	1.0
<b>Durable goods</b>	3.2	3.6	2.9	1.6	2.4	1.9	1.3	.8	.8	4.0	3.0	3.2	1.1	1.1	1.2	2.1	1.0	1.2
Lumber and wood products	5.9	5.2	4.7	3.2	3.7	3.2	2.5	1.3	1.3	5.3	4.8	4.7	2.2	2.3	2.5	2.1	1.5	1.4
Furniture and fixtures	3.8	4.0	4.6	2.2	3.1	3.4	1.5	.6	1.0	5.6	3.9	4.5	1.8	1.8	2.3	2.8	1.2	1.3
Stone, clay, and glass products	4.0	4.2	3.5	2.0	2.8	2.2	1.8	1.1	1.1	4.0	3.2	3.9	1.2	1.2	1.4	1.9	1.1	1.6
Primary metal industries	3.5	2.8	2.6	.7	1.5	1.0	2.6	1.1	1.3	5.3	2.5	3.2	.6	.6	.6	3.8	1.2	1.6
Fabricated metal products	4.0	4.0	3.4	1.9	2.7	2.1	1.9	1.0	1.1	4.4	3.4	3.6	1.3	1.3	1.3	2.3	1.3	1.5
Machinery, except electrical	2.2	3.1	2.3	1.3	2.3	1.6	.6	.6	.5	3.1	2.4	2.6	.9	.9	1.0	1.6	.8	.9
Electric and electronic equipment	2.5	3.4	2.7	1.4	2.4	1.8	.8	.6	.5	3.3	2.7	2.8	1.0	1.1	1.1	1.5	.7	.9
Transportation equipment	3.0	3.1	...	1.4	1.6	...	1.2	.9	...	4.1	2.9	...	.8	1.0	...	2.6	1.1	...
Instruments and related products	2.3	3.8	2.2	1.8	3.2	1.7	.4	.3	.3	2.4	2.1	2.2	1.1	1.1	1.1	.8	.4	.5
Miscellaneous manufacturing	5.1	4.9	4.5	2.8	3.5	3.1	2.1	1.2	1.3	5.6	4.3	4.8	1.8	1.7	1.9	2.7	1.6	2.1
<b>Nondurable goods</b>	4.7	4.6	4.5	2.9	3.3	3.0	1.6	1.1	1.3	4.6	3.6	4.2	1.8	1.7	1.9	2.0	1.1	1.5
Food and kindred products	8.4	7.3	7.9	5.3	4.6	4.6	3.0	2.5	3.1	6.0	5.3	5.6	2.4	2.2	2.2	2.7	2.3	2.6
Tobacco manufacturers	4.9	3.9	...	1.1	1.6	...	2.0	1.5	...	2.2	2.6	...	.5	.4	...	.9	1.3	...
Textile mill products	4.0	3.5	3.9	2.5	2.9	3.0	1.3	.4	.6	5.1	3.3	4.3	2.1	1.9	2.4	2.0	.5	1.0
Apparel and other products	5.8	5.4	5.7	3.4	3.8	3.9	2.2	1.4	1.6	6.6	5.0	6.3	2.7	2.6	3.0	2.9	1.6	2.3
Paper and allied products	2.9	3.5	2.5	1.4	2.4	1.6	1.4	.7	.7	3.2	2.1	2.6	.9	.8	1.0	1.5	.7	.9
Printing and publishing	2.9	3.6	3.0	2.3	2.9	2.5	.5	.5	.4	3.0	2.9	2.9	1.6	1.7	1.7	.8	.7	.6
Chemicals and allied products	1.5	2.5	1.7	1.1	2.1	1.2	.3	.3	.3	1.9	1.7	1.8	.6	.7	.7	.8	.4	.6
Petroleum and coal products	2.5	3.0	2.1	2.0	2.5	1.8	.4	.4	.3	1.9	1.7	2.4	.7	.6	.6	.5	.5	.9
Rubber and miscellaneous plastics products	4.6	4.6	3.9	2.1	3.3	2.8	2.2	1.0	.8	5.4	3.5	4.0	1.6	1.7	1.8	2.7	.9	1.1
Leather and leather products	7.7	6.4	7.2	4.4	5.1	4.7	3.0	1.1	2.2	8.8	5.7	7.3	3.3	3.0	3.3	4.6	1.7	3.1

**14. Hours and earnings, by industry division, 1950-80**

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

Year	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings
	Total private			Mining			Construction			Manufacturing		
1950	\$53.13	39.8	\$1.335	\$67.16	37.9	\$1.772	\$69.68	37.4	\$1.863	\$58.32	40.5	\$1.440
1951	57.86	39.9	1.45	74.11	38.4	1.93	76.96	38.1	2.02	63.34	40.6	1.56
1952	60.65	39.9	1.52	77.59	38.6	2.01	82.86	38.9	2.13	66.75	40.7	1.64
1953	63.76	39.6	1.61	83.03	38.8	2.14	86.41	37.9	2.28	70.47	40.5	1.74
1954	64.52	39.1	1.65	82.60	38.6	2.14	88.91	37.2	2.39	70.49	39.6	1.78
1955	67.72	39.6	1.71	89.54	40.7	2.20	90.90	37.1	2.45	75.30	40.7	1.85
1956	70.74	39.3	1.80	95.06	40.8	2.33	96.38	37.5	2.57	78.78	40.4	1.95
1957	73.33	38.8	1.89	98.25	40.1	2.45	100.27	37.0	2.71	81.19	39.8	2.04
1958	75.08	38.5	1.95	96.08	38.9	2.47	103.78	36.8	2.82	82.32	39.2	2.10
1959 <sup>1</sup>	78.78	39.0	2.02	103.68	40.5	2.56	108.41	37.0	2.93	88.26	40.3	2.19
1960	80.67	38.6	2.09	105.04	40.4	2.60	112.67	36.7	3.07	89.72	39.7	2.26
1961	82.60	38.6	2.14	106.92	40.5	2.64	118.08	36.9	3.20	92.34	39.8	2.32
1962	85.91	38.7	2.22	110.70	41.0	2.70	122.47	37.0	3.31	96.56	40.4	2.39
1963	88.46	38.8	2.28	114.40	41.6	2.75	127.19	37.3	3.41	99.23	40.5	2.45
1964	91.33	38.7	2.36	117.74	41.9	2.81	132.06	37.2	3.55	102.97	40.7	2.53
1965	95.45	38.8	2.46	123.52	42.3	2.92	138.38	37.4	3.70	107.53	41.2	2.61
1966	98.82	38.6	2.56	130.24	42.7	3.05	146.26	37.6	3.89	112.19	41.4	2.71
1967	101.84	38.0	2.68	135.89	42.6	3.19	154.95	37.7	4.11	114.49	40.6	2.82
1968	107.73	37.8	2.85	142.71	42.6	3.35	164.49	37.3	4.41	122.51	40.7	3.01
1969	114.61	37.7	3.04	154.80	43.0	3.60	181.54	37.9	4.79	129.51	40.6	3.19
1970	119.83	37.1	3.23	164.40	42.7	3.85	195.45	37.3	5.24	133.33	39.8	3.35
1971	127.31	36.9	3.45	172.14	42.4	4.06	211.67	37.2	5.69	142.44	39.9	3.57
1972	136.90	37.0	3.70	189.14	42.6	4.44	221.19	36.5	6.06	154.71	40.5	3.82
1973	145.39	36.9	3.94	201.40	42.4	4.75	235.89	36.8	6.41	166.46	40.7	4.09
1974	154.76	36.5	4.24	219.14	41.9	5.23	249.25	36.6	6.81	176.80	40.0	4.42
1975	163.53	36.1	4.53	249.31	41.9	5.95	266.08	36.4	7.31	190.79	39.5	4.83
1976	175.45	36.1	4.86	273.90	42.4	6.46	283.73	36.8	7.71	209.32	40.1	5.22
1977	189.00	36.0	5.25	301.20	43.4	6.94	295.65	36.5	8.10	228.90	40.3	5.68
1978	203.70	35.8	5.69	332.88	43.4	7.67	318.69	36.8	8.66	249.27	40.4	6.17
1979	219.91	35.7	6.16	365.07	43.0	8.49	342.99	37.0	9.27	269.34	40.2	6.70
1980	235.10	35.3	6.66	396.14	43.2	9.17	367.04	37.0	9.92	288.62	39.7	7.27
	Transportation and public utilities			Wholesale and retail trade			Finance, insurance, and real estate			Services		
1950				\$44.55	40.5	\$1.100	\$50.52	37.7	\$1.340			
1951				47.79	40.5	1.18	54.67	37.7	1.45			
1952				49.20	40.0	1.23	57.08	37.8	1.51			
1953				51.35	39.5	1.30	59.57	37.7	1.58			
1954				53.33	39.5	1.35	62.04	37.6	1.65			
1955				55.16	39.4	1.40	63.92	37.6	1.70			
1956				57.48	39.1	1.47	65.68	36.9	1.78			
1957				59.60	38.7	1.54	67.53	36.7	1.84			
1958				61.76	38.6	1.60	70.12	37.1	1.89			
1959 <sup>1</sup>				64.41	38.8	1.66	72.74	37.3	1.95			
1960				66.01	38.6	1.71	75.14	37.2	2.02			
1961				67.41	38.3	1.76	77.12	36.9	2.09			
1962				69.91	38.2	1.83	80.94	37.3	2.17			
1963				72.01	38.1	1.89	84.38	37.5	2.25			
1964	\$118.78	41.1	\$2.89	74.66	37.9	1.97	85.79	37.3	2.30	\$70.03	36.1	\$1.94
1965	125.14	41.3	3.03	76.91	37.7	2.04	88.91	37.2	2.39	73.60	35.9	2.05
1966	128.13	41.2	3.11	79.39	37.1	2.14	92.13	37.3	2.47	77.04	35.5	2.17
1967	130.82	40.5	3.23	82.35	36.6	2.25	95.72	37.1	2.58	80.38	35.1	2.29
1968	138.85	40.6	3.42	87.00	36.1	2.41	101.75	37.0	2.75	83.97	34.7	2.42
1969	147.74	40.7	3.63	91.39	35.7	2.56	108.70	37.1	2.93	90.57	34.7	2.61
1970	155.93	40.5	3.85	96.02	35.3	2.72	112.67	36.7	3.07	96.66	34.4	2.81
1971	168.82	40.1	4.21	101.09	35.1	2.88	117.85	36.6	3.22	103.06	33.9	3.04
1972	187.86	40.4	4.65	106.45	34.9	3.05	122.98	36.6	3.36	110.85	33.9	3.27
1973	203.31	40.5	5.02	111.76	34.6	3.23	129.20	36.6	3.53	117.29	33.8	3.47
1974	217.48	40.2	5.41	119.02	34.2	3.48	137.61	36.5	3.77	126.00	33.6	3.75
1975	233.44	39.7	5.88	126.45	33.9	3.73	148.19	36.5	4.06	134.67	33.5	4.02
1976	256.71	39.8	6.45	133.79	33.7	3.97	155.43	36.4	4.27	143.52	33.3	4.31
1977	278.90	39.9	6.99	142.52	33.3	4.28	165.26	36.4	4.54	153.45	33.0	4.65
1978	302.80	40.0	7.57	153.64	32.9	4.67	178.00	36.4	4.89	163.67	32.8	4.99
1979	325.58	39.9	8.16	164.96	32.6	5.06	190.77	36.2	5.27	175.27	32.7	5.36
1980	351.25	39.6	8.87	176.46	32.2	5.48	209.24	36.2	5.78	190.71	32.6	5.85

<sup>1</sup> Data include Alaska and Hawaii beginning in 1959.

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

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

Industry division and group	Annual average		1980					1981							
	1979	1980	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July <sup>P</sup>	Aug. <sup>P</sup>
<b>TOTAL PRIVATE</b> .....	35.7	35.3	35.5	35.3	35.3	35.3	35.6	35.1	35.0	35.2	35.2	35.2	35.4	35.5	35.6
<b>MINING</b> .....	43.0	43.2	43.2	43.5	43.6	43.6	44.1	43.6	42.8	42.3	43.6	43.8	42.1	43.1	43.4
<b>CONSTRUCTION</b> .....	37.0	37.0	37.3	38.0	37.9	36.8	37.2	36.4	35.0	37.2	36.9	36.9	37.2	37.7	37.4
<b>MANUFACTURING</b> .....	40.2	39.7	39.4	39.8	39.8	40.2	40.8	39.9	39.5	39.9	39.7	40.1	40.2	39.6	39.9
Overtime hours .....	3.3	2.8	2.7	3.0	2.9	3.1	3.3	2.9	2.8	2.8	2.6	2.9	3.0	2.8	3.0
<b>Durable goods</b> .....	40.8	40.1	39.7	40.2	40.3	40.7	41.5	40.4	39.9	40.5	40.3	40.6	40.6	40.0	40.2
Overtime hours .....	3.5	2.8	2.6	2.9	2.9	3.1	3.4	2.9	2.8	2.9	2.7	3.0	3.0	2.8	3.0
Lumber and wood products .....	39.4	38.6	39.2	39.3	39.2	39.2	39.7	38.8	38.5	39.0	39.1	39.6	39.5	38.6	39.0
Furniture and fixtures .....	38.7	38.1	37.6	38.3	38.5	38.4	39.6	38.1	38.3	38.8	38.2	38.5	38.9	37.8	38.2
Stone, clay, and glass products .....	41.5	40.8	40.7	41.1	41.3	41.4	41.6	40.3	39.6	40.6	40.9	41.1	41.2	40.9	41.1
Primary metal industries .....	41.4	40.1	39.0	39.9	39.9	40.8	41.6	41.1	40.7	41.1	41.2	40.9	40.9	40.3	40.3
Fabricated metal products .....	40.7	40.4	40.0	40.5	40.5	40.9	41.6	40.4	40.0	40.6	40.2	40.7	40.8	39.9	40.3
Machinery except electrical .....	41.8	41.0	40.3	41.0	40.7	41.3	42.2	41.2	40.8	41.2	40.8	41.2	41.1	40.5	40.6
Electric and electronic equipment .....	40.3	39.8	39.2	39.7	39.8	40.4	41.0	40.1	39.6	40.2	39.8	40.1	40.2	39.8	40.0
Transportation equipment .....	41.1	40.6	40.0	40.7	41.1	41.7	43.1	40.9	40.1	41.1	41.0	41.6	41.3	40.8	41.2
Instruments and related products .....	40.8	40.5	39.9	40.1	40.3	40.9	41.2	40.6	40.5	40.6	39.9	40.3	40.4	40.0	40.2
Miscellaneous manufacturing .....	38.8	38.7	38.5	39.1	38.9	39.1	39.5	38.6	38.4	38.9	38.6	38.9	39.0	38.5	38.8
<b>Nondurable goods</b> .....	39.3	39.0	39.0	39.1	39.1	39.4	39.9	39.2	38.9	39.1	38.9	39.4	39.5	39.1	39.4
Overtime hours .....	3.1	2.8	2.9	3.1	2.9	3.0	3.1	2.9	2.8	2.7	2.6	2.9	2.9	2.8	3.1
Food and kindred products .....	39.9	39.7	40.4	40.3	39.7	40.1	40.3	40.0	39.3	39.2	39.3	39.8	39.8	39.6	39.7
Tobacco manufactures .....	38.0	38.1	36.9	38.2	40.0	40.1	38.1	38.6	38.5	37.2	37.2	38.6	38.5	38.1	39.8
Textile mill products .....	40.4	40.1	39.2	39.8	39.9	40.3	40.9	39.9	39.9	40.1	39.4	40.3	40.4	39.6	40.0
Apparel and other textile products .....	35.3	35.4	35.4	35.2	35.5	35.4	35.9	35.2	35.3	35.8	35.2	36.0	36.4	36.0	36.5
Paper and allied products .....	42.6	42.3	41.8	42.3	42.2	42.8	43.7	42.7	42.2	42.4	42.3	42.5	42.7	42.5	42.2
Printing and publishing .....	37.5	37.1	37.2	37.2	37.2	37.2	38.1	37.1	36.9	37.1	37.0	37.3	37.2	37.2	37.5
Chemicals and allied products .....	41.9	41.5	40.9	41.3	41.5	42.0	42.1	41.6	41.5	41.6	41.6	41.6	41.6	41.4	41.1
Petroleum and coal products .....	43.8	41.8	42.2	43.4	43.7	43.6	43.3	42.6	42.5	42.6	43.9	43.6	43.5	43.7	42.9
Rubber and miscellaneous plastics products .....	40.5	40.1	40.0	40.3	40.7	41.1	41.6	41.0	40.2	40.7	40.4	40.9	40.9	40.0	40.8
Leather and leather products .....	36.5	36.7	36.6	36.3	36.6	36.3	36.9	36.5	36.7	36.8	36.3	37.4	38.1	36.5	38.5
<b>TRANSPORTATION AND PUBLIC UTILITIES</b> .....	39.9	39.6	39.7	39.7	39.8	39.7	40.0	39.4	39.5	39.4	39.3	39.3	39.8	39.8	39.8
<b>WHOLESALE AND RETAIL TRADE</b> .....	32.6	32.2	32.7	32.2	32.1	32.1	32.5	31.7	31.7	31.9	32.1	32.0	32.3	32.7	32.7
<b>WHOLESALE TRADE</b> .....	38.8	38.5	38.4	38.5	38.7	38.5	38.9	38.5	38.3	38.5	38.5	38.5	38.6	38.7	38.6
<b>RETAIL TRADE</b> .....	30.6	30.2	30.9	30.2	30.0	30.0	30.5	29.5	29.6	29.8	30.0	29.9	30.4	30.8	30.9
<b>FINANCE, INSURANCE, AND REAL ESTATE</b> .....	36.2	36.2	36.3	36.1	36.3	36.3	36.3	36.4	36.4	36.4	36.3	36.1	36.1	36.3	36.4
<b>SERVICES</b> .....	32.7	32.6	33.1	32.6	32.6	32.6	32.6	32.5	32.6	32.6	32.6	32.5	32.7	33.0	33.0

r = revised



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

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

Industry division and group	1980					1981							
	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July <sup>P</sup>	Aug. <sup>P</sup>
<b>TOTAL PRIVATE</b> .....	35.2	35.3	35.3	35.3	35.3	35.3	35.2	35.3	35.4	35.3	35.2	35.2	35.3
<b>MANUFACTURING</b> .....	39.5	39.6	39.7	39.8	39.9	40.1	39.8	39.9	40.2	40.3	40.1	40.0	40.1
Overtime hours .....	2.7	2.7	2.8	3.0	3.0	3.0	2.8	2.8	2.9	3.2	3.0	3.0	3.1
<b>Durable goods</b> .....	40.0	40.1	40.1	40.4	40.4	40.6	40.1	40.4	40.8	40.8	40.5	40.5	40.6
Overtime hours .....	2.7	2.7	2.8	3.0	3.1	3.0	2.8	2.8	3.0	3.2	3.0	3.0	3.1
Lumber and wood products .....	38.8	38.7	38.6	39.1	39.3	39.8	39.1	39.1	39.6	39.8	39.0	38.7	38.6
Furniture and fixtures .....	37.6	38.1	38.0	38.0	38.4	38.5	38.6	38.6	38.8	39.0	38.9	38.5	38.2
Stone, clay, and glass products .....	40.5	40.8	40.8	40.9	41.0	41.3	40.6	40.7	41.2	41.0	40.8	41.0	40.9
Primary metal industries .....	39.4	39.7	40.1	40.8	41.2	41.1	40.7	41.0	41.2	41.0	40.8	40.5	40.7
Fabricated metal products .....	40.2	40.4	40.4	40.5	40.4	40.5	40.2	40.4	40.9	40.9	40.7	40.5	40.5
Machinery, except electrical .....	40.8	40.9	40.8	41.0	40.9	41.1	40.8	40.9	41.3	41.4	41.1	41.2	41.1
Electric and electronic equipment .....	39.6	39.6	39.8	39.9	40.0	40.1	39.6	40.0	40.2	40.4	40.2	40.6	40.4
Transportation equipment .....	40.8	40.7	40.7	41.2	41.0	41.3	40.5	40.9	42.0	41.8	41.4	41.3	42.0
Instruments and related products .....	40.3	40.2	40.3	40.4	40.4	40.6	40.5	40.5	40.1	40.4	40.4	40.7	40.6
Miscellaneous manufacturing .....	38.6	38.8	38.6	38.6	38.9	38.8	38.6	38.7	38.9	39.2	39.1	39.2	38.9
<b>Nondurable goods</b> .....	38.9	38.9	39.0	39.1	39.2	39.5	39.2	39.2	39.3	39.6	39.4	39.3	39.3
Overtime hours .....	2.8	2.8	2.8	2.9	2.9	3.0	2.9	2.8	2.9	3.1	3.0	2.9	3.0
Food and kindred products .....	39.8	39.7	39.6	39.8	39.7	40.3	39.9	39.7	40.1	40.0	39.8	39.4	39.2
Tobacco manufactures .....	36.9	38.2	40.0	40.1	38.1	38.6	38.5	37.2	37.2	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Textile mill products .....	39.5	39.8	39.8	39.9	40.1	40.0	40.0	39.9	39.8	40.5	40.2	40.3	40.3
Apparel and other textile products .....	35.2	35.2	35.4	35.2	35.5	36.1	35.6	35.7	35.5	36.0	36.1	35.9	36.3
Paper and allied products .....	42.0	42.2	42.2	42.4	42.8	42.6	42.4	42.4	42.6	42.8	42.7	42.8	42.4
Printing and publishing .....	37.0	36.9	37.1	36.8	37.4	37.5	37.3	37.1	37.3	37.6	37.4	37.3	37.3
Chemicals and allied products .....	41.2	41.4	41.5	41.6	41.6	41.6	41.6	41.5	41.5	41.7	41.7	41.7	41.4
Petroleum and coal products .....	42.1	42.4	42.8	42.9	43.2	43.8	43.8	43.5	44.1	43.8	43.4	43.1	42.7
Rubber and miscellaneous plastics products .....	40.2	40.2	40.5	40.8	40.8	40.9	40.3	40.5	40.7	41.3	41.0	40.5	41.0
Leather and leather products .....	36.6	36.4	36.7	36.3	36.6	36.8	37.0	37.1	36.6	37.1	37.1	36.4	38.5
<b>WHOLESALE AND RETAIL TRADE</b> .....	32.1	32.1	32.1	32.2	32.1	32.2	32.2	32.2	32.3	32.1	32.1	32.1	32.1
<b>WHOLESALE TRADE</b> .....	38.3	38.5	38.5	38.5	38.6	38.8	38.6	38.6	38.6	38.5	38.5	38.6	38.5
<b>RETAIL TRADE</b> .....	30.1	30.1	30.1	30.2	30.0	30.1	30.2	30.2	30.3	30.1	30.1	30.0	30.1
<b>SERVICES</b> .....	32.6	32.6	32.6	32.7	32.7	32.7	32.8	32.8	32.8	32.7	32.5	32.5	32.5

NOTE: The industry divisions of mining; construction; transportation and public utilities; and finance, insurance, and real estate are no longer published seasonally adjusted. This is because the

seasonal component is small relative to the trend-cycle, or irregular components, or both and consequently cannot be precisely separated.

**17. Hourly earnings, by industry division and major manufacturing group**

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

Industry division and group	Annual average		1980						1981							
	1979	1980	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July <sup>P</sup>	Aug. <sup>P</sup>	
<b>TOTAL PRIVATE</b> .....	\$6.16	\$6.66	\$6.67	\$6.79	\$6.85	\$6.92	\$6.94	\$7.03	\$7.06	\$7.10	\$7.13	\$7.17	\$7.20	\$7.24	\$7.30	
<b>MINING</b> .....	8.49	9.17	9.16	9.31	9.36	9.49	9.57	9.77	9.86	9.85	9.70	9.68	9.94	10.07	10.17	
<b>CONSTRUCTION</b> .....	9.27	9.92	10.04	10.18	10.24	10.24	10.33	10.42	10.41	10.44	10.43	10.53	10.60	10.73	10.83	
<b>MANUFACTURING</b> .....	6.70	7.27	7.30	7.42	7.49	7.60	7.70	7.73	7.75	7.80	7.88	7.92	7.97	8.02	8.03	
<b>Durable goods</b> .....	7.13	7.75	7.77	7.92	8.01	8.11	8.23	8.23	8.26	8.32	8.40	8.45	8.52	8.55	8.58	
Lumber and wood products .....	6.07	6.53	6.72	6.76	6.73	6.76	6.74	6.79	6.81	6.79	6.83	6.92	7.10	7.14		
Furniture and fixtures .....	5.06	5.49	5.55	5.59	5.60	5.63	5.70	5.71	5.74	5.76	5.78	5.83	5.89	5.92	7.13	
Stone, clay, and glass products .....	6.85	7.50	7.63	7.69	7.74	7.81	7.83	7.87	7.89	7.94	8.11	8.20	8.31	8.38	6.00	
Primary metal industries .....	8.98	9.77	9.85	9.96	10.10	10.29	10.36	10.36	10.56	10.52	10.76	10.68	10.76	10.77	8.43	
Fabricated metal products .....	6.85	7.45	7.49	7.63	7.69	7.77	7.88	7.89	7.91	8.01	8.05	8.17	8.23	8.20	10.89	
Machinery, except electrical .....	7.32	8.00	8.02	8.21	8.30	8.38	8.50	8.53	8.56	8.62	8.67	8.75	8.81	8.85	8.23	
Electric and electronic equipment .....	6.32	6.95	7.01	7.12	7.18	7.27	7.38	7.41	7.43	7.47	7.51	7.55	7.60	7.71	8.85	
Transportation equipment .....	8.53	9.32	9.33	9.54	9.75	9.87	10.09	9.96	9.93	10.08	10.14	10.25	10.36	10.35	7.83	
Instruments and related products .....	6.17	6.80	6.86	6.91	6.94	7.01	7.13	7.19	7.20	7.23	7.25	7.31	7.34	7.45	10.83	
Miscellaneous manufacturing .....	5.03	5.47	5.48	5.53	5.56	5.62	5.73	5.82	5.83	5.85	5.91	5.93	5.93	5.97	7.49	
.....															5.98	
<b>Nondurable goods</b> .....	6.01	6.56	6.65	6.71	6.74	6.82	6.89	6.97	6.98	7.01	7.08	7.11	7.14	7.23		
Food and kindred products .....	6.27	6.86	6.90	6.94	6.95	7.09	7.13	7.21	7.24	7.29	7.37	7.43	7.43	7.46	7.24	
Tobacco manufactures .....	6.67	7.73	7.82	7.53	7.69	7.86	8.10	8.50	8.56	8.61	8.90	9.03	9.33	9.45		
Textile mill products .....	4.66	5.08	5.20	5.25	5.27	5.31	5.34	5.35	5.35	5.36	5.36	5.40	5.42	5.51	7.51	
Apparel and other textile products .....	4.23	4.57	4.60	4.69	4.73	4.75	4.81	4.89	4.87	4.94	4.96	4.98	5.00	4.95	8.80	
Paper and allied products .....	7.13	7.84	7.99	8.06	8.09	8.18	8.27	8.27	8.28	8.30	8.37	8.42	8.55	8.73	5.66	
.....															5.01	
Printing and publishing .....	6.94	7.53	7.62	7.73	7.74	7.79	7.88	7.92	7.96	8.02	8.04	8.10	8.13	8.21	8.70	
Chemicals and allied products .....	7.60	8.30	8.40	8.47	8.53	8.60	8.69	8.74	8.80	8.84	8.94	8.99	9.07	9.14		
Petroleum and coal products .....	9.36	10.09	10.21	10.33	10.38	10.52	10.38	11.06	11.33	11.23	11.40	11.28	11.29	11.43	8.22	
Rubber and miscellaneous plastics products .....	5.97	6.56	6.65	6.72	6.79	6.88	6.97	7.06	7.04	7.07	7.15	7.22	7.23	7.28	9.22	
Leather and leather products .....	4.22	4.58	4.60	4.62	4.65	4.69	4.74	4.86	4.88	4.90	4.93	4.95	4.98	4.96	11.34	
.....															7.34	
<b>TRANSPORTATION AND PUBLIC UTILITIES</b> .....	8.16	8.87	8.94	9.02	9.19	9.27	9.30	9.33	9.45	9.42	9.54	9.59	9.63	9.73	5.00	
<b>WHOLESALE AND RETAIL TRADE</b> .....	5.06	5.48	5.49	5.56	5.59	5.64	5.62	5.80	5.84	5.85	5.87	5.89	5.89	5.91	9.95	
<b>WHOLESALE TRADE</b> .....	6.39	6.96	6.99	7.07	7.09	7.19	7.23	7.32	7.38	7.42	7.47	7.51	7.51	7.57	5.92	
<b>RETAIL TRADE</b> .....	4.53	4.88	4.89	4.95	4.98	5.02	4.99	5.18	5.20	5.20	5.22	5.23	5.23	5.24	7.63	
<b>FINANCE, INSURANCE, AND REAL ESTATE</b> .....	5.27	5.78	5.83	5.87	5.91	6.02	6.00	6.10	6.21	6.19	6.20	6.24	6.24	6.28	5.24	
<b>SERVICES</b> .....	5.36	5.85	5.81	5.93	6.00	6.09	6.12	6.21	6.27	6.29	6.30	6.33	6.33	6.33	6.36	
.....															6.40	

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

[Seasonally adjusted data: 1977=100]

Industry	1980					1981								July 1981 to Aug. 1981	Aug. 1980 to Aug. 1981
	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July <sup>P</sup>	Aug. <sup>P</sup>		
<b>TOTAL PRIVATE (in current dollars)</b> ..	128.7	129.4	130.6	132.1	132.6	133.8	135.0	135.8	136.7	137.7	138.4	139.0	140.6	1.1	9.2
Mining <sup>1</sup> .....	135.0	136.7	137.5	139.2	139.8	142.1	143.2	144.0	145.7	145.6	147.2	148.5	149.4	.6	10.7
Construction .....	122.9	123.1	124.4	125.2	126.2	127.6	128.0	128.6	129.0	129.4	130.4	131.7	132.0	.3	7.5
Manufacturing .....	131.3	132.3	133.5	134.6	135.4	136.5	137.5	138.5	139.9	140.7	141.6	142.5	143.6	.8	9.4
Transportation and public utilities ..	128.1	128.1	130.9	132.6	132.8	133.7	135.4	136.1	137.3	138.9	139.8	140.1	142.5	1.8	11.3
Wholesale and retail trade .....	129.3	129.9	130.8	132.3	132.4	133.7	135.0	135.9	136.4	137.4	137.8	138.3	139.5	.9	7.9
Finance, insurance, and real estate ..	128.7	129.1	129.9	132.4	131.9	133.2	135.0	136.0	135.4	136.8	137.1	137.6	140.1	1.8	8.9
Services .....	126.6	127.3	128.5	130.5	131.1	132.0	133.2	134.0	134.8	136.0	136.6	136.9	139.4	1.9	10.1
<b>TOTAL PRIVATE (in constant dollars)</b> ..	93.9	93.9	93.2	93.3	92.7	92.8	92.7	92.8	93.0	93.1	92.9	92.2	.....	.....	.....

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

### 19. Weekly earnings, by industry division and major manufacturing group

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

Industry division and group	Annual average		1980					1981							
	1979	1980	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July <sup>P</sup>	Aug. <sup>P</sup>
<b>TOTAL PRIVATE</b> .....	\$219.91	\$235.10	\$236.79	\$239.69	\$241.81	\$244.28	\$247.06	\$246.75	\$247.10	\$249.92	\$250.98	\$252.38	\$254.88	\$257.02	\$259.8
<b>MINING</b> .....	365.07	396.14	395.71	404.99	408.10	413.76	422.04	425.97	422.01	416.66	422.92	423.98	418.47	434.02	441.38
<b>CONSTRUCTION</b> .....	342.99	367.04	374.49	386.64	388.10	376.83	384.28	379.29	364.35	388.37	384.87	388.56	394.32	404.52	405.04
<b>MANUFACTURING</b> .....	269.34	288.62	287.62	295.32	298.10	305.52	314.16	308.43	306.13	311.22	312.84	317.59	320.39	317.59	320.40
<b>Durable goods</b> .....	290.90	310.78	308.47	318.38	322.80	330.08	341.55	332.49	329.57	336.96	338.52	343.07	345.91	342.00	344.92
Lumber and wood products .....	239.16	252.06	263.42	265.67	263.82	264.99	267.58	263.45	262.19	264.81	267.05	274.03	280.45	275.60	278.07
Furniture and fixtures .....	195.82	209.17	208.68	214.10	215.60	216.19	225.72	217.55	219.84	223.49	220.80	224.46	229.12	223.78	229.20
Stone, clay, and glass products .....	284.28	306.00	310.54	316.06	319.66	323.33	325.73	317.16	312.44	322.36	331.70	337.02	342.37	342.74	346.47
Primary metal industries .....	371.77	391.78	384.15	397.40	402.99	419.83	430.98	425.80	429.79	432.37	443.31	436.81	440.08	434.03	438.87
Fabricated metal products .....	278.80	300.98	299.60	309.02	311.45	317.79	327.81	318.76	316.40	325.21	323.61	332.52	335.78	327.18	331.67
Machinery except electrical .....	305.98	328.00	323.21	336.61	337.81	346.09	358.70	351.44	349.25	355.14	353.74	360.50	362.09	358.43	359.31
Electric and electronic equipment .....	254.70	276.61	274.79	282.66	285.76	293.71	302.58	297.14	294.23	300.29	299.90	302.76	305.52	306.86	313.20
Transportation equipment .....	350.58	378.39	373.20	388.28	400.73	411.58	434.88	407.36	398.19	414.29	415.74	426.40	427.87	422.28	427.66
Instruments and related products .....	251.74	275.40	273.71	277.09	279.68	286.71	293.76	291.91	291.60	293.54	289.28	294.59	296.54	298.00	301.10
Miscellaneous manufacturing .....	195.16	211.69	210.98	216.22	216.28	219.74	226.34	224.65	223.87	227.57	228.13	230.68	231.27	229.85	232.02
<b>Nondurable goods</b> .....	236.19	255.84	259.35	262.36	263.53	268.71	274.91	273.22	271.52	274.09	275.41	280.13	282.03	282.69	285.26
Food and kindred products .....	250.17	272.34	278.76	279.68	275.92	284.31	287.34	288.40	284.53	285.77	289.64	295.71	295.71	295.42	298.15
Tobacco manufactures .....	253.46	294.51	288.56	287.65	307.60	315.19	308.61	328.10	329.56	320.29	331.08	348.56	359.21	360.05	350.24
Textile mill products .....	188.26	203.71	203.84	208.95	210.27	213.99	218.41	213.47	213.47	214.94	211.18	217.62	218.97	218.20	226.40
Apparel and other textile products .....	149.32	161.78	162.84	165.09	167.92	168.15	172.68	172.13	171.91	176.85	174.59	179.28	182.00	178.20	182.87
Paper and allied products .....	303.74	331.63	333.98	340.94	341.40	350.10	361.40	353.13	349.42	351.92	354.05	357.85	365.09	371.03	367.14
Printing and publishing .....	260.25	279.36	283.46	287.56	287.93	289.79	300.23	293.83	293.72	297.54	297.48	302.13	302.44	305.41	308.25
Chemicals and allied products .....	318.44	344.45	343.56	349.81	354.00	361.20	365.85	363.58	365.20	367.74	371.90	373.98	377.31	378.40	378.94
Petroleum and coal products .....	409.97	421.76	430.86	448.32	453.61	458.67	449.45	471.16	481.53	478.40	500.46	491.81	491.12	499.49	486.49
Rubber and miscellaneous plastics products .....	241.79	263.06	266.00	270.82	276.35	282.77	289.95	289.46	283.01	287.75	288.86	295.30	295.71	291.20	299.47
Leather and leather products .....	154.03	168.09	168.36	167.71	170.19	170.25	174.91	177.39	179.10	180.32	178.96	185.13	189.74	181.04	192.50
<b>TRANSPORTATION AND PUBLIC UTILITIES</b> .....	325.58	351.25	354.92	358.09	365.76	368.02	372.00	367.60	373.28	371.15	374.92	376.89	383.27	387.25	396.01
<b>WHOLESALE AND RETAIL TRADE</b> .....	164.96	176.46	179.52	179.03	179.44	181.04	182.65	183.86	185.13	186.62	188.43	188.48	190.25	193.26	193.58
<b>WHOLESALE TRADE</b> .....	247.93	267.96	268.42	272.20	274.38	276.82	281.25	281.82	282.65	285.67	287.60	289.14	289.89	292.96	294.52
<b>RETAIL TRADE</b> .....	138.62	147.38	151.10	149.49	149.40	150.60	152.20	152.81	153.92	154.96	156.60	156.38	158.99	161.39	161.92
<b>FINANCE, INSURANCE, AND REAL ESTATE</b> .....	190.77	209.24	211.63	211.91	214.53	218.53	217.80	222.04	226.04	225.32	225.06	225.26	225.26	227.96	231.50
<b>SERVICES</b> .....	175.27	190.71	192.31	192.32	195.60	198.53	199.51	201.83	204.40	205.05	205.38	206.73	206.99	208.89	211.20

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

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

Year and month	Private nonagricultural workers						Manufacturing workers					
	Gross average weekly earnings		Spendable average weekly earnings				Gross average weekly earnings		Spendable average weekly earnings			
			Worker with no dependents		Married worker with 3 dependents				Worker with no dependents		Married worker with 3 dependents	
	Current dollars	1977 dollars	Current dollars	1977 dollars	Current dollars	1977 dollars	Current dollars	1977 dollars	Current dollars	1977 dollars	Current dollars	1977 dollars
1961	\$82.60	\$167.21	\$67.08	\$135.79	\$74.48	\$150.77	\$92.34	\$186.92	\$74.60	\$151.01	\$82.18	\$166.36
1962	85.91	172.16	69.56	139.40	76.99	154.29	96.56	193.51	77.86	156.03	85.53	171.40
1963	88.46	175.17	71.05	140.69	78.56	155.56	99.23	196.50	79.51	157.45	87.25	172.77
1964	91.33	178.38	75.04	146.56	82.57	161.27	102.97	201.11	84.40	164.84	92.18	180.04
1965	95.45	183.21	79.32	152.25	86.63	166.28	107.53	206.39	89.08	170.98	96.78	185.76
1966	98.82	184.37	81.29	151.66	88.66	165.41	112.19	209.31	91.45	170.62	99.33	185.32
1967	101.84	184.83	83.38	151.32	90.86	164.90	114.49	207.79	92.97	168.73	100.93	183.18
1968	107.73	187.68	86.71	151.06	95.28	165.99	122.51	312.43	97.70	170.21	106.75	185.98
1969	114.61	189.44	90.96	150.35	99.99	165.27	129.51	214.07	101.90	168.43	111.44	184.20
1970	119.83	186.94	96.21	150.09	104.90	163.65	133.33	208.00	106.32	165.87	115.58	180.31
1971	127.31	190.58	103.80	155.39	112.43	168.31	142.44	213.23	114.97	172.11	124.24	185.99
1972	136.90	198.41	112.19	162.59	121.68	176.35	154.71	224.22	125.34	181.65	135.57	196.48
1973	145.39	198.35	117.51	160.31	127.38	173.78	166.46	227.09	132.57	180.86	143.50	195.77
1974	154.76	190.12	124.37	152.79	134.61	165.37	176.80	217.20	140.19	172.22	151.56	186.19
1975	163.53	184.16	132.49	149.20	145.65	164.02	190.79	214.85	151.61	170.73	166.29	187.26
1976	175.45	186.85	143.30	152.61	155.87	166.00	209.32	222.92	167.83	178.73	181.32	193.10
1977	189.00	189.00	155.19	155.19	169.93	169.93	228.90	228.90	183.80	183.80	200.06	200.06
1978	203.70	189.31	165.39	153.71	180.71	167.95	249.27	231.66	197.40	183.46	214.87	199.69
1979	219.91	183.41	178.00	148.46	194.82	162.49	269.34	224.64	212.70	177.40	232.38	193.81
1980	235.10	172.74	188.82	138.74	206.06	151.65	288.62	212.06	225.79	165.90	247.01	181.49
1980: August	236.79	172.21	190.01	138.19	207.68	151.04	287.62	209.18	225.11	163.72	246.25	179.09
September	239.69	172.69	192.03	138.35	209.88	151.21	295.32	212.77	230.33	165.94	252.09	181.62
October	241.81	172.72	193.51	138.22	211.49	151.06	298.10	212.93	232.22	165.87	254.20	181.57
November	244.28	172.88	195.24	138.17	213.37	151.00	305.52	216.22	237.26	167.91	259.83	183.89
December	247.06	173.38	197.18	138.37	215.47	151.21	314.16	220.46	242.86	170.43	266.14	186.76
1981: January	246.75	171.83	195.68	136.27	213.96	149.00	308.43	214.78	237.60	165.46	260.36	181.31
February	247.10	170.18	195.92	134.93	214.22	147.53	306.13	210.83	236.08	162.59	258.70	178.17
March	249.92	171.06	197.88	135.44	216.34	148.08	311.22	213.02	239.37	163.84	262.38	179.59
April	250.98	170.73	198.61	135.11	217.14	147.71	312.84	212.82	240.39	163.53	263.55	179.29
May	252.38	170.18	199.59	134.59	218.20	147.13	317.59	214.15	243.40	164.13	266.99	180.03
June	254.88	170.49	201.32	134.66	220.08	147.21	320.39	214.31	245.18	164.00	269.01	179.94
July <sup>P</sup>	257.02	169.87	202.80	134.04	221.69	146.52	317.59	209.91	243.40	160.87	266.99	176.46
August <sup>P</sup>	259.88	( <sup>1</sup> )	204.79	( <sup>1</sup> )	223.85	( <sup>1</sup> )	320.40	( <sup>1</sup> )	245.18	( <sup>1</sup> )	269.02	( <sup>1</sup> )

<sup>1</sup> Not available.  
 NOTE: The earnings expressed in 1977 dollars have been adjusted for changes in price level as measured by the Bureau's Consumer Price Index for Urban Wage Earners and Clerical Workers. These series are described in "The Spendable Earnings Series: A Technical Note on its Calculation," *Employment and Earnings and Monthly Report on the Labor Force*, February 1969, pp. 6-13. See also "Spendable Earnings Formulas, 1979-81," *Employment and Earnings*, March 1981, pp. 10-11.

## UNEMPLOYMENT INSURANCE DATA

UNEMPLOYMENT INSURANCE DATA are compiled monthly by the Employment and Training Administration of the U.S. Department of Labor from records of State and Federal unemployment insurance claims filed and benefits paid. 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 one-third of the labor force) and those who have exhausted or not yet earned benefit rights are excluded from the scope of the survey. **Initial claims** are notices filed by persons in unemployment insurance programs to indicate they are out of work and wish to begin receiving compensation. A claimant who continued to be unemployed a full week is then counted in the insured unemployment figure. The **rate of insured unemployment** expresses the number of insured unemployed as a percent of the average insured employment in a 12-month period.

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

### 21. Unemployment insurance and employment service operations

[All items except average benefits amounts are in thousands]

Item	1980						1981						
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
All programs:													
Insured unemployment	4,140	3,911	3,961	3,661	3,726	4,085	4,621	4,264	3,948	3,453	3,111	2,949	3,012
State unemployment insurance program: <sup>1</sup>													
Initial claims <sup>2</sup>	2,737	1,829	1,702	1,808	1,673	2,544	2,653	1,806	1,684	1,647	1,417	1,744	....
Insured unemployment (average weekly volume)	3,692	3,408	3,087	2,903	2,983	3,321	3,844	3,669	3,382	2,988	2,691	2,596	2,743
Rate of insured unemployment	4.3	3.9	3.6	3.3	3.4	3.8	4.4	4.2	3.9	3.4	3.1	3.0	3.1
Weeks of unemployment compensated	14,398	12,786	11,689	11,443	9,524	12,603	14,228	12,882	13,504	11,871	9,790	9,928	....
Average weekly benefit amount for total unemployment	\$98.75	\$99.68	\$99.86	\$92.32	\$101.96	\$101.43	\$102.34	\$101.89	\$105.63	\$105.96	\$105.49	\$99.02	....
Total benefits paid	\$1,397,508	\$1,249,782	\$1,144,885	\$1,125,416	\$1,055,065	\$1,242,957	\$1,416,513	\$1,313,507	\$1,393,612	\$1,226,815	\$1,006,341	\$1,012,764	....
Unemployment compensation for ex-servicemen: <sup>3</sup>													
Initial claims <sup>1</sup>	27	23	25	23	17	21	19	17	18	16	15	19	....
Insured unemployment (average weekly volume)	58	55	56	56	54	55	57	54	51	46	43	42	44
Weeks of unemployment compensated	331	244	245	255	216	261	257	221	234	214	183	192	....
Total benefits paid	\$33,342	\$24,560	\$24,804	\$25,880	\$21,024	\$27,015	\$26,646	\$22,517	\$24,668	\$23,048	\$19,965	\$21,145	....
Unemployment compensation for Federal civilian employees: <sup>4</sup>													
Initial claims	17	15	19	21	14	18	22	13	12	12	11	13	....
Insured unemployment (average weekly volume)	26	25	29	32	35	37	41	40	36	31	27	25	25
Weeks of unemployment compensated	124	93	105	130	118	150	160	148	156	135	107	105	....
Total benefits paid	\$11,296	\$8,707	\$9,699	\$11,917	\$11,365	\$14,184	\$15,432	\$14,573	\$15,561	\$13,701	\$11,023	\$10,705	....
Railroad unemployment insurance:													
Applications	44	13	10	9	7	11	13	5	5	6	6	26	41
Insured unemployment (average weekly volume)	44	39	40	38	38	39	53	50	44	41	35	30	28
Number of payments	66	86	89	84	70	83	118	104	115	94	79	86	32
Average amount of benefit payment	\$207.08	\$211.87	\$211.99	\$208.49	\$209.00	\$212.27	\$209.38	\$214.56	\$214.93	\$201.12	\$199.43	\$201.06	\$199.63
Total benefits paid	\$13,320	\$17,336	\$18,809	\$17,789	\$14,269	\$18,046	\$20,303	\$22,049	\$23,233	\$19,239	\$15,428	\$16,206	\$11,541
Employment service: <sup>5</sup>													
New applications and renewals	14,249	15,431	16,831	....	....	4,476	....	....	8,659	....	....	....	....
Nonfarm placements	3,105	3,445	3,896	....	....	871	....	....	1,574	....	....	....	....

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

<sup>2</sup> Includes interstate claims for the Virgin Islands. Excludes transition claims under State programs.

<sup>3</sup> Excludes data on claims and payments made jointly with other programs.

<sup>4</sup> Includes the Virgin Islands. Excludes data on claims and payments made jointly with State programs.

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

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

r = revised.

## PRICE DATA

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

### Definitions

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

The CPI is based on prices of food, clothing, shelter, fuel, drugs, transportation fares, doctor's and dentist's fees, and other goods and services that people buy for day-to-day living. The quantity and quality of these items is kept essentially unchanged between major revisions so that only price changes will be measured. Prices are collected from over 18,000 tenants, 24,000 retail establishments, and 18,000 housing units for property taxes in 85 urban areas across the country. All taxes directly associated with the purchase and use of items are included in the index. Because the CPI's are based on the expenditures of two population groups in 1972-73, they may not accurately reflect the experience of individual families and single persons with different buying habits.

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

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

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

To the extent possible, prices used in calculating Producer Price Indexes apply to the first significant commercial transaction in the United States, from the production or central marketing point. Price data are generally collected monthly, primarily by mail questionnaire.

Most prices are obtained directly from producing companies on a voluntary and confidential basis. Prices generally are reported for the Tuesday of the week containing the 13th day of the month.

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

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

### Notes on the data

Beginning with the May 1978 issue of the *Review*, regional CPI's cross classified by population size, were introduced. These indexes will enable users in local areas for which an index is not published to get a better approximation of the CPI for their area by using the appropriate population size class measure for their region. The cross-classified indexes will be published bimonthly. (See table 24.)

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

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

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

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

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

[1967=100]

Year	All items		Food and beverages		Housing		Apparel and upkeep		Transportation		Medical care		Entertainment		Other goods and services	
	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change
1967	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...
1968	104.2	4.2	103.6	3.6	104.0	4.0	105.4	5.4	103.2	3.2	106.1	6.1	105.7	5.7	105.2	5.2
1969	109.8	5.4	108.8	5.0	110.4	6.2	111.5	5.8	107.2	3.9	113.4	6.9	111.0	5.0	110.4	4.9
1970	116.3	5.9	114.7	5.4	118.2	7.1	116.1	4.1	112.7	5.1	120.6	6.3	116.7	5.1	116.8	5.8
1971	121.3	4.3	118.3	3.1	123.4	4.4	119.8	3.2	118.6	5.2	128.4	6.5	122.9	5.3	122.4	4.8
1972	125.3	3.3	123.2	4.1	128.1	3.8	122.3	2.1	119.9	1.1	132.5	3.2	126.5	2.9	127.5	4.2
1973	133.1	6.2	139.5	13.2	133.7	4.4	126.8	3.7	123.8	3.3	137.7	3.9	130.0	2.8	132.5	3.9
1974	147.7	11.0	158.7	13.8	148.8	11.3	136.2	7.4	137.7	11.2	150.5	9.3	139.8	7.5	142.0	7.2
1975	161.2	9.1	172.1	8.4	164.5	10.6	142.3	4.5	150.6	9.4	168.6	12.0	152.2	8.9	153.9	8.4
1976	170.5	5.8	177.4	3.1	174.6	6.1	147.6	3.7	165.5	9.9	184.7	9.5	159.8	5.0	162.7	5.7
1977	181.5	6.5	188.0	6.0	186.5	6.8	154.2	4.5	177.2	7.1	202.4	9.6	167.7	4.9	172.2	5.8
1978	195.3	7.6	206.2	9.7	202.6	8.6	159.5	3.4	185.8	4.9	219.4	8.4	176.2	5.1	183.2	6.4
1979	217.7	11.5	228.7	10.9	227.5	12.3	166.4	4.3	212.8	14.5	240.1	9.4	187.6	6.5	196.3	7.2
1980	247.0	13.5	248.7	8.7	263.2	15.7	177.4	6.6	250.5	17.7	267.2	11.3	203.7	8.5	213.6	8.8

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

[1967=100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
All items	247.8	263.2	265.1	266.8	269.0	271.3	274.4	248.0	263.5	265.2	266.8	269.1	271.4	274.6
Food and beverages	248.3	263.7	265.0	265.7	265.4	266.5	268.9	249.1	264.3	265.5	266.1	265.9	267.0	269.4
Housing	265.1	280.9	282.6	284.8	288.5	292.2	297.0	265.1	280.7	282.2	284.3	288.1	291.9	297.0
Apparel and upkeep	176.2	182.0	185.1	186.4	186.4	185.8	184.7	175.4	181.8	184.3	186.0	186.2	185.8	185.5
Transportation	251.0	270.9	273.5	275.3	277.8	279.9	282.6	251.9	272.1	274.4	276.3	278.9	281.0	283.9
Medical care	266.6	282.6	284.7	287.0	289.0	291.5	295.6	267.8	284.4	287.0	289.1	290.8	292.9	295.4
Entertainment	206.6	216.7	218.2	219.2	220.3	220.8	221.1	204.4	215.0	216.1	217.0	217.7	218.3	218.7
Other goods and services	213.5	227.4	228.7	229.9	232.2	233.4	234.4	212.9	225.6	226.8	227.9	230.4	231.4	232.4
Commodities	234.1	248.3	249.8	250.8	251.9	253.2	255.0	234.4	248.8	250.2	251.2	252.4	253.8	255.7
Commodities less food and beverages	224.0	237.4	239.0	240.0	241.7	243.1	244.7	224.2	237.9	239.4	240.5	242.3	243.8	245.5
Nondurables less food and beverages	241.4	258.6	263.1	263.8	263.8	263.5	262.9	243.5	261.4	265.7	266.5	266.6	266.3	266.0
Durables	209.6	220.3	219.8	221.1	223.9	226.6	229.6	208.0	218.6	217.8	219.3	222.4	225.2	228.4
Services	272.4	290.1	292.5	295.4	299.6	303.5	308.8	273.1	290.8	293.1	295.9	300.0	303.9	309.6
Rent, residential	192.1	201.9	203.0	204.2	205.9	206.8	207.8	191.8	201.6	202.7	203.9	205.5	206.4	207.4
Household services less rent	323.3	345.4	348.8	353.3	360.4	366.7	374.8	325.9	348.5	351.8	356.2	363.5	370.1	379.4
Transportation services	243.8	260.5	262.5	264.4	266.6	269.6	275.0	243.9	259.7	261.3	263.1	265.5	268.2	273.8
Medical care services	288.0	305.2	307.5	309.8	311.7	314.4	319.2	289.3	307.4	310.2	312.2	313.6	315.8	318.5
Other services	218.1	232.3	233.2	234.4	235.3	236.3	237.6	218.6	232.1	233.0	233.8	234.5	235.6	236.8
Special indexes:														
All items less food	245.1	260.4	262.3	264.2	267.0	269.5	272.7	245.3	260.8	262.6	264.4	267.2	269.7	273.1
All items less mortgage interest costs	236.8	250.6	252.3	253.6	255.2	256.9	259.3	237.4	251.4	252.9	254.2	255.8	257.5	260.0
Commodities less food	222.2	235.4	237.0	238.0	239.6	241.1	242.6	222.4	236.0	237.4	238.6	240.3	241.8	243.5
Nondurables less food	236.6	253.2	257.5	258.1	258.2	258.0	257.5	238.7	255.9	259.9	260.7	260.9	260.7	260.4
Nondurables less food and apparel	270.3	292.4	297.3	297.7	298.0	298.0	297.8	272.2	294.7	299.5	299.9	300.1	300.0	299.8
Nondurables	245.9	262.3	265.2	265.9	265.8	266.2	267.1	247.2	263.8	266.6	267.3	267.2	267.6	268.7
Services less rent	287.6	306.9	309.5	312.8	317.4	321.9	328.1	288.6	307.9	310.4	313.5	318.2	322.6	329.3
Services less medical care	268.9	286.5	288.9	291.8	296.2	300.1	305.4	269.4	287.0	289.2	292.0	296.4	300.4	306.3
Domestically produced farm foods	238.5	254.0	255.4	255.3	254.7	255.9	259.5	238.4	253.9	254.9	255.0	254.2	255.3	259.0
Selected beef cuts	269.2	273.0	270.9	267.7	270.9	271.6	275.3	271.2	275.1	273.9	270.7	273.8	274.3	277.9
Energy	370.4	401.1	409.3	409.8	411.3	414.0	415.7	373.9	405.4	413.7	414.0	414.9	417.3	418.9
All items less energy	238.3	252.5	253.8	255.6	257.9	260.2	263.5	237.6	251.8	252.9	254.7	257.0	259.3	262.7
All items less food and energy	233.1	246.8	248.1	250.1	253.0	255.6	259.0	232.1	245.8	246.9	248.9	251.9	254.5	258.1
Commodities less food and energy	202.0	211.7	212.2	213.5	215.7	217.5	219.4	200.6	210.5	210.7	212.2	214.6	216.6	218.7
Energy commodities	404.8	449.0	460.0	458.4	455.4	453.1	451.3	406.1	450.1	460.9	459.3	456.0	453.7	451.9
Services less energy	269.1	287.6	289.9	292.7	296.5	299.8	304.9	269.8	288.4	290.6	293.2	297.0	300.2	305.7
Purchasing power of the consumer dollar, 1967 = \$1	\$0.404	\$0.380	\$0.377	\$0.375	\$0.372	\$0.369	\$0.364	\$0.403	\$0.380	\$0.377	\$0.375	\$0.372	\$0.368	\$0.364

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers						Urban Wage Earners and Clerical Workers (revised)							
	1980		1981				1980		1981					
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
<b>FOOD AND BEVERAGES</b>	248.3	263.7	265.0	265.7	265.4	266.5	268.9	249.1	264.3	265.5	266.1	265.9	267.0	269.4
<b>Food</b>	254.8	270.8	272.2	272.9	272.5	273.6	276.2	255.5	271.4	272.6	273.2	272.9	274.0	276.6
Food at home	251.5	267.3	268.6	268.7	267.7	268.7	271.6	251.1	267.0	268.1	268.2	267.2	268.2	271.1
Cereals and bakery products	247.8	265.3	266.7	268.3	270.0	271.5	272.4	248.0	265.0	266.5	268.0	269.4	270.7	271.5
Cereals and cereal products (12/77 = 100)	135.0	144.5	145.2	145.4	146.8	148.3	149.0	135.5	145.5	146.5	146.9	148.4	150.0	150.6
Flour and prepared flour mixes (12/77 = 100)	132.9	137.5	138.5	137.1	138.8	139.0	139.5	132.8	137.9	139.4	139.2	140.3	141.4	141.9
Cereal (12/77 = 100)	135.5	146.5	146.9	147.8	149.8	152.4	153.4	135.5	148.0	148.5	148.9	151.3	154.0	154.8
Rice, pasta, and commmeal (12/77 = 100)	136.2	147.9	148.9	149.5	149.8	150.9	151.2	137.9	149.3	150.5	151.4	152.0	152.7	153.2
Bakery products (12/77 = 100)	129.8	139.0	139.7	140.8	141.5	142.1	142.5	129.8	138.5	139.2	140.1	140.6	141.0	141.4
White bread	218.4	231.4	232.9	233.2	235.1	236.0	236.4	217.5	230.9	231.2	232.1	233.2	233.1	233.9
Other breads (12/77 = 100)	129.4	137.3	137.9	139.5	139.3	140.2	140.6	132.3	140.1	140.3	141.2	141.7	142.5	142.9
Fresh biscuits, rolls, and muffins (12/77 = 100)	129.2	138.9	140.1	140.4	141.5	141.7	142.4	128.1	136.9	138.4	138.7	139.6	139.7	141.7
Fresh cakes and cupcakes (12/77 = 100)	127.9	139.5	140.0	142.1	142.3	142.3	142.7	138.1	139.5	140.8	141.2	141.2	141.2	141.4
Cookies (12/77 = 100)	127.1	139.0	139.7	141.2	141.8	143.3	143.0	128.3	139.8	140.6	141.8	142.1	143.3	142.6
Crackers and bread and cracker products (12/77 = 100)	125.5	128.6	129.1	130.9	128.2	130.7	131.6	125.7	128.6	129.6	131.1	128.9	131.5	131.2
Fresh sweetrolls, coffee cake, and donuts (12/77 = 100)	129.5	140.4	141.1	141.7	142.8	142.9	143.9	130.0	140.0	140.7	141.7	142.5	142.3	142.8
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	131.5	141.4	141.9	144.0	147.0	146.1	147.2	129.6	136.3	137.6	139.0	140.1	140.3	140.9
Meats, poultry, fish, and eggs	236.7	252.5	250.5	247.7	247.0	248.7	254.1	236.1	251.6	249.9	247.1	246.3	248.4	254.1
Meats, poultry, and fish	243.4	257.9	256.2	253.0	253.2	255.0	260.7	242.8	257.0	255.7	252.2	252.4	254.5	260.5
Meats	243.3	256.4	254.4	251.0	252.3	254.2	259.6	242.8	256.0	254.2	250.7	251.7	253.9	259.7
Beef and veal	267.9	272.3	270.3	267.4	270.3	271.1	274.5	269.6	273.8	272.6	269.5	272.5	273.0	276.5
Ground beef other than canned	266.6	272.8	269.7	264.8	264.1	264.6	264.5	268.7	275.7	272.9	269.0	267.8	267.9	267.9
Chuck roast	277.7	288.1	284.1	281.4	280.3	281.0	283.5	285.3	298.6	295.6	291.8	290.9	288.9	295.5
Round roast	243.2	248.0	243.9	242.8	246.8	246.2	245.6	246.2	247.5	248.8	247.5	249.4	249.5	249.8
Round steak	253.2	259.0	256.1	252.9	256.0	255.1	258.9	253.6	254.7	253.3	251.3	253.7	253.6	257.0
Sirloin steak	270.2	262.0	259.8	261.5	271.4	274.6	284.3	274.2	263.5	264.5	262.7	275.3	278.7	285.6
Other beef and veal (12/77 = 100)	155.9	157.7	157.8	156.1	159.2	159.9	163.5	155.2	156.9	156.7	154.9	158.5	159.2	162.4
Pork	200.3	223.6	221.6	217.4	217.3	221.2	231.5	200.7	223.2	221.3	216.7	216.3	221.3	232.6
Bacon	186.3	221.7	218.5	209.0	212.7	216.5	228.1	189.1	225.7	221.6	210.0	215.2	220.5	230.5
Chops	193.1	210.3	209.3	209.2	203.7	209.8	221.8	193.3	207.6	206.9	206.3	201.5	209.8	222.4
Ham other than canned (12/77 = 100)	92.1	100.0	98.7	95.2	97.2	98.0	102.0	90.5	98.2	96.3	92.6	93.8	95.1	100.4
Sausage	249.2	282.3	281.0	277.4	277.7	278.9	289.7	252.0	282.0	282.7	280.1	278.5	278.7	293.4
Canned ham	208.6	238.0	236.6	230.1	230.5	229.8	233.0	207.6	240.6	237.9	230.8	231.4	230.1	234.4
Other pork (12/77 = 100)	115.1	125.4	124.2	123.4	122.7	126.7	133.6	114.9	125.0	124.3	123.8	122.4	127.7	134.5
Other meats	239.1	260.8	258.5	255.4	253.9	255.9	258.4	236.5	259.1	256.0	253.4	250.6	253.1	256.6
Frankfurters	229.1	259.4	257.8	253.5	247.6	250.7	251.8	231.5	261.0	257.2	252.8	247.0	249.8	251.9
Bologna, liverwurst, and salami (12/77 = 100)	135.1	149.4	147.0	143.5	143.0	143.9	145.9	131.4	146.0	144.7	142.6	140.6	141.9	144.6
Other lunchmeats (12/77 = 100)	120.6	129.8	128.1	127.9	126.9	127.6	129.1	118.8	128.6	126.4	126.4	124.8	126.0	126.5
Lamb and organ meats (12/77 = 100)	137.2	144.1	144.7	143.1	145.3	146.5	147.6	138.2	146.5	146.0	143.8	145.9	147.1	148.9
Poultry	187.9	203.7	201.6	196.8	194.7	196.8	204.8	186.0	201.3	200.6	194.6	192.5	194.4	203.1
Fresh whole chicken	193.6	207.0	203.1	198.0	190.3	193.8	206.9	189.1	201.7	200.9	194.1	187.0	190.3	202.9
Fresh and frozen chicken parts (12/77 = 100)	120.9	131.9	131.6	127.5	127.5	127.3	133.0	120.8	131.9	130.1	125.8	126.6	127.0	133.3
Other poultry (12/77 = 100)	117.0	128.5	127.6	125.9	128.3	128.9	130.0	116.6	127.8	128.9	126.3	127.5	128.2	129.3
Fish and seafood	330.1	355.0	358.8	359.7	353.2	352.1	356.9	326.4	349.5	351.5	353.7	349.9	349.8	353.5
Canned fish and seafood (12/77 = 100)	129.2	138.0	138.9	138.8	139.2	139.3	140.6	127.3	135.9	136.2	136.6	137.8	137.9	139.0
Fresh and frozen fish and seafood (12/77 = 100)	123.7	133.5	135.3	135.9	131.8	131.0	133.1	122.5	131.4	132.5	133.6	130.5	130.4	131.9
Eggs	154.2	188.2	180.5	184.3	170.5	172.1	174.2	153.5	187.0	180.5	185.5	171.5	173.0	175.0
Dairy products	228.6	242.1	242.6	243.5	243.8	243.8	244.2	229.2	242.5	242.7	243.8	243.9	243.9	243.9
Fresh milk and cream (12/77 = 100)	127.7	134.0	134.3	134.6	134.9	134.8	134.9	128.0	134.1	134.1	134.7	134.7	134.5	134.4
Fresh whole milk	209.4	219.3	219.9	220.4	220.8	220.7	220.7	209.8	219.3	219.4	220.2	220.4	220.0	219.9
Other fresh milk and cream (12/77 = 100)	126.9	134.2	134.4	134.5	134.7	134.6	134.9	127.5	134.4	134.5	135.2	134.8	135.1	134.5
Processed dairy products (12/77 = 100)	131.4	140.8	141.1	142.0	141.9	142.0	142.5	131.9	141.6	141.8	142.6	142.6	142.9	143.1
Butter	226.9	242.2	243.0	244.3	245.2	245.1	245.8	229.7	246.0	246.4	247.7	247.6	248.7	247.7
Cheese (12/77 = 100)	130.0	139.2	139.8	140.6	140.5	140.5	140.7	130.1	139.6	140.0	140.5	140.6	140.9	141.3
Ice cream and related products (12/77 = 100)	134.6	145.9	145.3	146.7	146.2	146.4	147.6	135.5	146.8	146.1	147.8	147.8	147.8	148.0
Other dairy products (12/77 = 100)	127.5	134.5	135.1	135.7	136.1	136.3	136.6	127.7	135.0	136.1	136.1	136.4	136.8	137.2
Fruits and vegetables	253.9	267.3	278.2	281.9	276.8	278.1	284.4	253.0	266.5	275.0	280.0	274.3	275.3	281.7
Fresh fruits and vegetables	265.8	278.1	293.9	296.4	284.4	285.2	294.0	265.2	277.6	289.4	294.5	281.8	281.0	290.2
Fresh fruits	282.7	256.8	265.2	271.6	276.6	278.9	292.1	282.3	254.4	259.0	268.6	271.5	272.1	285.5
Apples	316.6	217.1	227.9	231.1	235.4	239.9	251.9	318.7	218.2	225.7	232.1	232.7	241.0	253.1
Bananas	232.6	256.9	264.1	266.8	266.3	260.5	240.6	228.7	249.4	258.8	262.2	264.2	259.0	233.8
Oranges	273.9	284.9	287.4	287.5	274.1	267.1	327.8	261.5	269.4	268.4	274.3	261.1	274.0	307.0
Other fresh fruits (12/77 = 100)	147.5	135.9	141.1	147.1	154.9	154.4	160.4	148.7	137.9	139.9	147.6	153.3	149.9	158.9
Fresh vegetables	250.1	298.0	320.8	319.6	291.7	291.1	295.9	249.8	298.7	316.9	318.0	291.1	289.0	294.4
Potatoes	310.5	350.2	363.9	378.1	384.4	414.3	414.9	309.4	347.1	359.6	369.8	378.1	402.7	404.2
Lettuce	205.9	220.4	225.2	226.9	252.5	238.7	261.3	200.6	226.6	219.3	231.5	255.6	237.1	259.2
Tomatoes	209.2	312.8	367.8	375.3	200.2	194.0	210.8	308.6	354.0	370.7	193.8	200.8	200.8	195.5
Other fresh vegetables (12/77 = 100)	137.1	163.5	177.0	170.0	158.6	151.8	154.5	138.0	164.8	177.1	170.0	160.1	153.6	155.8
Processed fruits and vegetables	243.0	257.8	263.3</											



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

[1967=100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
<b>FOOD AND BEVERAGES—Continued</b>														
<b>Food—Continued</b>														
Food at home—Continued														
Fruits and vegetables—Continued														
Cut corn and canned beans except lima (12/77=100) . . . . .	118.1	128.2	128.4	130.2	131.5	134.6	136.0	117.0	126.5	126.3	129.0	130.1	133.6	134.8
Other canned and dried vegetables (12/77=100) . . . . .	117.0	124.7	126.4	128.7	129.8	131.4	134.6	115.6	123.5	125.3	127.1	128.0	129.7	132.8
Other foods at home . . . . .	304.3	323.0	324.1	324.7	323.7	323.6	323.3	303.7	323.6	325.2	325.4	324.8	324.5	324.2
Sugar and sweets . . . . .	353.1	385.4	383.2	375.8	367.1	361.3	360.0	354.7	387.7	384.6	377.8	368.1	363.0	362.8
Candy and chewing gum (12/77=100) . . . . .	131.6	141.1	142.8	144.1	145.1	145.2	145.9	132.0	142.0	143.6	145.1	145.8	146.5	147.3
Sugar and artificial sweeteners (12/77=100) . . . . .	194.2	217.7	209.7	195.5	178.4	168.2	164.6	194.5	217.9	209.6	196.0	179.2	169.3	166.6
Other sweets (12/77=100) . . . . .	127.2	137.7	139.3	139.8	141.4	142.6	142.9	126.5	137.3	138.2	138.7	139.7	140.8	141.8
Fats and oils (12/77=100) . . . . .	239.3	267.3	268.9	270.1	270.7	269.6	269.0	240.6	268.9	270.5	270.4	270.9	269.5	269.0
Margarine . . . . .	247.0	256.8	255.7	256.1	256.1	256.1	255.9	248.6	258.3	257.7	256.1	256.7	256.0	256.6
Nondairy substitutes and peanut butter (12/77=100) . . . . .	123.6	171.8	179.3	182.4	182.7	181.8	181.0	124.0	172.7	180.0	182.3	181.6	180.5	179.4
Other fats, oils, and salad dressings (12/77=100) . . . . .	124.6	131.0	129.9	129.8	130.4	129.6	129.4	125.0	131.4	130.3	129.7	130.4	129.6	129.4
Nonalcoholic beverages . . . . .	397.4	411.9	412.2	414.4	412.3	412.8	410.3	396.2	413.6	415.4	415.8	414.6	414.6	411.3
Cola drinks, excluding diet cola . . . . .	268.4	295.3	295.9	298.0	295.7	297.0	294.7	265.6	293.4	295.4	294.9	293.7	294.1	290.8
Carbonated drinks, including diet cola (12/77=100) . . . . .	129.2	140.1	140.5	141.8	140.6	140.8	139.6	127.4	137.8	138.7	139.8	139.4	139.3	138.3
Roasted coffee . . . . .	435.3	364.9	359.4	356.7	354.4	353.1	351.4	432.3	360.3	355.0	352.5	350.5	348.5	346.6
Freeze dried and instant coffee . . . . .	381.0	345.3	340.8	339.5	339.1	335.2	334.3	379.2	347.0	343.9	340.9	340.2	337.1	334.9
Other noncarbonated drinks (12/77=100) . . . . .	122.1	130.8	132.4	133.5	134.0	134.5	134.2	121.1	130.9	132.7	133.5	133.9	134.4	134.0
Other prepared foods . . . . .	232.3	246.9	249.4	251.2	252.9	254.4	256.3	232.1	247.1	250.0	252.4	254.7	255.8	257.9
Canned and packaged soup (12/77=100) . . . . .	123.3	128.7	128.4	129.3	131.5	132.6	133.2	123.5	129.3	129.2	129.8	132.1	133.5	134.5
Frozen prepared foods (12/77=100) . . . . .	132.4	140.0	142.3	142.3	141.6	142.2	143.7	131.3	137.8	139.6	139.8	139.6	140.8	142.3
Snacks (12/77=100) . . . . .	128.3	142.3	143.9	145.6	145.9	147.2	147.5	128.5	143.5	145.5	148.1	149.1	149.1	150.0
Seasonings, olives, pickles, and relish (12/77=100) . . . . .	128.0	137.2	139.1	139.9	140.0	141.1	142.0	127.3	136.3	137.9	138.7	139.3	140.3	141.4
Other condiments (12/77=100) . . . . .	130.2	135.8	138.1	139.2	141.1	140.8	142.3	131.6	137.3	140.0	141.7	143.6	143.2	144.4
Miscellaneous prepared foods (12/77=100) . . . . .	125.3	135.8	135.9	136.7	138.6	139.3	140.7	128.9	136.0	136.2	137.7	139.6	139.9	141.0
Other canned and packaged prepared foods (12/77=100) . . . . .	126.0	132.4	134.1	135.1	136.6	137.7	139.0	125.4	132.4	134.4	135.9	137.2	138.5	139.8
Food away from home . . . . .	267.8	284.7	286.1	288.2	289.3	290.6	292.4	271.2	287.3	288.6	290.7	291.9	293.5	295.2
Lunch (12/77=100) . . . . .	130.0	138.6	139.2	140.7	141.0	141.5	142.6	131.1	139.8	140.3	141.4	141.8	142.8	143.6
Dinner (12/77=100) . . . . .	130.1	138.2	138.8	139.4	139.9	140.7	141.3	132.0	139.4	140.1	141.1	141.7	142.6	143.0
Other meals and snacks (12/77=100) . . . . .	129.3	137.0	137.9	138.8	139.9	140.3	141.6	131.6	138.5	139.3	140.1	141.1	141.3	142.7
<b>Alcoholic beverages</b> . . . . .	187.2	195.9	197.1	197.8	199.1	199.8	200.5	189.2	197.6	198.7	199.4	201.2	202.1	202.8
Alcoholic beverages at home (12/77=100) . . . . .	122.1	127.4	128.1	128.5	129.3	129.7	130.1	123.6	128.8	129.6	130.0	131.1	131.5	131.9
Beer and ale . . . . .	189.2	197.6	198.2	199.7	201.4	202.0	201.8	189.7	197.2	198.5	199.8	201.8	202.4	202.4
Whiskey . . . . .	135.2	140.0	141.6	141.3	142.5	143.0	143.7	136.6	142.0	142.3	142.3	143.2	144.0	144.7
Wine . . . . .	212.6	224.0	224.3	224.7	223.9	224.6	227.5	217.4	231.6	233.6	233.2	234.3	233.4	236.9
Other alcoholic beverages (12/77=100) . . . . .	109.6	113.9	115.0	114.9	115.5	116.1	116.3	109.6	113.3	114.0	114.1	114.6	115.7	115.9
Alcoholic beverages away from home (12/77=100) . . . . .	122.5	129.7	131.1	131.6	132.6	133.1	134.1	122.9	129.4	129.9	130.6	132.0	133.4	134.0
<b>HOUSING</b> . . . . .	265.1	280.9	282.6	284.8	288.5	292.2	297.0	265.1	280.7	282.2	284.3	288.1	291.9	297.0
<b>Shelter</b> . . . . .	282.9	300.5	301.6	303.8	308.4	312.6	318.5	284.3	301.7	302.6	304.6	309.4	313.7	320.2
Rent, residential . . . . .	192.1	201.9	203.0	204.2	205.9	206.8	207.8	191.8	201.6	202.7	203.9	205.5	206.4	207.4
Other rental costs . . . . .	265.7	278.5	283.6	285.9	286.4	289.5	293.6	265.5	278.3	283.5	285.8	286.1	289.7	293.3
Lodging while out of town . . . . .	283.8	297.4	304.8	307.5	307.2	311.8	318.3	282.3	296.0	303.2	306.0	305.5	310.6	316.3
Tenants' insurance (12/77=100) . . . . .	123.1	129.3	130.1	131.2	131.9	133.1	133.3	123.3	129.9	130.8	131.6	132.3	133.4	133.7
Homeownership . . . . .	315.4	335.8	336.8	339.3	345.0	350.4	358.0	317.9	338.2	338.8	341.1	347.1	352.7	361.2
Home purchase . . . . .	253.9	263.0	261.1	260.7	263.0	266.6	271.4	254.3	262.7	260.2	259.7	262.2	266.2	271.2
Financing, taxes, and insurance . . . . .	399.6	437.1	441.1	447.1	458.3	467.2	480.0	405.0	442.6	446.4	452.6	464.3	473.8	486.9
Property insurance . . . . .	255.5	373.1	375.6	378.5	383.7	386.6	387.1	357.2	376.6	379.9	382.5	387.1	388.1	388.3
Property taxes . . . . .	188.3	198.5	199.0	199.9	199.8	200.3	201.4	190.0	200.6	201.0	201.7	201.7	202.2	203.2
Contracted mortgage interest cost . . . . .	512.2	565.0	570.9	579.8	596.9	610.4	630.1	514.6	566.5	572.0	580.9	598.6	612.9	632.6
Mortgage interest rates . . . . .	199.0	211.9	216.0	219.5	224.0	226.4	229.4	199.6	212.3	216.7	220.3	224.9	227.2	230.3
Maintenance and repairs . . . . .	287.6	302.8	306.1	309.3	312.9	315.5	319.3	285.1	299.9	302.7	304.5	307.3	308.2	316.2
Maintenance and repair services . . . . .	312.1	328.7	332.6	337.0	341.2	344.4	349.0	309.0	327.7	331.3	334.1	337.6	338.7	350.5
Maintenance and repair commodities . . . . .	230.3	242.4	243.9	244.4	246.3	247.6	249.3	231.3	238.6	239.9	239.7	241.1	241.5	242.4
Paint and wallpaper, supplies, tools, and equipment (12/77=100) . . . . .	133.4	141.6	143.7	143.4	143.9	145.3	146.7	132.2	136.9	138.5	136.8	137.7	138.4	138.2
Lumber, awnings, glass, and masonry (12/77=100) . . . . .	119.1	124.0	123.3	124.3	125.1	124.7	125.0	119.3	122.3	122.4	123.1	123.7	122.7	123.0
Plumbing, electrical, heating, and cooling supplies (12/77=100) . . . . .	121.1	127.3	127.6	127.9	130.7	131.2	132.7	125.9	127.0	127.8	127.9	128.1	128.5	130.1
Miscellaneous supplies and equipment (12/77=100) . . . . .	120.1	125.2	125.9	126.4	127.6	128.5	129.2	122.5	127.8	128.8	129.9	130.8	131.7	132.5
<b>Fuel and other utilities</b> . . . . .	285.5	304.5	308.4	310.5	314.9	320.2	325.1	286.1	305.6	309.4	311.4	315.7	321.2	326.4
<b>Fuels</b> . . . . .	360.8	387.4	393.7	396.5	403.3	411.7	417.2	360.3	387.3	393.4	396.2	402.5	411.2	417.0
Fuel oil, coal, and bottled gas . . . . .	560.4	675.6	693.4	690.6	685.8	682.0	677.9	561.9	678.5	696.3	693.7	688.6	685.1	681.1
Fuel oil . . . . .	585.1	712.0	730.9	727.0	720.6	715.7	711.0	585.6	714.2	733.2	729.4	723.1	718.4	713.8
Other fuels (6/78=100) . . . . .	140.4	157.5	161.5	162.5	163.6	164.3	164.0	142.1	159.4	162.9	164.2	164.7	165.5	165.4
Gas (piped) and electricity . . . . .	314.3	322.9	326.7	330.6	339.6	350.2	357.6	313.5	322.1	325.9	329.6	338.1	349.0	356.7
Electricity . . . . .	267.4	271.3	273.9	277.3	281.9	296.7	306.2	267.6	271.1	273.5	276.8	281.2	296.6	306.2
Utility (piped) gas . . . . .	371.8	389.0	395.2	399.4	416.5	416.9	418.6	368.6	386.8	392.8	397.2	413.0	413.2	415.8

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers						Urban Wage Earners and Clerical Workers (revised)							
	1980	1981					1980	1981						
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
<b>HOUSING—Continued</b>														
<b>Fuel and other utilities—Continued</b>														
Other utilities and public services .....	165.9	173.6	174.0	175.1	176.2	177.1	180.8	165.9	173.9	174.4	175.4	176.6	177.3	181.3
Telephone services .....	136.3	142.4	142.5	143.4	144.0	143.5	147.2	136.1	142.5	142.6	143.4	144.1	143.6	147.5
Local charges (12/77 = 100) .....	105.4	113.5	113.6	114.8	115.5	114.9	116.7	105.2	113.6	113.7	114.9	115.7	115.1	116.9
Interstate toll calls (12/77 = 100) .....	101.6	101.8	101.8	101.8	101.8	101.8	109.1	101.6	101.9	101.9	101.9	101.9	101.9	109.6
Intrastate toll calls (12/77 = 100) .....	99.5	101.2	101.2	101.4	101.7	101.5	101.5	99.3	101.0	101.0	101.2	101.5	101.3	101.3
Water and sewerage maintenance .....	261.3	274.7	277.1	278.4	282.3	291.2	294.0	262.4	276.3	279.0	280.3	284.7	292.5	295.8
<b>Household furnishings and operations</b> .....	206.2	214.9	216.9	219.2	220.1	221.1	222.4	203.5	211.7	213.7	215.9	216.8	217.8	219.1
<b>Housefurnishings</b> .....	174.7	180.8	182.6	183.9	184.2	185.2	186.0	172.9	178.5	180.2	181.6	182.1	182.8	184.1
Textile housefurnishings .....	188.2	195.1	199.8	200.5	198.3	202.5	202.9	188.7	196.9	201.4	202.9	202.3	204.4	206.2
Household linens (12/77 = 100) .....	114.6	118.6	123.1	123.0	122.3	125.1	123.3	114.8	121.4	124.1	125.0	124.7	125.7	126.0
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100) .....	120.2	124.8	126.1	127.1	125.0	127.4	129.8	121.0	124.4	127.2	128.2	127.7	129.5	131.5
Furniture and bedding .....	192.8	199.3	201.6	203.7	204.2	204.6	206.0	197.7	195.6	198.0	200.0	200.6	200.1	202.3
Bedroom furniture (12/77 = 100) .....	125.4	131.3	133.2	134.5	133.4	134.6	135.0	122.6	127.7	129.4	130.7	129.2	129.2	130.7
Sofas (12/77 = 100) .....	112.2	114.5	115.8	116.5	117.0	116.2	117.6	111.7	113.2	114.1	114.9	115.8	116.0	116.2
Living room chairs and tables (12/77 = 100) .....	110.7	115.9	116.5	116.6	117.5	116.9	117.9	111.3	115.2	116.7	117.6	119.1	118.2	119.5
Other furniture (12/77 = 100) .....	126.6	129.1	130.8	133.4	134.7	135.4	136.2	123.0	126.6	128.3	130.1	131.2	130.5	132.9
Appliances including TV and sound equipment .....	140.5	143.9	144.2	145.3	145.5	146.3	147.1	140.1	142.9	143.4	144.2	144.4	145.6	146.3
Television and sound equipment (12/77 = 100) .....	105.8	107.9	108.0	108.6	108.3	108.2	108.8	105.0	106.6	106.4	107.1	106.9	107.3	107.7
Television .....	104.4	105.7	105.6	106.0	105.4	105.3	105.6	102.7	104.2	104.3	104.7	104.4	104.3	104.5
Sound equipment (12/77 = 100) .....	108.2	111.0	111.2	112.1	112.1	111.9	112.7	108.0	109.6	109.3	110.2	110.1	110.9	111.4
Household appliances .....	163.7	168.2	168.9	170.4	171.3	173.2	174.2	163.8	167.8	169.0	169.9	170.6	172.6	173.6
Refrigerators and home freezers .....	163.6	168.4	168.5	170.6	170.9	172.4	174.2	166.4	172.3	172.7	174.7	175.8	177.1	178.1
Laundry equipment (12/77 = 100) .....	119.6	123.7	124.5	126.1	126.2	128.0	128.1	118.7	122.8	124.3	125.7	125.3	127.1	128.3
Other household appliances (12/77 = 100) .....	112.6	115.4	115.9	116.6	117.6	118.9	119.6	112.1	113.7	114.5	114.4	115.2	116.6	117.1
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100) .....	111.6	115.1	115.1	115.8	117.2	118.4	119.2	112.8	114.2	115.2	113.9	115.1	116.5	117.1
Office machines, small electric appliances, and air conditioners (12/77 = 100) .....	113.8	115.7	116.9	117.4	118.0	119.4	120.1	111.3	113.1	113.7	115.0	115.3	116.7	117.1
Other household equipment (12/77 = 100) .....	121.3	127.9	129.1	130.0	130.7	131.0	131.2	119.7	125.6	126.9	127.9	129.0	129.3	129.8
Floor and window coverings, infants' laundry, cleaning, and outdoor equipment (12/77 = 100) .....	120.8	128.7	130.7	131.4	132.2	132.1	132.4	114.7	120.8	123.2	124.4	125.1	125.3	127.1
Clocks, lamps, and decor items (12/77 = 100) .....	119.0	124.1	125.7	125.6	124.4	124.6	125.0	116.6	121.7	121.7	120.9	120.9	121.9	122.9
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100) .....	126.4	134.8	135.6	137.1	138.8	139.5	139.5	124.0	131.0	132.1	134.1	136.0	136.0	136.4
Lawn equipment, power tools, and other hardware (12/77 = 100) .....	115.9	119.9	120.8	121.5	122.5	122.6	122.7	118.7	123.8	125.1	125.9	127.0	127.1	126.7
<b>Housekeeping supplies</b> .....	247.3	262.8	264.2	266.9	269.0	269.8	271.5	245.2	260.1	261.2	263.4	265.5	266.9	267.9
Soaps and detergents .....	237.2	256.2	255.3	259.4	262.6	266.0	265.5	234.4	253.8	256.7	260.2	263.6	263.1	263.6
Other laundry and cleaning products (12/77 = 100) .....	122.3	129.3	129.7	131.0	132.8	133.4	134.8	122.3	129.6	130.3	130.4	131.5	132.3	133.6
Cleaning and toilet tissue, paper towels and napkins (12/77 = 100) .....	130.2	138.4	137.9	138.4	137.8	137.6	138.8	132.7	139.2	138.1	138.5	137.9	138.2	139.0
Stationery, stationery supplies, and gift wrap (12/77 = 100) .....	117.6	121.4	122.3	123.1	125.1	125.8	126.6	117.9	122.4	123.7	124.8	126.8	127.2	127.9
Miscellaneous household products (12/77 = 100) .....	125.4	135.9	137.3	138.1	138.4	139.5	140.5	123.5	132.2	133.2	134.5	135.0	136.1	136.6
Lawn and garden supplies (12/77 = 100) .....	127.6	134.0	136.6	139.1	140.6	138.4	138.8	120.7	126.1	125.5	131.1	132.4	131.3	131.7
<b>Housekeeping services</b> .....	270.4	281.6	284.8	289.9	291.6	292.9	295.3	268.1	279.4	283.3	288.6	289.9	291.7	293.4
Postage .....	257.3	257.3	274.3	308.0	308.0	308.0	308.0	257.3	257.3	274.2	308.1	308.1	308.1	308.1
Moving, storage, freight, household laundry, and drycleaning services (12/77 = 100) .....	131.0	138.2	139.0	140.7	141.6	141.9	143.1	129.7	137.8	139.0	140.2	140.7	141.8	142.8
Appliance and furniture repair (12/77 = 100) .....	118.7	123.6	124.5	125.2	125.9	126.3	127.8	117.8	122.4	123.8	124.3	124.6	125.4	126.4
<b>APPAREL AND UPKEEP</b> .....	176.2	182.0	185.1	186.4	186.4	185.8	184.7	175.4	181.8	184.3	186.0	186.2	185.8	185.5
<b>Apparel commodities</b> .....	168.5	173.2	176.3	177.6	177.2	176.4	175.1	168.0	173.3	175.8	177.5	177.6	177.0	176.6
Apparel commodities less footwear .....	165.0	169.6	172.7	174.0	173.3	172.5	171.2	164.4	169.6	172.3	173.9	173.8	173.0	172.8
Men's and boys' .....	165.9	171.6	175.0	175.6	176.8	176.6	175.6	167.2	172.2	174.9	176.1	177.3	177.2	176.9
Men's (12/77 = 100) .....	103.9	107.8	110.2	110.5	111.2	111.0	110.3	104.7	108.2	110.1	110.9	111.8	111.6	111.6
Suits, sport coats, and jackets (12/77 = 100) .....	97.1	100.5	103.2	104.1	104.7	104.3	102.5	93.2	96.1	98.5	98.3	99.3	98.4	97.4
Coats and jackets (12/77 = 100) .....	96.0	95.6	97.9	98.1	97.9	98.1	96.7	97.1	96.0	98.9	99.6	100.5	101.2	100.8
Furnishings and special clothing (12/77 = 100) .....	118.4	125.3	127.2	127.5	129.2	129.7	129.6	115.7	120.2	121.5	122.7	123.9	124.1	124.8
Shirts (12/77 = 100) .....	110.7	114.8	118.0	117.0	118.3	117.9	115.5	111.2	116.8	119.2	119.5	120.3	120.4	118.8
Dungarees, jeans, and trousers (12/77 = 100) .....	99.2	102.7	104.7	105.4	105.5	105.0	106.5	104.8	108.7	110.0	111.5	112.2	111.8	113.2
Boys' (12/77 = 100) .....	110.0	112.6	113.7	114.5	115.1	115.4	115.1	110.0	111.9	112.9	113.9	114.2	114.3	113.6
Coats, jackets, sweaters, and shirts (12/77 = 100) .....	104.4	104.3	106.5	107.2	108.8	108.7	107.0	107.4	107.0	109.5	110.9	111.8	109.8	107.6
Furnishings (12/77 = 100) .....	114.7	119.1	121.2	121.5	121.4	123.9	124.5	113.3	116.1	117.4	118.2	117.4	119.5	120.6
Suits, trousers, sport coats, and jackets (12/77 = 100) .....	112.6	116.6	116.5	117.4	117.5	117.3	117.7	110.9	114.2	113.9	114.8	114.8	115.9	115.6
Women's and girls' .....	150.6	153.4	157.5	158.8	157.2	155.4	153.5	149.9	155.4	158.9	160.7	160.0	158.1	157.9
Women's (12/77 = 100) .....	99.8	101.9	104.4	105.0	103.9	102.7	101.2	99.6	103.5	105.5	106.7	106.2	104.9	104.5
Coats and jackets .....	158.8	160.7	157.9	157.6	152.8	149.5	153.9	157.5	159.1	159.6	156.8	155.8	148.9	159.0
Dresses .....	153.9	156.9	166.4	167.8	164.8	163.7	162.2	146.2	150.5	154.3	159.8	159.7	156.6	154.1
Separates and sportswear (12/77 = 100) .....	96.8	97.1	99.3	100.2	99.0	98.0	95.1	97.1	99.7	101.6	102.6	101.5	101.0	99.1
Underwear, nightwear, and hosiery (12/77 = 100) .....	113.2	116.4	117.8	119.3	119.7	119.8	120.0	112.8	116.0	117.7	119.1	119.5	120.0	120.2
Suits (12/77 = 100) .....	85.5	90.0	93.0	91.6	90.7	86.3	78.6	90.1	103.6	109.5	108.0	106.9	103.6	100.6
Girls' (12/77 = 100) .....	102.0	102.8	106.4	106.6	107.9	106.4	106.5	100.0	102.7	106.4	107.8	107.1	106.2	106.9
Coats, jackets, dresses, and suits (12/77 = 100) .....	98.9	94.4	101.2	106.4	104.1	100.4	100.0	95.6	93.5	98.4	101.3	98.8	98.1	98.9
Separates and sportswear (12/77 = 100) .....	99.7	104.2	106.2	106.8	106.9	105.9	106.1	98.2	105.8	109.1	109.5	109.6	108.1	108.9
Underwear, nightwear, hosiery, and accessories (12/77 = 100) .....	111.4	113.9	115.6	115.5	116.1	117.2	117.6	110.4	112.5	114.6	115.4	115.9	116.2	116.3

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
<b>APPAREL AND UPKEEP—Continued</b>														
<b>Apparel commodities—Continued</b>														
Apparel commodities less footwear—Continued														
Infants' and toddlers'	243.0	254.3	255.3	259.2	256.9	260.0	259.8	249.2	264.0	266.4	269.3	269.9	273.0	272.9
Other apparel commodities	205.5	212.3	212.2	214.1	212.1	212.2	212.4	200.8	204.4	204.5	205.6	204.1	204.8	204.8
Sewing materials and notions (12/77 = 100)	109.3	112.2	113.3	114.8	114.3	114.5	115.3	108.8	112.2	113.3	114.3	113.4	113.2	113.6
Jewelry and luggage (12/77 = 100)	142.8	147.9	147.3	148.4	146.8	146.8	146.6	139.4	141.3	140.9	141.4	140.5	141.2	141.0
Footwear	189.5	194.9	197.4	199.3	201.0	200.4	199.0	189.3	194.9	195.9	194.5	200.0	200.6	199.2
Men's (12/77 = 100)	121.1	125.0	125.2	126.8	127.8	127.7	128.0	123.2	125.7	125.4	128.0	128.7	129.5	129.5
Boys' and girls' (12/77 = 100)	123.5	125.3	127.6	128.2	129.3	129.1	130.1	123.1	126.2	127.3	126.7	127.7	128.6	128.7
Women's (12/77 = 100)	113.8	117.9	120.0	121.3	122.4	121.6	118.7	111.3	115.9	117.0	119.3	120.5	120.2	117.8
<b>Apparel services</b>	234.4	249.9	252.4	254.3	256.4	257.8	258.9	232.6	248.7	251.5	252.7	254.2	255.7	256.3
Laundry and drycleaning other than coin operated (12/77 = 100)	137.7	147.6	149.6	150.9	152.2	153.2	153.8	137.5	147.3	149.3	150.4	151.5	152.5	153.1
Other apparel services (12/77 = 100)	126.3	133.3	133.7	134.5	135.6	136.0	136.7	124.7	132.9	133.9	134.0	134.5	135.0	135.1
<b>TRANSPORTATION</b>	251.0	270.9	273.5	275.3	277.8	279.9	282.6	251.9	272.1	274.4	276.3	278.9	281.0	283.9
<b>Private</b>	250.5	269.4	271.7	273.4	276.0	277.9	279.6	251.5	271.0	273.2	275.1	277.7	279.7	281.6
New cars	179.2	184.8	182.9	186.1	190.9	192.2	192.5	180.0	185.0	182.7	186.2	191.2	192.5	192.9
Used cars	203.4	234.3	235.4	239.1	245.2	252.9	260.3	203.4	234.4	235.4	239.1	245.2	252.9	260.3
Gasoline	376.7	410.8	420.7	419.3	416.5	414.4	412.9	377.8	412.5	422.3	420.8	417.7	415.6	414.0
Automobile maintenance and repair	269.0	285.4	287.7	289.0	290.8	291.9	293.5	269.7	285.4	288.2	289.7	291.3	292.6	293.4
Body work (12/77 = 100)	131.8	139.2	140.3	140.8	141.5	142.3	144.1	131.3	139.2	140.2	140.7	141.3	142.2	143.3
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100)	128.1	136.8	137.7	138.0	138.7	138.9	139.9	129.9	138.3	140.2	140.5	141.2	141.7	141.4
Maintenance and servicing (12/77 = 100)	172.3	133.7	134.8	135.5	136.5	137.1	137.4	127.2	133.5	134.7	135.7	136.4	136.9	137.3
Power plant repair (12/77 = 100)	126.4	135.5	137.0	137.8	138.6	139.2	139.9	126.6	134.7	135.9	136.7	137.7	138.3	139.1
Other private transportation	224.5	234.2	234.7	236.3	238.9	241.0	242.9	226.7	236.9	237.3	239.2	241.9	243.9	246.0
Other private transportation commodities	197.7	205.8	206.2	208.1	208.6	208.5	208.8	200.1	207.5	208.0	210.4	211.7	211.1	210.8
Motor oil, coolant, and other products (12/77 = 100)	136.3	141.6	141.6	143.5	143.1	144.5	144.8	135.5	139.0	139.8	140.5	141.4	142.7	143.4
Automobile parts and equipment (12/77 = 100)	126.6	131.8	132.1	133.2	133.6	133.4	133.6	128.4	133.4	133.7	135.4	136.1	135.5	135.2
Tires	174.9	183.5	184.1	185.8	186.4	186.1	185.6	178.9	186.6	186.9	189.6	191.1	189.9	188.4
Other parts and equipment (12/77 = 100)	126.6	129.3	129.2	130.1	130.4	130.2	131.7	125.7	129.3	129.5	130.8	130.7	130.7	132.2
Other private transportation services	233.8	244.0	244.6	246.2	249.4	252.0	254.3	236.0	247.0	247.4	249.2	252.4	255.0	257.7
Automobile insurance	249.1	253.7	254.4	255.7	256.8	257.4	259.8	248.7	253.2	253.9	255.2	256.3	256.9	259.6
Automobile finance charges (12/77 = 100)	149.7	165.1	164.3	166.5	172.9	178.5	180.9	149.1	163.9	163.4	166.3	172.5	177.2	179.9
Automobile rental, registration, and other fees (12/77 = 100)	113.3	116.7	118.2	118.2	117.7	117.8	118.0	114.7	119.3	119.9	119.3	118.1	118.2	118.4
State registration	146.4	146.9	146.9	146.9	147.5	148.0	147.9	146.5	147.0	147.0	147.0	147.7	148.1	147.9
Drivers' licenses (12/77 = 100)	104.9	105.4	105.4	105.5	105.5	105.8	105.9	104.6	105.1	105.1	105.2	105.2	105.6	105.6
Vehicle inspection (12/77 = 100)	122.6	125.8	126.1	126.0	125.8	125.7	128.6	123.3	126.6	126.7	126.6	126.5	126.5	129.3
Other vehicle related fees (12/77 = 100)	126.8	134.7	138.4	138.4	136.3	136.3	136.6	134.6	147.2	148.9	147.1	142.8	142.6	143.1
<b>Public</b>	250.5	288.1	293.9	297.2	297.7	303.9	323.1	245.8	280.6	285.1	287.7	288.2	293.6	317.7
Airline fare	276.9	334.1	343.7	348.6	348.8	360.7	367.3	275.5	332.7	342.3	346.6	346.7	359.3	365.6
Intercity bus fare	294.2	312.8	323.2	329.1	333.4	337.6	343.5	293.9	312.2	323.9	329.2	333.0	336.8	343.6
Intracity mass transit	222.6	248.4	250.8	251.7	251.9	253.5	290.7	221.8	247.8	249.1	249.8	249.9	251.5	291.0
Taxi fare	263.3	271.4	273.8	279.9	280.4	281.7	287.1	269.2	277.7	280.5	284.7	287.9	289.2	295.7
Intercity train fare	255.3	276.5	276.7	277.2	296.7	304.1	304.6	255.4	276.9	277.1	277.5	298.5	304.6	304.9
<b>MEDICAL CARE</b>	266.6	282.6	284.7	287.0	289.0	291.5	295.6	267.8	284.4	287.0	289.1	290.8	292.9	295.4
<b>Medical care commodities</b>	169.1	179.2	180.7	182.4	184.7	186.3	187.7	169.7	179.6	181.2	183.4	185.9	187.3	189.2
Prescription drugs	155.6	165.0	166.5	168.5	170.4	172.3	173.7	156.6	165.3	166.8	169.2	171.6	173.5	175.0
Anti-infective drugs (12/77 = 100)	121.2	129.2	130.5	130.2	130.3	132.2	133.9	122.3	129.5	131.0	132.4	132.7	134.3	135.8
Tranquilizers and sedatives (12/77 = 100)	125.5	131.9	132.8	134.4	136.0	137.3	138.4	124.7	130.7	131.5	133.3	135.2	136.5	137.6
Circulatories and diuretics (12/77 = 100)	115.4	121.9	122.2	123.9	124.9	125.5	126.5	117.6	122.9	123.7	125.3	126.1	126.8	127.9
Hormones, diabetic drugs, biologicals, and prescription and supplies (12/77 = 100)	135.5	147.4	148.2	151.2	154.6	157.2	158.1	134.8	146.5	147.8	150.9	154.5	158.1	158.2
Pain and symptom control drugs (12/77 = 100)	124.5	130.9	132.7	134.5	136.5	137.7	139.1	126.1	133.3	134.1	135.8	138.2	138.9	141.8
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100)	119.3	124.5	126.3	128.6	130.2	131.1	131.8	120.9	125.2	126.5	128.8	131.2	132.0	132.5
Nonprescription drugs and medical supplies (12/77 = 100)	121.7	128.9	129.9	130.9	132.6	133.5	134.5	122.0	129.4	130.5	131.9	133.6	134.4	135.8
Eyeglasses (12/77 = 100)	118.7	123.1	124.6	125.1	125.3	125.3	125.8	117.8	122.3	122.6	123.4	124.1	124.7	125.0
Internal and respiratory over-the-counter drugs	189.1	202.7	204.2	205.9	209.1	211.5	213.1	190.1	203.0	205.5	208.0	211.0	212.6	215.4
Nonprescription medical equipment and supplies (12/77 = 100)	119.1	124.5	125.0	126.2	128.6	128.6	129.9	119.0	126.5	127.1	128.2	130.5	130.7	132.2
<b>Medical care services</b>	288.0	305.2	307.5	309.8	311.7	314.4	319.2	289.3	307.4	310.2	312.2	313.6	315.8	318.5
Professional services	253.5	267.2	269.6	271.7	273.8	275.8	280.4	256.1	271.6	274.2	276.2	278.0	279.4	280.8
Physicians' services	270.9	287.7	290.3	292.2	295.5	297.5	300.7	275.4	293.9	296.3	297.9	300.3	302.4	304.7
Dental services	241.1	252.8	254.9	257.1	257.7	260.2	266.5	243.0	257.0	259.8	262.2	263.3	264.0	264.6
Other professional services (12/77 = 100)	125.0	130.0	131.5	132.6	133.7	134.2	136.8	123.6	128.5	129.9	131.3	132.1	132.6	132.7
Other medical care services	329.7	351.1	353.4	355.9	357.6	361.1	366.1	329.8	351.3	354.4	356.2	357.1	360.3	364.6
Hospital and other medical services (12/77 = 100)	133.4	146.1	147.1	148.1	148.3	149.6	151.7	132.6	145.2	146.7	147.3	147.3	148.6	150.3
Hospital room	418.2	458.2	460.9	465.0	465.1	470.4	478.0	414.9	455.9	459.2	461.4	461.3	467.1	472.2
Other hospital and medical care services (12/77 = 100)	132.8	145.5	146.7	147.3	147.6	148.7	150.4	132.3	144.4	146.3	146.8	146.8	147.6	149.4

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

[1967=100 unless otherwise specified]

General summary	All Urban Consumers						Urban Wage Earners and Clerical Workers (revised)							
	1980	1981					1980	1981						
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
<b>ENTERTAINMENT</b>	206.6	216.7	218.2	219.2	220.3	220.8	221.1	204.4	215.0	216.1	217.0	217.7	218.3	218.7
Entertainment commodities	209.3	219.7	222.1	223.6	225.0	225.4	225.5	204.8	216.2	218.0	219.4	220.4	220.8	221.1
Reading materials (12/77 = 100)	123.0	130.9	133.2	134.1	135.6	136.2	136.0	122.5	130.7	133.0	134.1	135.6	136.1	135.9
Newspapers	240.0	253.8	256.6	262.5	264.1	264.9	265.0	239.3	254.0	256.7	262.5	264.0	264.8	265.0
Magazines, periodicals, and books (12/77 = 100)	124.1	132.9	136.2	134.8	137.1	137.9	137.3	123.7	132.9	136.3	134.8	137.3	138.2	137.4
Sporting goods and equipment (12/77 = 100)	119.5	124.7	126.1	127.5	127.2	126.8	127.0	114.2	119.3	120.3	120.9	120.8	120.4	120.6
Sport vehicles (12/77 = 100)	120.7	126.5	128.5	130.4	129.5	128.7	129.0	112.5	118.1	119.5	120.0	119.3	118.4	118.5
Indoor and warm weather sport equipment (12/77 = 100)	112.4	115.9	116.2	116.7	117.4	116.9	117.7	110.6	115.3	115.2	115.4	116.4	116.9	117.0
Bicycles	181.6	187.2	188.4	188.3	190.4	191.0	191.0	181.4	188.3	189.4	189.7	191.6	192.0	192.1
Other sporting goods and equipment (12/77 = 100)	115.0	120.6	121.2	122.6	122.4	122.7	122.7	116.1	119.2	119.3	121.1	121.5	122.2	122.9
Toys, hobbies, and other entertainment (12/77 = 100)	121.0	126.3	127.2	127.8	128.8	129.3	129.3	119.1	125.8	126.3	127.2	127.7	128.1	128.5
Toys, hobbies, and music equipment (12/77 = 100)	119.0	124.7	125.6	126.2	127.6	127.9	127.9	115.9	123.0	123.1	124.0	125.0	125.3	125.3
Photographic supplies and equipment (12/77 = 100)	122.8	122.6	124.0	125.4	125.8	126.2	125.7	122.4	124.4	125.5	126.7	126.1	126.5	127.0
Pet supplies and expense (12/77 = 100)	123.2	132.0	132.3	132.4	133.3	134.2	134.5	122.9	131.9	132.8	133.2	133.6	134.3	135.1
<b>Entertainment services</b>	203.1	213.0	213.0	213.4	214.0	214.7	215.2	204.8	213.9	213.8	213.9	214.2	215.1	215.8
Fees for participant sports (12/77 = 100)	122.1	129.4	129.8	130.7	130.7	131.3	131.6	121.9	129.0	129.6	130.2	130.5	131.4	131.6
Admissions (12/77 = 100)	121.3	125.3	125.3	124.5	125.1	124.9	125.9	123.2	126.2	125.9	124.7	125.0	124.8	125.7
Other entertainment services (12/77 = 100)	117.4	122.0	121.0	121.1	121.7	122.2	121.7	118.8	123.0	121.7	122.4	122.5	123.4	123.2
<b>OTHER GOODS AND SERVICES</b>	213.5	227.4	228.7	229.9	232.2	233.4	234.4	212.9	225.6	226.8	227.9	230.4	231.4	232.4
<b>Tobacco products</b>	203.8	212.3	212.5	213.3	218.2	219.1	219.3	204.0	211.9	212.4	213.2	217.8	218.4	218.4
Cigarettes	206.4	214.8	214.8	215.5	220.8	221.4	221.6	206.8	214.5	214.9	215.5	220.3	220.8	220.7
Other tobacco products and smoking accessories (12/77 = 100)	120.7	126.5	128.0	129.6	130.4	132.3	132.5	120.3	126.4	128.1	130.0	131.3	132.7	133.4
<b>Personal care</b>	214.4	224.6	226.9	228.7	230.5	232.1	233.4	213.1	223.2	225.1	226.4	228.4	229.7	231.2
Toilet goods and personal care appliances	207.9	219.5	222.4	223.9	226.6	228.6	228.7	206.6	218.5	220.9	222.5	225.5	227.2	228.4
Products for the hair, hairpieces, and wigs (12/77 = 100)	121.4	128.3	131.4	131.9	132.4	132.8	133.9	120.5	126.7	128.4	128.8	130.1	130.4	131.7
Dental and shaving products (12/77 = 100)	124.0	132.9	135.3	136.6	138.6	139.4	139.0	122.0	131.2	133.3	135.1	136.1	136.6	137.1
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100)	119.1	123.2	123.9	125.3	127.8	129.0	127.7	117.9	122.8	123.4	124.4	126.2	128.0	128.3
Other toilet goods and small personal care appliances (12/77 = 100)	119.4	127.5	128.3	128.4	129.8	132.0	133.0	120.4	129.0	130.7	131.3	134.0	135.4	135.9
Personal care services	220.9	230.0	231.7	233.7	234.7	236.0	238.4	219.8	228.1	229.4	230.5	231.5	232.5	234.4
Beauty parlor services for women	222.1	231.7	233.6	236.0	236.4	237.7	240.5	221.0	229.4	230.8	231.7	232.0	232.7	235.1
Haircuts and other barber shop services for men (12/77 = 100)	123.9	128.5	129.2	129.9	131.1	131.9	132.7	123.0	127.6	128.4	129.1	130.5	131.3	131.8
<b>Personal and educational expenses</b>	229.9	254.4	255.2	256.2	256.8	257.8	259.2	230.3	255.0	256.0	257.1	257.7	258.5	260.1
Schoolbooks and supplies	207.2	229.8	230.5	230.8	230.8	230.9	231.3	210.9	233.6	234.4	234.6	234.7	234.7	235.2
Personal and educational services	235.5	260.4	261.2	262.4	263.0	264.2	265.8	235.4	260.6	261.6	262.9	263.6	264.6	266.4
Tuition and other school fees	118.7	132.7	132.8	132.8	132.8	132.9	133.5	118.8	132.9	133.0	133.0	133.0	133.1	133.7
College tuition (12/77 = 100)	118.0	132.1	132.3	132.3	132.3	132.4	133.0	118.0	132.1	132.3	132.3	132.3	132.4	132.9
Elementary and high school tuition (12/77 = 100)	120.9	134.4	134.4	134.4	134.4	134.4	135.3	120.7	134.3	134.4	134.4	134.4	134.4	135.4
Personal expenses (12/77 = 100)	129.5	137.1	138.7	141.8	143.6	146.3	147.9	127.4	136.3	138.1	141.1	142.8	144.8	146.6
<b>Special indexes:</b>														
Gasoline, motor oil, coolant, and other products	371.5	404.8	414.5	413.2	410.4	408.4	407.1	372.5	406.3	415.9	414.5	411.5	409.5	408.0
Insurance and finance	342.3	370.7	373.6	378.1	386.6	393.4	402.7	342.6	370.4	373.0	377.6	386.1	393.1	402.4
Utilities and public transportation	249.1	262.3	265.2	267.9	272.4	278.5	286.5	248.4	261.0	263.6	266.1	270.6	276.7	285.6
Housekeeping and home maintenance services	300.1	314.6	318.3	323.1	326.2	328.6	332.3	297.5	313.4	317.2	321.1	323.8	325.1	322.8

<sup>1</sup> Not available.

c=corrected.

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

[December 1977 = 100]

Category and group	Size class A (1.25 million or more)			Size class B (385,000-1.250 million)			Size class C (75,000-385,000)			Size class D (75,000 or less)		
	1981			1981			1981			1981		
	Feb.	Apr.	June	Feb.	Apr.	June	Feb.	Apr.	June	Feb.	Apr.	June
<b>Northeast</b>												
<b>EXPENDITURE CATEGORY</b>												
All items .....	135.7	137.3	139.1	143.2	144.4	146.8	146.6	149.8	152.5	141.6	143.4	146.3
Food and beverages .....	135.2	136.8	137.5	137.6	138.3	139.2	139.8	141.4	141.1	134.8	135.2	136.1
Housing .....	138.0	139.1	142.1	149.0	149.1	153.2	156.3	161.5	166.0	147.5	149.7	154.0
Apparel and upkeep .....	114.9	116.9	116.2	114.0	118.2	118.9	119.5	121.7	123.1	119.1	123.3	122.9
Transportation .....	147.3	149.7	151.5	155.0	157.3	159.1	153.0	154.9	158.4	151.0	153.0	156.6
Medical care .....	130.5	132.9	134.8	131.2	132.9	134.0	132.1	133.8	137.8	134.4	135.9	137.2
Entertainment .....	124.6	126.3	127.9	127.5	130.2	129.6	124.2	125.8	125.9	126.7	128.5	130.2
Other goods and services .....	123.7	124.5	125.9	128.5	130.4	132.1	131.1	132.6	134.1	126.5	127.1	128.8
<b>COMMODITY AND SERVICE GROUP</b>												
Commodities .....	137.0	137.9	139.0	144.3	145.0	146.5	144.6	147.1	148.1	141.7	143.3	145.0
Commodities less food and beverages .....	138.2	138.7	139.9	147.6	148.3	150.0	146.8	149.7	151.4	145.0	147.1	149.3
Services .....	134.0	136.4	139.4	141.5	143.4	147.2	149.8	154.1	159.7	141.4	143.6	148.3
<b>North Central region</b>												
<b>EXPENDITURE CATEGORY</b>												
All items .....	144.0	145.9	150.0	142.8	143.5	146.6	139.7	140.2	142.3	139.6	141.1	143.1
Food and beverages .....	137.1	137.5	138.1	136.4	136.6	137.5	137.0	137.8	139.6	139.6	140.5	140.7
Housing .....	152.7	155.0	162.9	147.7	147.4	152.6	141.5	140.5	143.5	140.5	142.1	144.0
Apparel and upkeep .....	109.4	112.3	110.8	116.9	119.8	118.9	114.5	116.4	115.3	114.1	115.6	118.6
Transportation .....	151.8	153.9	156.4	152.3	154.3	157.3	153.1	155.1	157.0	150.3	152.6	155.9
Medical care .....	134.6	137.1	139.1	136.2	138.1	139.9	136.7	138.6	140.4	140.1	142.1	144.0
Entertainment .....	127.5	130.2	130.6	124.2	125.3	124.4	126.8	129.2	129.8	124.8	125.7	126.9
Other goods and services .....	126.3	127.9	130.1	132.7	134.0	136.0	126.4	127.9	129.3	131.1	131.7	134.3
<b>COMMODITY AND SERVICE GROUP</b>												
Commodities .....	140.3	141.7	144.4	139.5	140.1	142.5	138.2	138.6	139.9	136.0	136.9	138.0
Commodities less food and beverages .....	141.8	143.7	147.4	140.9	141.5	144.6	138.7	139.0	140.0	134.5	135.4	136.8
Services .....	149.4	152.1	158.3	148.1	149.0	153.2	142.2	142.7	146.2	145.3	147.8	151.1
<b>South</b>												
<b>EXPENDITURE CATEGORY</b>												
All items .....	142.1	144.1	146.2	144.9	146.7	148.7	142.1	143.7	145.9	138.8	141.8	144.8
Food and beverages .....	138.8	139.0	138.2	138.6	139.8	139.4	138.4	139.0	138.7	140.2	142.3	141.9
Housing .....	146.1	148.7	152.3	151.5	153.0	156.4	146.6	148.3	151.9	138.4	142.4	147.5
Apparel and upkeep .....	119.3	121.1	121.1	117.1	121.3	119.9	113.0	115.5	115.3	105.6	109.4	109.5
Transportation .....	152.9	155.7	158.1	153.4	155.9	158.3	152.2	153.8	156.6	151.4	154.3	157.7
Medical care .....	130.4	132.5	135.0	135.1	136.5	138.8	136.8	140.0	142.1	144.0	146.4	148.1
Entertainment .....	123.5	123.2	124.9	129.0	130.0	130.7	129.0	130.5	132.1	131.0	131.2	133.5
Other goods and services .....	129.4	131.3	133.1	131.0	132.0	134.1	128.6	129.7	131.5	130.5	131.6	134.1
<b>COMMODITY AND SERVICE GROUP</b>												
Commodities .....	140.1	141.5	142.1	140.8	142.3	143.2	139.1	140.1	141.3	138.4	140.7	142.1
Commodities less food and beverages .....	140.7	142.6	143.8	141.7	143.4	144.8	139.5	140.6	142.4	137.6	140.0	142.2
Services .....	144.8	147.6	152.1	151.2	153.3	157.0	146.6	149.2	153.1	139.3	143.6	149.0
<b>West</b>												
<b>EXPENDITURE CATEGORY</b>												
All items .....	142.6	145.7	147.5	144.0	146.7	149.1	141.2	142.1	143.9	141.0	143.6	146.9
Food and beverages .....	136.8	138.2	138.3	139.4	141.4	142.6	134.8	136.2	137.5	140.8	141.3	143.2
Housing .....	147.2	151.2	153.2	148.7	151.8	155.1	145.2	144.8	146.7	138.3	142.0	146.1
Apparel and upkeep .....	116.4	119.9	120.7	122.3	125.2	123.1	112.1	114.9	113.4	129.8	133.7	133.5
Transportation .....	150.8	154.2	157.4	151.9	154.9	157.5	152.6	155.6	158.7	154.1	156.0	159.3
Medical care .....	137.5	139.5	141.0	136.0	137.5	141.2	137.5	139.0	141.5	139.6	140.8	146.2
Entertainment .....	127.0	127.0	127.7	126.6	128.9	128.9	126.6	128.9	130.8	140.5	142.1	143.7
Other goods and services .....	129.1	131.8	134.8	131.4	133.3	134.7	126.8	128.6	130.2	131.5	133.0	137.8
<b>COMMODITY AND SERVICE GROUP</b>												
Commodities .....	137.3	139.5	140.5	140.0	142.2	143.4	137.1	139.1	140.2	139.7	141.6	144.7
Commodities less food and beverages .....	137.6	140.1	141.4	140.3	142.6	143.8	138.0	140.2	141.3	139.3	141.6	145.3
Services .....	149.6	154.0	156.8	149.4	152.9	156.8	146.9	146.4	149.2	142.9	146.5	150.1

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

[1967=100 unless otherwise specified]

Area <sup>1</sup>	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1980	1981						1980	1981					
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
U.S. city average <sup>2</sup>	247.8	263.2	265.1	266.8	269.0	271.3	274.4	248.0	263.5	265.2	266.8	269.1	271.4	274.6
Anchorage, Alaska (10/67=100)	228.4	...	241.1	...	244.6	...	246.1	224.8	...	236.2	...	240.1	...	241.7
Atlanta, Ga.	...	263.0	...	265.9	...	269.2	...	...	266.4	...	268.8	...	272.8	...
Baltimore, Md.	252.4	...	270.3	...	269.3	...	272.5	250.8	...	269.3	...	268.6	...	273.7
Boston, Mass.	240.9	...	262.3	...	263.6	...	266.3	240.9	...	261.8	...	263.6	...	266.5
Buffalo, N.Y.	...	251.4	...	254.6	...	257.2	...	...	249.7	...	252.7	...	256.1	...
Chicago, Ill.-Northwestern Ind.	246.8	259.6	259.7	263.7	264.5	269.1	272.7	247.0	258.8	258.9	263.0	263.9	267.9	271.7
Cincinnati, Ohio-Ky.-Ind.	256.7	...	266.1	...	271.7	...	273.3	259.1	...	267.7	...	273.3	...	276.3
Cleveland, Ohio	...	273.5	...	272.0	...	285.3	...	...	273.9	...	272.1	...	283.8	...
Dallas-Ft. Worth, Tex.	...	274.4	...	279.6	...	286.0	...	...	272.9	...	276.9	...	284.0	...
Denver-Boulder, Colo.	261.6	...	281.4	...	288.2	...	294.2	265.8	...	285.8	...	293.4	...	299.9
Detroit, Mich.	253.7	270.2	268.2	272.4	275.2	280.5	283.1	252.1	265.5	263.6	268.0	271.3	275.9	278.9
Honolulu, Hawaii	...	243.3	...	250.0	...	252.8	...	...	243.5	...	250.2	...	253.8	...
Houston, Tex.	...	281.5	...	286.4	...	292.9	...	...	277.7	...	283.1	...	289.4	...
Kansas City, Mo.-Kansas	...	261.9	...	265.4	...	270.5	...	...	260.1	...	264.3	...	269.1	...
Los Angeles-Long Beach, Anaheim, Calif.	248.7	261.6	263.3	265.5	267.3	267.9	272.2	251.5	265.0	266.5	269.1	270.7	271.7	276.3
Miami, Fla. (11/77=100)	133.6	...	140.0	...	143.2	...	146.1	134.7	...	141.7	...	144.8	...	143.7
Milwaukee, Wis.	251.6	...	269.9	...	278.5	...	285.6	255.9	...	274.6	...	283.5	...	291.2
Minneapolis-St. Paul, Minn.-Wis.	...	260.6	...	266.5	...	276.1	...	...	262.4	...	267.3	...	276.6	...
New York, N.Y.-Northeastern N.J.	238.9	252.7	253.9	255.4	256.7	258.6	262.5	238.4	252.7	253.7	254.8	255.9	257.9	262.3
Northeast, Pa. (Scranton)	239.8	...	257.6	...	259.9	...	266.0	243.2	...	260.6	...	263.3	...	269.0
Philadelphia, Pa.-N.J.	244.1	255.9	258.3	261.0	261.9	265.4	267.8	245.3	258.1	259.5	261.5	262.9	265.6	268.5
Pittsburgh, Pa.	...	265.5	...	265.7	...	271.3	...	...	266.4	...	267.3	...	273.0	...
Portland, Oreg.-Wash.	252.7	...	268.1	...	278.5	...	280.8	252.2	...	267.0	...	276.1	...	279.2
St. Louis, Mo.-Ill.	245.0	...	259.3	...	268.0	...	269.4	245.9	...	259.4	...	268.4	...	269.2
San Diego, Calif.	269.9	...	293.1	...	297.5	...	305.4	265.7	...	288.0	...	292.5	...	300.5
San Francisco-Oakland, Calif.	...	260.5	...	270.3	...	274.0	...	...	261.6	...	270.9	...	274.3	...
Seattle-Everett, Wash.	255.1	...	271.1	...	274.7	...	282.3	251.6	...	267.9	...	271.5	...	277.8
Washington, D.C.-Md.-Va.	247.2	...	262.3	...	264.7	...	267.1	248.7	...	264.2	...	267.7	...	271.4

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

Area is used for New York and Chicago.

<sup>2</sup>Average of 85 cities.

## 26. Producer Price Indexes, by stage of processing

[1967=100]

Commodity grouping	Annual average 1980	1980					1981							
		Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. <sup>1</sup>	May	June	July	Aug.
<b>FINISHED GOODS</b>														
Finished goods .....	247.0	251.4	251.4	255.4	256.2	257.2	260.9	263.3	266.0	r 268.5	268.9	269.9	271.3	271.2
Finished consumer goods .....	248.9	254.1	254.1	257.0	257.9	258.9	262.5	265.0	268.2	r 270.6	270.6	271.5	272.8	272.6
Finished consumer foods .....	239.5	246.5	247.4	248.0	248.9	249.3	251.0	251.3	252.6	r 251.9	252.0	253.1	256.9	255.5
Crude .....	237.2	247.0	259.8	237.8	250.5	254.8	257.9	265.6	279.7	r 279.3	262.3	255.8	262.4	256.5
Processed .....	237.8	244.4	244.3	246.9	246.7	246.7	248.4	247.9	248.1	r 247.4	249.1	250.8	254.4	253.4
Nondurable goods less foods .....	283.9	290.0	290.9	291.7	293.9	296.2	302.7	308.4	316.0	r 320.4	319.6	321.0	321.2	321.8
Durable goods .....	206.2	208.1	206.2	214.0	213.1	213.5	214.9	215.1	214.0	r 216.6	217.7	217.9	217.9	218.1
Consumer nondurable goods less food and energy .....	191.2	193.9	194.6	195.6	196.9	197.6	201.9	203.5	204.8	r 207.3	207.1	208.0	208.9	209.9
Capital equipment .....	239.8	241.9	241.8	249.2	250.2	250.9	254.6	256.7	258.1	r 260.8	262.6	264.0	265.7	265.9
<b>INTERMEDIATE MATERIALS</b>														
Intermediate materials, supplies, and components .....	280.3	284.3	285.3	287.7	289.1	291.9	296.1	298.3	302.0	r 305.8	306.6	307.1	308.6	309.9
Materials and components for manufacturing .....	265.7	268.9	269.5	273.3	273.9	275.7	279.6	280.3	281.6	r 284.1	285.0	285.8	288.0	289.6
Materials for food manufacturing .....	264.4	277.9	275.8	295.1	299.0	279.6	280.7	273.2	267.5	r 263.1	260.3	263.9	262.6	261.7
Materials for nondurable manufacturing .....	259.5	263.4	263.2	265.0	266.7	268.5	274.0	276.5	279.4	r 284.3	286.6	287.5	288.8	290.7
Materials for durable manufacturing .....	301.0	299.2	300.5	304.7	303.8	304.3	306.9	305.4	306.9	r 310.6	311.1	310.5	314.4	316.1
Components for manufacturing .....	231.8	235.6	237.0	238.4	238.3	246.3	250.3	253.0	254.2	r 255.4	256.0	257.0	259.5	261.5
Materials and components for construction .....	268.3	271.4	271.7	272.4	274.0	276.6	279.2	280.3	282.7	r 288.0	288.3	289.3	290.2	290.6
Processed fuels and lubricants .....	503.0	517.4	519.5	516.2	521.3	539.4	551.9	569.8	598.3	r 608.5	608.7	605.7	604.3	606.7
Manufacturing industries .....	425.7	436.0	440.8	440.6	445.2	457.9	469.5	482.8	503.9	r 509.0	510.9	505.7	503.7	507.4
Nonmanufacturing industries .....	570.9	588.4	588.9	583.7	589.3	611.4	624.7	646.7	681.6	r 696.2	695.0	694.0	693.1	694.3
Containers .....	254.5	257.4	257.9	260.1	259.5	260.6	264.6	268.2	270.9	r 274.3	276.0	277.2	278.2	280.3
Supplies .....	244.5	247.7	250.3	252.3	255.2	255.0	257.8	257.8	258.9	r 262.4	263.8	264.6	266.2	266.1
Manufacturing industries .....	231.9	235.4	236.1	237.5	238.7	239.5	242.5	244.8	246.8	r 250.6	251.7	253.4	255.3	256.0
Nonmanufacturing industries .....	251.1	254.1	257.6	259.9	263.8	263.0	265.7	264.6	265.2	r 268.7	270.1	270.5	272.1	271.5
Feeds .....	229.0	234.7	246.8	250.3	259.2	251.5	252.0	237.5	231.7	r 239.2	243.2	235.7	232.8	228.9
Other supplies .....	253.6	255.8	256.9	258.8	261.3	262.4	265.6	268.3	270.6	r 272.9	273.6	276.1	278.9	279.2
<b>CRUDE MATERIALS</b>														
Crude materials for further processing .....	304.6	317.0	319.3	322.8	324.6	323.5	328.0	336.5	334.2	r 336.3	333.2	334.3	336.2	333.2
Foodstuffs and feedstuffs .....	259.2	276.8	276.6	279.1	277.3	271.6	270.7	267.1	262.1	r 263.5	260.6	264.2	267.0	261.8
Nonfood materials .....	401.0	401.9	409.8	415.4	424.9	433.8	450.1	484.9	488.4	r 492.1	488.6	484.2	484.2	485.9
Nonfood materials except fuel .....	346.1	344.8	351.4	355.6	363.9	373.3	391.0	427.9	430.9	r 432.5	428.6	418.3	413.5	414.2
Manufacturing industries .....	357.4	355.4	362.6	367.1	376.1	386.5	405.1	445.5	448.6	r 450.2	445.7	434.4	429.0	429.7
Construction .....	237.6	243.7	244.8	245.3	246.5	247.4	254.8	257.2	259.2	r 261.5	263.4	263.5	264.7	265.2
Crude fuel .....	615.0	626.3	639.1	650.9	664.9	670.2	677.4	697.7	703.6	r 716.6	715.3	739.9	762.2	768.6
Manufacturing industries .....	690.5	705.4	722.0	738.1	755.8	762.9	771.9	798.1	805.8	r 821.9	819.7	851.4	877.2	885.4
Nonmanufacturing industries .....	567.0	575.5	585.4	593.8	605.2	608.9	614.9	630.6	635.0	r 645.8	645.2	664.4	684.1	689.3
<b>SPECIAL GROUPINGS</b>														
Finished goods excluding foods .....	247.8	251.4	251.1	256.2	257.0	258.2	262.4	265.5	268.7	r 272.1	272.6	273.6	274.1	274.5
Finished consumer goods excluding foods .....	250.8	255.0	254.6	258.7	259.5	260.9	265.1	268.5	272.5	r 276.1	276.1	277.0	277.1	277.5
Finished consumer goods less energy .....	218.0	221.9	221.9	225.0	225.5	226.0	233.8	229.6	230.2	r 231.8	232.1	232.9	234.5	234.5
Intermediate materials less foods and feeds .....	282.3	285.8	286.6	288.2	289.3	293.5	298.0	301.0	305.4	r 309.5	310.5	311.0	312.8	314.3
Intermediate materials less energy .....	265.3	268.3	269.2	272.2	273.3	274.9	278.3	279.1	280.5	r 283.7	284.6	285.4	287.2	288.4
Intermediate foods and feeds .....	252.6	263.7	265.9	280.3	285.7	270.0	270.9	261.3	255.6	r 254.9	254.1	254.3	252.5	250.7
Crude materials less agricultural products .....	446.4	447.1	454.1	463.2	473.8	482.8	504.0	547.6	551.8	r 556.0	552.8	547.4	546.9	549.9
Crude materials less energy .....	256.1	268.5	269.9	272.4	271.7	267.5	266.0	262.6	259.6	r 261.1	257.9	259.6	261.8	258.1

<sup>1</sup> Data for April 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

<sup>2</sup> Not available.

r=revised.

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

**27. Producer Price Indexes, by commodity groupings**

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1980	1980					1981							
			Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. <sup>1</sup>	May	June	July	Aug.
	<b>All commodities</b> .....	268.8	273.8	274.6	277.8	279.1	280.8	264.8	287.6	290.3	293.4	293.7	294.5	296.0	296.2
	<b>All commodities (1957-59 = 100)</b> .....	285.2	290.5	291.4	294.7	296.1	297.9	302.2	305.1	308.0	311.3	311.6	312.5	314.1	314.3
	<b>Farm products and processed foods and feeds</b> .....	244.7	255.1	256.5	259.4	260.5	257.0	257.9	255.1	253.5	253.8	252.6	254.1	256.6	253.9
	<b>Industrial commodities</b> .....	274.8	278.2	278.8	282.0	283.4	286.6		295.7	299.6	303.5	304.1	304.7	306.0	307.0
	<b>FARM PRODUCTS AND PROCESSED FOODS AND FEEDS</b>														
01	Farm products .....	249.4	263.8	267.0	263.6	264.9	265.3	264.5	262.4	260.7	263.3	259.5	260.3	263.1	257.8
01-1	Fresh and dried fruits and vegetables .....	238.6	254.0	266.2	240.9	246.6	245.1	258.7	271.5	292.8	286.1	273.9	258.6	265.0	257.3
01-2	Grains .....	239.0	256.5	260.6	269.2	270.9	265.2	277.7	267.5	261.8	264.7	257.7	257.1	257.4	242.7
01-3	Livestock .....	252.7	275.7	266.8	263.0	254.8	251.4	244.3	244.6	239.3	246.6	251.8	263.0	266.5	262.0
01-4	Live poultry .....	202.1	224.5	241.0	222.9	221.0	218.9	213.1	220.8	213.5	195.4	207.2	210.0	215.3	210.3
01-5	Plant and animal fibers .....	271.1	280.8	295.2	278.5	287.2	294.1	284.1	268.4	270.1	274.2	258.3	259.6	251.3	232.5
01-6	Fluid milk .....	271.2	271.6	275.5	280.9	284.7	290.5	288.4	289.5	289.5	287.2	283.6	285.0	284.3	285.0
01-7	Eggs .....	171.0	176.9	188.4	175.2	194.0	217.5	185.7	184.8	180.4	196.2	165.0	174.6	185.1	180.7
01-8	Hay, hayseeds, and oilseeds .....	247.1	261.5	280.7	284.4	298.3	310.2	311.8	295.0	289.5	296.3	299.0	285.3	288.3	284.3
01-9	Other farm products .....	299.0	282.7	292.0	285.8	296.6	296.0	296.1	295.1	295.9	295.9	259.7	242.7	250.2	263.9
02	Processed foods and feeds .....	241.2	249.4	249.8	256.1	257.2	251.5	253.3	250.2	248.5	247.6	248.0	249.7	252.1	250.7
02-1	Cereal and bakery products .....	236.0	235.8	238.3	241.5	245.3	248.7	251.5	252.1	252.2	253.9	255.1	256.0	257.2	256.6
02-2	Meats, poultry, and fish .....	243.1	259.9	257.8	256.0	250.9	248.1	248.1	243.6	242.0	239.1	244.8	248.3	257.1	254.2
02-3	Dairy products .....	230.6	232.6	233.7	238.0	240.2	242.3	244.7	245.0	245.1	245.4	245.0	245.6	245.5	245.6
02-4	Processed fruits and vegetables .....	228.7	230.7	231.3	233.8	234.7	236.6	238.4	243.7	255.2	258.0	260.1	263.3	265.5	267.6
02-5	Sugar and confectionery .....	322.5	347.1	341.4	404.7	409.0	338.8	344.6	323.7	302.0	284.5	265.3	277.6	268.8	269.1
02-6	Beverages and beverage materials .....	233.0	237.1	236.1	239.5	240.6	240.5	243.0	244.8	245.4	246.0	245.0	245.5	246.3	246.3
02-7	Fats and oils .....	226.8	240.2	238.3	231.0	238.0	234.1	230.2	228.2	229.8	232.4	228.6	227.5	235.1	228.4
02-8	Miscellaneous processed foods .....	227.2	224.0	226.8	230.6	235.0	240.5	244.2	248.0	249.2	249.9	251.1	251.5	252.2	252.0
02-9	Manufactured animal feeds .....	226.8	232.4	243.4	246.9	254.5	247.1	248.9	235.9	231.1	237.7	241.2	234.5	232.2	228.8
	<b>INDUSTRIAL COMMODITIES</b>														
03	Textile products and apparel .....	183.5	185.6	186.6	188.1	189.6	190.4	193.1	193.9	195.2	197.6	198.0	199.5	200.5	201.4
03-1	Synthetic fibers (12/75 = 100) .....	134.7	137.5	139.5	140.2	140.7	140.8	146.5	147.1	148.9	151.5	156.7	158.2	158.6	162.0
03-2	Processed yarns and threads (12/75 = 100) .....	122.5	123.2	124.3	125.1	125.8	128.2	129.8	130.3	134.6	135.0	137.1	138.9	139.0	139.3
03-3	Gray fabrics (12/75 = 100) .....	138.1	137.5	141.0	143.5	145.0	144.0	143.6	144.0	144.7	146.6	146.1	146.6	147.4	148.2
03-4	Finished fabrics (12/75 = 100) .....	115.7	116.8	117.0	118.3	119.1	120.1	122.2	122.9	123.2	124.9	124.7	124.8	125.2	125.9
03-81	Apparel .....	172.4	175.1	175.0	176.2	176.8	177.5	179.9	180.7	181.4	184.3	182.4	185.0	186.2	186.5
03-82	Textile housefurnishings .....	206.9	211.0	212.9	213.8	213.8	214.3	219.8	221.3	221.3	222.1	231.1	228.1	231.6	231.6
04	Hides, skins, leather, and related products .....	248.9	251.3	247.8	251.2	255.4	256.9	258.2	257.7	261.2	263.5	265.9	262.8	262.1	261.7
04-1	Hides and skins .....	370.9	398.4	356.1	381.5	409.1	392.8	377.5	367.4	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
04-2	Leather .....	310.6	314.2	298.1	301.9	317.3	332.4	332.6	310.0	322.5	337.8	337.0	321.0	317.4	312.2
04-3	Footwear .....	233.1	233.7	235.5	236.6	237.5	236.9	238.4	240.7	240.4	241.1	241.1	241.0	241.9	242.3
04-4	Other leather and related products .....	218.3	218.7	218.8	221.8	222.6	225.3	230.1	236.9	238.4	238.5	249.3	249.4	247.8	247.8
05	Fuels and related products and power .....	574.0	590.6	593.5	592.9	600.2	615.7	634.6	667.5	696.5	707.2	706.0	704.9	703.4	704.1
05-1	Coal .....	467.3	468.7	471.3	470.7	475.4	475.3	477.8	480.8	481.1	486.1	487.7	491.8	505.7	507.3
05-2	Coke .....	430.6	430.6	430.6	430.6	430.6	430.1	430.1	430.1	430.1	430.1	468.5	470.3	470.3	470.3
05-3	Gas fuels <sup>3</sup> .....	760.7	772.6	786.2	802.2	825.5	844.3	857.1	881.6	889.9	907.8	906.0	931.6	946.6	952.4
05-4	Electric power .....	321.6	333.6	338.3	337.4	333.8	337.6	341.4	346.2	351.2	355.5	360.7	366.9	374.9	383.6
05-61	Crude petroleum <sup>4</sup> .....	556.4	566.8	571.3	579.6	600.6	632.8	704.4	842.7	842.8	842.5	840.0	816.0	799.0	797.0
05-7	Petroleum products, refined <sup>5</sup> .....	674.7	697.6	696.4	690.4	697.6	717.0	736.9	769.6	825.5	840.9	835.4	827.7	818.4	813.4
06	Chemicals and allied products .....	260.3	264.4	263.4	264.8	266.7	268.1	274.3	277.6	280.4	286.0	288.2	290.3	291.4	293.2
06-1	Industrial chemicals <sup>6</sup> .....	324.0	330.0	327.5	330.0	332.7	334.6	344.5	352.1	354.5	362.4	366.6	369.4	370.4	371.9
06-21	Prepared paint .....	235.3	238.8	239.3	239.3	241.4	241.4	242.9	246.6	246.6	248.1	250.4	250.4	251.0	251.0
06-22	Paint materials .....	273.9	278.4	278.9	279.6	279.8	281.0	284.0	287.0	290.5	295.4	300.1	300.8	304.4	308.4
06-3	Drugs and pharmaceuticals .....	174.5	176.1	176.8	178.4	181.1	182.6	184.7	187.3	189.3	191.0	192.3	193.2	195.4	195.6
06-4	Fats and oils, inedible .....	298.0	307.6	304.5	302.0	308.2	317.1	310.7	289.7	295.7	312.7	312.1	303.1	290.9	305.6
06-5	Agricultural chemicals and chemical products .....	257.1	260.0	260.6	260.6	261.1	263.3	267.6	271.6	275.8	277.8	278.6	288.9	288.9	293.8
06-6	Plastic resins and materials .....	279.2	281.5	276.5	276.1	276.2	274.1	214.7	276.1	279.4	285.1	287.9	289.7	295.9	295.6
06-7	Other chemicals and allied products .....	224.5	229.0	229.1	230.9	232.4	234.1	244.4	245.1	248.3	255.3	255.8	256.0	254.8	256.7
07	Rubber and plastic products .....	217.4	220.5	222.0	222.8	223.4	223.3	224.8	226.4	228.4	230.8	232.0	233.7	233.5	234.4
07-1	Rubber and rubber products .....	237.5	240.2	242.6	244.6	245.0	244.9	246.2	248.5	252.1	253.0	255.3	257.8	258.0	258.4
07-11	Crude rubber .....	264.3	264.3	267.3	271.7	271.0	268.5	279.1	281.9	281.2	279.8	282.9	284.6	283.8	282.0
07-12	Tires and tubes .....	236.9	238.0	242.1	245.2	245.2	245.2	240.9	243.5	248.6	250.7	250.8	250.8	251.0	251.0
07-13	Miscellaneous rubber products .....	226.6	232.0	232.1	232.0	233.3	234.0	238.6	240.4	243.5	243.8	248.6	254.2	254.7	256.4
07-2	Plastic products (6/78 = 100) .....	121.1	123.2	123.7	123.6	124.0	123.9	125.0	125.5	126.0	128.2	128.3	128.8	128.5	129.3
08	Lumber and wood products .....	288.9	296.1	292.2	289.0	293.4	299.4	296.5	294.7	294.4	299.4	297.8	297.9	295.5	294.3
08-1	Lumber .....	325.8	333.7	328.0	320.6	324.9	333.0	331.3	326.9	326.2	333.6	334.9	330.0	330.1	329.2
08-2	Millwork .....	260.4	260.3	264.5	264.5	270.0	273.0	273.6	273.8	275.7	276.5	274.8	272.9	273.6	272.4
08-3	Plywood .....	246.5	266.0	252.6	252.9	256.6	263.5	251.1	251.2	248.8	256.0	248.4	250.9	248.1	245.9
08-4	Other wood products .....	239.1	236.2	236.8	236.7	236.6	236.2	238.5	238.1	236.9	238.3	238.1	239.7	240.5	239.9

See footnotes at end of table.



## 27. Continued—Producer Price Indexes, by commodity groupings

[1967=100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1980	1980					1981							
			Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. <sup>1</sup>	May	June	July	Aug.
<b>INDUSTRIAL COMMODITIES—Continued</b>															
09	Pulp, paper, and allied products .....	249.2	252.4	252.8	254.3	255.0	256.7	264.4	267.2	269.0	271.4	271.6	272.7	273.8	275.7
09-1	Pulp, paper, and products, excluding building paper and board .....	250.6	253.8	254.1	255.6	256.2	257.9	260.9	264.5	266.8	268.6	270.4	271.9	272.5	274.3
09-11	Woodpulp .....	380.3	388.3	388.2	389.6	390.2	390.2	390.2	390.2	390.2	394.1	396.6	396.6	396.6	396.6
09-12	Wastepaper .....	208.7	193.8	192.5	193.5	192.3	191.5	191.5	186.1	185.1	184.2	182.7	182.9	182.1	182.1
09-13	Paper .....	256.8	258.6	258.7	262.1	264.1	269.4	271.7	272.9	273.8	275.2	276.1	278.8	280.0	283.8
09-14	Paperboard .....	234.6	238.4	239.5	239.9	241.7	239.6	250.2	252.8	255.1	255.7	262.3	262.7	261.4	261.2
09-15	Converted paper and paperboard products .....	238.5	242.3	242.7	243.7	243.5	244.7	246.9	252.1	255.3	257.3	258.6	260.1	260.8	262.5
09-2	Building paper and board .....	206.2	210.3	210.2	212.7	216.5	219.7	219.7	225.7	227.9	232.5	236.9	236.8	234.6	233.8
10	Metals and metal products .....	286.4	285.1	287.3	291.9	291.1	290.6	294.0	294.0	296.4	298.8	299.2	298.5	302.5	304.3
10-1	Iron and steel .....	305.2	302.6	304.5	310.5	312.7	316.4	323.0	323.2	328.2	331.0	330.6	329.9	338.7	339.7
10-13	Steel mill products .....	302.7	301.0	301.0	307.5	309.4	313.7	322.6	322.9	328.7	331.8	332.0	332.1	344.9	344.9
10-2	Nonferrous metals .....	305.0	298.4	302.2	309.4	302.1	293.4	292.1	287.4	286.5	288.4	287.8	284.9	283.3	287.7
10-3	Metal containers .....	298.6	303.2	303.2	304.4	303.3	303.3	311.4	313.8	314.1	314.1	314.1	314.1	315.7	319.4
10-4	Hardware .....	240.5	243.3	245.9	246.6	249.6	251.7	254.5	258.0	258.6	258.5	257.3	257.6	261.7	261.2
10-5	Plumbing fixtures and brass fittings .....	246.7	250.4	250.6	250.6	252.3	254.9	256.7	259.2	259.5	265.3	265.6	268.2	270.3	273.0
10-6	Heating equipment .....	206.5	208.0	208.8	210.6	212.0	214.0	216.6	217.6	219.5	219.8	221.7	222.9	225.7	227.2
10-7	Fabricated structural metal products .....	270.5	273.0	274.1	276.9	278.0	279.3	283.1	285.4	289.4	293.8	294.3	295.4	298.3	300.0
10-8	Miscellaneous metal products .....	250.0	253.2	255.0	256.3	256.9	257.6	260.5	263.1	264.7	267.2	270.6	270.4	275.0	273.8
11	Machinery and equipment .....	239.8	242.6	244.7	246.8	248.3	249.8	253.3	255.3	257.5	259.6	260.6	261.9	264.5	266.0
11-1	Agricultural machinery and equipment .....	259.2	259.9	263.9	265.4	271.6	272.9	276.4	278.4	279.8	282.5	284.4	285.9	287.3	289.3
11-2	Construction machinery and equipment .....	289.4	293.4	295.7	299.1	300.1	301.4	305.9	310.0	312.8	317.0	318.3	320.0	324.0	324.9
11-3	Metalworking machinery and equipment .....	274.4	278.8	280.2	282.5	283.9	285.7	289.7	291.6	294.9	298.7	299.5	300.9	303.0	303.6
11-4	General purpose machinery and equipment .....	264.6	267.0	270.0	272.5	274.3	275.6	278.6	280.2	282.3	284.4	285.3	286.6	290.0	291.7
11-6	Special industry machinery and equipment .....	275.8	277.1	283.0	286.0	287.7	290.9	295.6	299.2	301.0	303.2	307.4	309.1	311.0	310.5
11-7	Electrical machinery and equipment .....	201.7	205.0	206.0	207.0	207.5	208.9	211.9	213.7	216.0	217.4	218.0	219.0	221.0	222.8
11-9	Miscellaneous machinery .....	229.9	232.1	233.6	236.5	238.5	239.6	243.3	245.2	247.0	248.5	248.4	249.8	252.3	255.2
12	Furniture and household durables .....	187.7	188.9	189.5	190.9	191.5	193.1	194.0	195.2	195.8	196.4	197.5	197.1	198.9	199.5
12-1	Household furniture .....	204.8	208.0	208.5	209.8	210.9	212.1	212.9	213.8	214.5	216.5	217.6	218.9	220.4	221.4
12-2	Commercial furniture .....	236.0	237.3	237.8	241.4	242.2	242.4	246.7	251.6	253.4	254.5	256.9	258.1	259.1	259.2
12-3	Floor coverings .....	163.0	163.8	163.9	164.4	165.5	170.7	172.3	171.9	174.1	175.3	179.9	181.1	182.8	182.3
12-4	Household appliances .....	174.2	176.3	177.2	177.5	178.5	179.5	182.2	183.5	184.2	185.1	184.2	184.8	187.5	187.7
12-5	Home electronic equipment .....	91.4	91.3	91.6	91.5	91.2	91.0	91.0	91.3	91.4	90.9	91.0	86.9	87.1	87.5
12-6	Other household durable goods .....	278.6	275.9	276.2	281.8	281.2	285.7	278.9	280.8	278.1	275.3	277.6	275.8	279.1	282.0
13	Nonmetallic mineral products .....	283.0	286.0	286.8	288.6	288.7	291.2	296.6	297.9	300.9	310.8	311.7	312.8	313.9	314.0
13-11	Flat glass .....	196.5	199.5	199.7	200.7	203.1	203.0	203.9	204.3	204.8	210.2	208.1	208.1	216.2	218.8
13-2	Concrete ingredients .....	274.0	278.6	278.9	279.0	279.1	279.7	290.0	291.4	292.6	297.4	297.2	297.1	298.1	298.4
13-3	Concrete products .....	273.9	276.0	277.3	277.5	277.7	277.6	286.1	286.6	286.9	289.9	290.7	293.2	293.0	293.0
13-4	Structural clay products excluding refractories .....	231.5	229.7	230.1	233.3	233.5	233.6	239.5	239.8	244.6	246.0	249.6	249.5	250.3	250.4
13-5	Refractories .....	264.6	270.6	270.6	273.2	273.2	273.2	282.6	293.5	296.1	296.4	304.2	307.3	308.0	308.0
13-6	Asphalt roofing .....	396.8	411.2	407.9	408.5	397.1	394.6	394.8	389.5	390.5	415.9	412.4	422.5	420.3	419.2
13-7	Gypsum products .....	256.3	251.8	251.8	249.5	253.3	252.7	259.6	257.3	257.6	256.8	261.1	260.7	259.7	255.3
13-8	Glass containers .....	292.7	294.3	294.6	306.2	306.2	311.4	311.4	311.4	311.4	326.7	334.5	334.5	334.7	334.8
13-9	Other nonmetallic minerals .....	394.6	397.1	400.7	402.7	403.3	418.9	418.7	424.7	441.7	479.1	477.6	476.8	476.3	475.2
14	Transportation equipment (12/68 = 100) .....	207.0	208.8	204.4	217.4	217.8	224.3	227.4	229.1	228.1	231.9	233.2	234.1	235.3	235.8
14-1	Motor vehicles and equipment .....	208.8	211.7	205.6	218.2	218.6	226.2	228.9	230.9	229.5	233.9	235.3	236.4	237.5	238.1
14-4	Railroad equipment .....	313.1	318.0	320.0	323.3	323.6	323.9	332.5	332.5	333.9	335.7	337.1	337.4	344.3	345.0
15	Miscellaneous products .....	258.8	260.1	265.1	266.0	263.6	265.3	264.3	264.9	264.0	266.0	266.1	266.1	262.8	262.6
15-1	Toys, sporting goods, small arms, ammunition .....	198.6	201.3	202.3	202.7	202.8	205.7	208.4	210.5	211.1	211.3	212.3	212.1	213.8	214.0
15-2	Tobacco products .....	245.7	248.2	248.2	249.4	254.4	254.8	254.8	256.1	256.3	268.7	268.4	268.4	268.5	268.6
15-3	Notions .....	217.2	223.8	223.9	224.0	224.1	225.0	227.2	247.3	247.3	248.4	248.4	268.0	267.5	267.7
15-4	Photographic equipment and supplies .....	202.9	200.9	200.9	200.8	206.7	206.6	207.4	209.6	211.2	212.4	212.9	212.9	211.7	207.4
15-5	Mobile homes (12/74 = 100) .....	150.2	151.4	151.7	153.2	152.7	153.0	153.0	153.1	155.0	( <sup>2</sup> )	155.3	155.5	155.8	157.7
15-9	Other miscellaneous products .....	363.4	364.6	381.9	383.4	367.0	370.5	363.3	358.1	351.3	349.0	348.4	346.0	332.3	333.9

<sup>1</sup> Data for April 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

<sup>2</sup> Not available.

<sup>3</sup> Prices for natural gas are lagged 1 month.

<sup>4</sup> Includes only domestic production.

<sup>5</sup> Most prices for refined petroleum products are lagged 1 month.

<sup>6</sup> Some prices for industrial chemicals are lagged 1 month.

r= revised.

**28. Producer Price Indexes, for special commodity groupings**

[1967=100 unless otherwise specified]

Commodity grouping	Annual average 1980	1980					1981							
		Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. <sup>1</sup>	May	June	July	Aug.
All commodities—less farm products	269.6	273.8	274.3	278.1	279.4	281.2	285.4	288.8	291.9	r 295.0	295.6	296.4	297.7	298.5
All foods	244.7	254.1	254.3	258.8	259.7	254.3	255.8	253.7	253.4	r 251.4	250.3	252.2	255.5	253.7
Processed foods	246.6	255.7	254.9	261.7	261.9	255.5	257.0	253.9	252.3	r 250.3	250.6	253.4	256.3	254.9
Industrial commodities less fuels	243.5	245.6	246.0	249.6	250.3	252.3	255.4	257.2	258.6	r 261.8	262.6	263.4	264.8	266.0
Selected textile mill products (Dec. 1975 = 100)	124.3	126.0	126.6	127.5	128.1	129.3	131.8	132.5	132.2	r 134.5	136.3	136.0	136.9	137.2
Hosiery	123.2	125.9	126.4	126.2	126.7	126.4	129.5	130.3	130.5	r 134.2	134.5	135.6	135.7	135.3
Underwear and nightwear	185.4	189.3	189.5	189.7	190.3	190.6	199.2	200.9	202.0	202.1	202.3	203.5	205.0	205.0
Chemicals and allied products, including synthetic rubber and manmade fibers and yarns	250.7	254.7	254.0	255.4	257.0	258.2	264.8	268.3	271.0	r 276.1	278.7	281.0	282.1	283.9
Pharmaceutical preparations	167.1	168.4	168.8	170.8	173.7	174.6	177.1	179.7	182.1	184.0	185.7	186.5	188.7	189.1
Lumber and wood products, excluding millwork and other wood products	304.0	315.5	307.4	302.3	306.5	314.2	309.2	306.0	304.8	r 312.3	310.6	311.5	307.2	305.9
Special metals and metal products	258.5	259.0	257.8	265.7	265.7	266.6	271.8	272.7	273.5	r 276.8	277.7	277.7	280.5	281.8
Fabricated metal products	258.2	261.2	262.6	264.3	265.2	266.3	269.9	272.5	274.7	r 277.0	278.7	279.2	282.7	283.4
Copper and copper products	222.0	220.4	214.1	216.5	215.7	210.8	207.4	205.0	204.8	r 207.7	207.1	204.3	203.0	206.3
Machinery and motive products	230.4	232.9	232.1	239.2	240.2	244.1	247.4	249.4	250.2	r 253.1	254.2	255.4	257.4	258.4
Machinery and equipment, except electrical	263.0	264.6	270.2	273.0	275.1	276.7	277.3	279.7	281.9	r 284.3	285.5	287.0	289.9	291.3
Agricultural machinery, including tractors	267.3	268.1	272.9	274.8	280.9	281.4	285.0	287.3	288.3	r 289.6	292.2	293.6	294.3	296.9
Metalworking machinery	299.4	304.5	306.5	309.6	311.2	314.1	318.9	320.5	323.5	r 325.9	327.1	328.4	329.9	330.8
Numerically controlled machine tools (Dec. 1971 = 100)	225.6	229.3	230.0	231.7	232.1	230.6	234.6	235.0	235.7	r 235.7	237.7	241.7	242.1	242.1
Total tractors	287.3	291.1	295.8	298.3	299.9	301.2	305.8	311.1	311.8	r 316.8	321.5	322.0	325.4	327.3
Agricultural machinery and equipment less parts	261.2	262.2	266.5	268.3	273.7	274.3	278.0	280.2	281.5	r 283.2	285.5	286.9	287.6	290.0
Farm and garden tractors less parts	266.8	270.3	277.3	278.0	282.4	282.4	284.4	287.2	287.6	r 289.3	296.8	297.2	297.2	300.6
Agricultural machinery excluding tractors less parts	268.5	266.6	269.7	272.5	279.9	280.9	285.7	287.7	289.1	r 290.2	288.8	290.9	292.3	294.1
Industrial valves	287.8	291.3	292.4	294.6	296.0	297.8	300.7	305.5	310.1	r 314.0	311.0	312.0	314.1	316.4
Industrial fittings	291.8	296.1	296.1	298.6	298.6	298.6	298.6	298.6	298.9	302.7	303.0	303.0	303.0	303.0
Abrasive grinding wheels	( <sup>2</sup> )	261.5	261.3	263.4	273.0	273.8	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Construction materials	266.4	269.6	269.3	269.9	271.9	274.1	276.7	277.2	279.0	r 283.9	284.1	284.8	285.4	285.6

<sup>1</sup> Data for April 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

<sup>2</sup> Not available.  
r=revised.

**29. Producer Price Indexes, by durability of product**

[1967=100]

Commodity grouping	Annual average 1980	1980					1981							
		Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. <sup>1</sup>	May	June	July	Aug.
Total durable goods	251.5	253.1	253.7	258.4	258.6	261.0	262.7	263.8	264.9	r 267.8	268.4	268.9	270.7	271.8
Total nondurable goods	282.4	290.3	291.2	293.0	295.2	296.3	302.6	306.8	310.9	r 314.2	314.1	315.1	316.3	315.9
Total manufactures	261.5	265.7	265.8	269.6	270.5	272.0	277.3	279.3	282.3	r 285.3	286.0	286.7	288.0	288.4
Durable	250.8	252.7	253.1	257.8	257.9	260.4	262.3	263.4	264.4	r 267.2	268.0	268.7	270.6	271.6
Nondurable	273.0	279.5	279.5	282.1	284.0	284.3	293.5	296.4	301.7	r 304.9	305.4	306.2	306.8	306.6
Total raw or slightly processed goods	305.7	315.7	319.9	319.6	322.9	326.2	322.9	330.3	331.2	r 334.6	332.7	333.9	336.6	335.6
Durable	278.2	265.8	274.9	282.7	285.6	284.0	275.9	275.5	281.7	r 286.0	281.0	272.7	271.9	276.6
Nondurable	306.7	318.4	322.2	321.3	324.6	328.2	325.3	333.3	333.8	r 337.1	335.4	337.3	340.3	338.9

<sup>1</sup> Data for April 1981 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r=revised.

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

[1967=100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1980	1980					1981							
			Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. <sup>1</sup>	May	June	July	Aug.
<b>MINING</b>															
1011	Iron ores (12/75 = 100)	152.9	155.8	155.8	155.8	155.8	155.8	155.8	155.8	155.8	155.8	155.8	155.8	155.8	
1092	Mercury ores (12/75 = 100)	331.2	329.1	335.4	338.7	343.7	325.0	297.9	324.5	335.4	354.1	347.9	352.0	358.3	
1211	Bituminous coal and lignite	466.7	467.9	470.3	469.7	474.2	473.9	476.1	478.1	478.5	483.5	484.9	488.7	502.5	
1311	Crude petroleum and natural gas	643.8	656.7	667.6	681.8	704.6	731.7	786.5	897.9	901.7	908.6	904.6	901.0	898.9	
1442	Construction sand and gravel	252.7	255.8	258.5	261.8	263.2	264.3	270.1	272.3	275.2	278.0	277.7	277.8	278.5	
1455	Kaolin and ball clay (6/76 = 100)	136.0	136.6	136.6	137.2	132.1	133.7	137.1	137.1	137.1	137.1	137.1	137.1	137.1	
<b>MANUFACTURING</b>															
2011	Meatpacking plants	244.0	265.3	257.1	258.0	251.4	249.0	244.7	237.2	236.1	r 237.8	243.0	245.5	252.6	
2013	Sausages and other prepared meats	220.1	233.0	240.0	247.0	249.5	247.4	235.3	232.9	230.4	r 227.5	230.4	237.6	245.5	
2016	Poultry dressing plants	191.9	212.1	226.0	211.3	205.9	201.8	201.9	208.3	203.9	186.7	196.2	198.3	203.6	
2021	Creamery butter	258.5	268.5	265.8	273.2	273.3	274.8	273.6	273.5	273.6	273.4	273.4	273.6	273.7	

See footnotes at end of table.

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

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1980	1980					1981								
			Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. <sup>1</sup>	May	June	July	Aug.	
<b>MANUFACTURING — Continued</b>																
2022	Cheese natural and processed (12/72 = 100)	204.4	206.8	208.0	213.7	214.9	216.1	215.9	215.6	215.7	'216.2	218.0	218.0	217.1	216.0	
2024	Ice cream and frozen desserts (12/72 = 100)	193.3	195.5	196.1	199.5	199.8	207.5	210.1	210.6	210.6	211.4	212.4	212.4	212.7	212.7	
2033	Canned fruits and vegetables	221.4	223.4	224.3	227.6	231.1	232.0	233.3	237.4	241.5	'244.0	246.9	250.0	252.4	253.8	
2034	Dehydrated food products (12/73 = 100)	160.2	159.6	159.9	162.6	168.6	170.4	174.1	171.3	172.9	'174.2	175.3	175.1	180.5	178.7	
2041	Flour mills (12/71 = 100)	189.1	193.1	196.1	201.5	205.1	199.5	203.8	198.4	195.1	201.5	199.4	199.3	196.5	191.0	
2044	Rice milling	243.4	219.9	225.9	237.2	265.8	287.2	289.6	289.6	298.0	300.9	300.3	300.3	297.4	284.3	
2048	Prepared foods, n.e.c. (12/75 = 100)	124.2	126.6	129.6	129.2	133.3	133.9	132.6	129.3	126.6	'128.5	130.2	127.8	125.9	124.9	
2061	Raw cane sugar	414.1	484.0	458.9	588.2	563.8	403.9	418.0	367.1	318.8	275.7	224.8	263.3	272.2	254.6	
2063	Beet sugar	358.0	365.5	384.5	460.1	512.2	423.3	414.5	398.1	370.7	'350.5	351.3	358.1	299.3	299.3	
2067	Chewing gum	290.7	282.4	302.4	322.4	322.9	323.0	323.0	323.0	323.1	323.1	303.1	303.1	303.2	303.2	
2074	Cottonseed oil mills	192.9	215.1	232.9	218.7	231.8	228.0	221.2	193.7	204.4	'218.4	216.6	212.3	212.0	206.0	
2075	Soybean oil mills	244.3	256.9	275.2	279.2	290.5	270.5	272.0	252.5	253.2	'259.1	258.1	248.2	253.6	245.6	
2077	Animal and marine fats and oils	290.2	297.4	307.0	311.0	317.2	311.8	310.8	287.2	284.2	301.7	304.3	291.3	288.8	294.1	
2083	Malt	249.9	244.1	244.1	267.4	267.4	267.4	286.1	286.1	286.1	286.1	286.1	286.1	286.1	286.1	
2085	Distilled liquor, except brandy (12/75 = 100)	123.0	127.7	127.7	127.9	128.5	129.2	129.2	133.9	133.9	133.9	134.3	134.6	134.6	135.5	
2091	Canned and cured seafoods (12/73 = 100)	174.0	177.5	178.6	180.0	183.1	183.4	187.3	187.1	187.6	'187.7	187.4	187.5	187.4	188.5	
2092	Fresh or frozen packaged fish	366.9	365.2	355.0	353.8	353.3	353.9	374.9	366.7	385.2	'393.5	379.7	377.0	369.2	348.6	
2095	Roasted coffee (12/72 = 100)	269.3	274.7	263.9	257.0	252.5	248.5	238.2	238.3	238.3	238.5	238.6	238.6	236.6	236.0	
2098	Macaroni and spaghetti	233.8	230.5	239.3	243.6	243.6	243.6	243.6	243.6	243.6	243.6	246.6	246.6	259.5	259.5	
2111	Cigarettes	254.6	257.4	257.4	257.8	263.5	263.6	263.6	264.1	264.2	278.3	278.3	278.3	278.3	278.3	
2121	Cigars	158.6	159.9	159.9	163.7	164.0	165.1	165.1	165.3	167.0	'168.5	165.6	165.6	166.8	166.8	
2131	Chewing and smoking tobacco	279.8	279.7	279.7	295.0	295.0	298.8	298.7	320.7	320.7	'320.8	320.4	320.8	320.8	321.1	
2211	Weaving mills, cotton (12/72 = 100)	215.8	219.0	221.9	223.4	224.2	225.0	227.9	230.9	232.3	'235.3	236.3	234.6	234.9	236.9	
2221	Weaving mills, synthetic (12/77 = 100)	124.8	124.9	127.7	130.7	133.0	132.5	131.9	132.3	133.3	'134.9	135.3	136.4	137.0	137.5	
2251	Women's hosiery, except socks (12/75 = 100)	106.3	108.8	108.8	108.7	109.0	108.6	109.1	109.2	108.9	'114.1	114.3	115.7	115.6	115.0	
2254	Knit underwear mills	190.1	192.9	194.1	194.2	194.7	195.0	205.6	208.7	209.7	'209.8	209.9	209.9	210.5	210.7	
2257	Circular knit fabric mills (6/76 = 100)	104.6	105.7	105.8	106.7	107.1	107.5	109.3	109.6	109.1	'110.8	109.0	108.9	108.6	110.5	
2261	Finishing plants, cotton (6/76 = 100)	135.1	137.3	136.9	139.1	139.3	140.2	142.4	144.5	144.6	'146.9	147.0	146.3	146.2	146.1	
2262	Finishing plants, synthetics, silk (6/76 = 100)	113.6	114.1	115.3	117.3	117.9	120.5	121.7	123.1	124.3	'125.2	126.4	126.2	127.0	127.7	
2272	Tufted carpets and rugs	138.1	138.3	138.3	138.8	140.0	145.7	148.1	147.8	150.2	'151.5	156.0	157.0	159.2	158.7	
2281	Yarn mills, except wool (12/71 = 100)	203.5	204.3	206.2	207.9	209.9	215.1	216.9	218.1	220.7	'220.9	224.1	225.9	225.1	225.3	
2282	Throwing and winding mills (6/76 = 100)	115.5	115.8	117.2	118.2	118.4	120.1	123.2	123.2	131.3	'131.5	134.9	138.1	138.0	139.5	
2284	Thread mills (6/76 = 100)	139.1	143.1	143.1	143.8	143.9	143.9	144.1	144.3	148.4	150.8	150.9	151.1	151.1	151.1	
2298	Cordage and twine (12/77 = 100)	123.6	125.0	125.0	127.1	129.2	129.3	129.3	129.3	130.9	132.7	134.3	134.3	134.3	134.3	
2311	Men's and boys' suits and coats	212.6	214.9	214.9	216.2	216.3	216.1	218.2	219.7	220.1	'220.3	220.4	221.5	223.1	224.1	
2321	Men's and boys' shirts and nightwear	204.4	206.7	207.7	208.0	208.6	209.5	206.3	207.3	207.1	'207.6	204.9	205.5	208.6	208.7	
2322	Men's and boys' underwear	208.0	211.2	212.8	212.8	212.8	212.9	224.9	229.1	231.0	'231.0	230.9	230.6	230.7	230.7	
2323	Men's and boys' neckwear (12/75 = 100)	112.6	112.4	112.4	112.4	112.4	115.4	115.4	115.4	115.4	115.4	115.4	115.4	113.9	113.9	
2327	Men's and boys' separate trousers	175.3	175.3	175.3	180.2	180.2	180.3	185.3	185.3	185.3	'186.0	185.8	186.1	186.3	186.4	
2328	Men's and boys' work clothing	240.5	244.1	243.9	244.3	244.3	244.4	242.2	242.2	242.3	'247.0	247.4	248.2	250.7	251.3	
2331	Women's and misses' blouses and waists (6/78 = 100)	110.3	112.6	112.6	114.0	114.0	115.4	116.3	116.3	116.4	'118.3	115.2	117.1	119.7	119.8	
2335	Women's and misses' dresses (12/77 = 100)	114.7	115.4	115.4	116.3	116.3	116.3	116.3	116.3	116.3	'118.4	118.7	121.4	121.4	121.5	
2341	Women's and children's underwear (12/72 = 100)	154.4	156.9	155.4	156.0	157.1	158.1	165.5	167.5	168.8	'169.0	169.8	171.1	171.2	171.2	
2342	Brassieres and allied garments (12/75 = 100)	126.5	129.0	129.0	129.0	129.1	129.1	131.7	132.8	134.9	'135.0	134.5	136.6	139.2	139.2	
2361	Children's dresses and blouses (12/77 = 100)	109.9	112.7	112.2	112.7	115.1	117.4	118.1	118.9	119.2	'120.7	119.4	119.4	120.5	120.5	
2381	Fabric dress and work gloves	268.6	271.1	271.1	271.1	272.1	272.1	284.9	289.1	289.1	'289.1	292.1	292.1	289.2	289.2	
2394	Canvas and related products (12/77 = 100)	123.8	123.4	123.9	125.1	125.1	126.1	126.8	126.8	127.8	'129.3	130.6	130.6	130.6	130.7	
2396	Automotive and apparel trimmings (12/77 = 100)	122.4	122.3	122.3	122.3	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	
2421	Sawmills and planing mills (12/71 = 100)	227.7	234.2	229.0	223.2	226.8	233.5	232.3	229.6	228.6	'233.3	233.6	233.9	234.1	231.0	
2436	Softwood veneer and plywood (12/75 = 100)	144.6	160.7	149.6	149.1	152.3	158.2	149.8	149.3	147.2	'152.6	145.8	147.5	144.0	139.9	
2439	Structural wood members, n.e.c. (12/75 = 100)	155.6	152.2	155.5	156.2	157.0	157.1	157.1	157.0	157.1	'158.3	158.2	158.2	157.5	157.1	
2448	Wood pallets and skids (12/75 = 100)	160.1	156.0	154.9	154.6	154.7	154.1	153.8	152.8	152.7	'153.1	153.1	153.0	153.0	152.8	
2451	Mobile homes (12/74 = 100)	150.3	151.4	151.8	153.2	152.7	153.1	153.1	153.2	155.0	'155.8	155.4	155.6	155.9	157.7	
2492	Particleboard (12/75 = 100)	161.5	169.4	163.7	159.8	163.6	165.9	163.9	170.3	172.3	'180.9	183.2	181.0	178.3	172.3	
2511	Wood household furniture (12/71 = 100)	183.8	186.4	187.7	188.1	189.1	190.0	210.1	192.1	193.3	'195.4	196.2	197.1	198.3	198.1	
2512	Upholstered household furniture (12/71 = 100)	163.6	166.2	166.2	167.7	168.6	170.5	169.9	170.1	170.1	'171.8	173.4	175.2	176.4	176.4	
2515	Mattresses and bedsprings	179.1	186.4	186.4	186.5	186.5	186.5	186.3	188.3	189.5	'190.5	194.5	194.6	195.4	198.7	
2521	Wood office furniture	235.2	235.5	235.5	239.7	239.7	240.9	244.1	250.4	253.5	'254.5	255.5	255.6	255.7	255.7	
2611	Pulp mills (12/73 = 100)	240.0	244.5	244.4	246.1	246.8	246.8	246.9	246.9	246.9	'251.2	253.5	253.5	253.5	253.5	
2621	Paper mills, except building (12/74 = 100)	145.5	146.7	146.7	148.2	149.2	150.7	152.0	152.6	153.3	'153.9	154.8	156.2	157.6	158.3	
2631	Paperboard mills (12/74 = 100)	139.0	141.1	141.7	142.3	143.2	142.4	148.2	149.2	150.8	'151.0	154.1	154.3	152.7	152.6	
2647	Sanitary paper products	322.0	331.1	331.1	332.6	334.7	338.2	338.3	342.5	343.0	'343.2	345.4	345.4	345.3	345.3	
2654	Sanitary food containers	216.0	220.3	222.3	222.3	222.3	225.3	232.0	235.2	237.9	'239.2	240.4	243.5	245.5	254.2	
2655	Fiber cans, drums, and similar products (12/75 = 100)	150.6	152.5	155.2	155.5	155.5	155.0	157.7	160.6	160.7	'160.8	160.9	160.9			

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

[1967=100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1980	1980					1981							
			Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. <sup>1</sup>	May	June	July	Aug.
3021	Rubber and plastic footwear (12/71 = 100)	177.9	181.9	182.0	182.0	182.4	182.3	182.8	183.4	183.6	183.6	184.0	184.1	184.7	185.3
3031	Reclaimed rubber (12/73 = 100)	184.7	185.9	185.9	184.0	184.1	186.7	190.4	190.4	187.6	187.7	195.5	185.6	190.8	198.1
3079	Miscellaneous plastic products (6/78 = 100)	121.7	123.9	124.4	124.2	124.6	124.5	125.4	125.4	126.3	128.7	128.8	129.3	129.0	129.7
3111	Leather tanning and finishing (12/77 = 100)	146.6	147.9	140.0	( <sup>2</sup> )	149.3	156.6	157.0	145.5	151.4	158.6	158.3	150.7	150.6	147.8
3142	House slippers (12/75 = 100)	149.1	151.1	151.1	153.5	158.2	154.9	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
3143	Men's footwear, except athletic (12/75 = 100)	159.8	159.5	161.5	161.6	162.4	162.4	164.8	166.5	167.6	168.7	168.4	168.5	169.7	170.4
3144	Women's footwear, except athletic	213.5	214.3	215.2	217.1	217.1	217.1	217.8	220.2	218.7	218.7	219.3	219.0	218.9	219.2
3171	Women's handbags and purses (12/75 = 100)	137.9	140.0	140.9	140.9	140.9	140.9	149.5	149.5	149.7	149.7	158.4	158.4	158.4	158.4
3211	Flat glass (12/71 = 100)	161.3	162.6	162.8	163.8	166.4	166.3	167.1	167.5	168.1	174.5	171.7	171.8	177.1	180.2
3221	Glass containers	292.6	294.2	294.2	306.1	306.1	311.4	311.4	311.4	311.4	311.4	334.4	334.4	334.6	334.7
3241	Cement, hydraulic	310.8	313.1	312.3	311.8	310.5	310.5	324.3	324.3	324.4	332.4	329.2	329.0	329.5	329.5
3251	Brick and structural clay tile	277.3	277.6	278.5	282.6	282.9	282.9	286.6	286.1	295.3	296.0	298.3	298.3	299.8	299.9
3253	Ceramic wall and floor tile (12/75 = 100)	122.5	117.6	117.6	120.1	120.1	120.1	127.1	127.1	127.1	129.6	129.6	129.6	129.6	129.6
3255	Clay refractories	273.6	279.5	279.7	280.2	280.7	280.7	291.5	305.2	308.1	308.6	312.7	313.9	314.0	314.0
3259	Structural clay products, n.e.c.	202.7	205.0	204.8	204.9	205.0	205.1	209.5	212.8	213.0	212.7	224.3	224.3	224.3	224.4
3261	Vitreous plumbing fixtures	234.8	240.4	241.1	241.5	242.6	245.0	244.7	248.9	249.4	252.0	252.5	255.8	258.7	259.5
3262	Vitreous china food utensils	317.3	318.3	318.7	327.4	327.4	327.4	327.4	327.4	328.0	328.2	336.6	336.6	336.6	336.6
3263	Fine earthenware food utensils	295.5	294.6	296.4	297.9	297.9	297.9	298.6	298.6	307.9	308.2	309.1	309.1	309.1	309.1
3269	Pottery products, n.e.c. (12/75 = 100)	152.6	152.7	153.3	155.4	155.5	155.5	155.5	155.5	158.5	158.6	160.5	160.5	160.6	160.6
3271	Concrete block and brick	257.3	259.5	260.5	259.4	259.4	259.4	264.1	265.0	263.2	267.4	271.1	271.2	271.3	274.0
3273	Ready-mixed concrete	279.9	282.6	283.6	282.7	282.8	282.9	294.8	295.4	296.0	298.5	299.5	301.9	300.5	299.9
3274	Lime (12/75 = 100)	157.7	160.2	158.8	160.8	160.8	161.8	165.7	171.7	172.6	172.4	172.4	173.1	173.4	174.2
3275	Gypsum products	256.7	252.3	252.2	250.0	253.6	253.1	259.9	257.6	257.9	257.1	261.4	260.9	261.8	258.9
3291	Abrasive products (12/71 = 100)	212.6	215.7	217.1	218.8	220.2	220.6	222.8	221.7	223.1	232.7	233.0	233.8	234.9	234.9
3297	Nonclay refractories (12/74 = 100)	161.1	164.9	164.8	167.8	167.5	167.6	172.4	177.5	178.9	178.9	185.9	189.0	189.7	189.8
3312	Blast furnaces and steel mills	310.5	308.5	308.6	314.8	316.6	320.7	328.7	328.9	334.0	336.7	337.6	337.6	349.6	349.5
3313	Electrometallurgical products (12/75 = 100)	117.7	117.1	117.2	117.3	117.3	117.3	119.9	120.0	120.0	120.8	120.6	120.7	121.2	121.5
3316	Cold finishing of steel shapes	284.0	282.3	282.3	288.1	288.8	293.3	302.8	303.1	306.1	308.2	308.3	308.5	325.1	325.7
3317	Steel pipes and tubes	290.9	292.6	292.6	294.2	302.4	308.4	315.5	316.3	326.1	333.1	334.2	336.3	348.2	350.7
3321	Gray iron foundries (12/68 = 100)	282.5	283.2	283.3	289.7	290.1	290.7	295.2	296.1	295.6	297.0	298.3	298.6	299.4	299.4
3333	Primary zinc	270.5	255.9	264.0	269.9	282.0	288.7	300.3	300.0	299.7	311.9	321.6	331.0	331.3	349.5
3334	Primary aluminum	297.9	312.2	313.0	325.6	328.5	328.0	331.7	332.3	332.2	332.8	336.0	334.4	336.2	336.5
3351	Copper rolling and drawing	227.5	226.2	220.2	222.0	222.9	222.8	218.7	215.3	211.8	213.1	219.0	212.1	209.5	210.9
3353	Aluminum sheet plate and foil (12/75 = 100)	158.2	157.6	157.6	161.5	163.3	165.1	169.3	170.7	172.1	173.8	174.4	176.2	178.2	178.2
3354	Aluminum extruded products (12/75 = 100)	167.7	168.4	168.2	173.2	176.3	176.4	176.8	177.1	177.3	180.6	180.7	180.8	181.1	181.3
3355	Aluminum rolling, drawing, n.e.c. (12/75 = 100)	146.2	147.6	147.5	150.7	151.2	151.1	155.3	157.1	157.2	157.3	157.5	157.4	157.6	157.6
3411	Metal cans	291.6	295.9	296.1	297.9	297.2	297.3	302.1	303.0	304.7	304.7	304.7	304.7	305.6	306.9
3425	Hand saws and saw blades (12/72 = 100)	182.1	185.4	185.8	186.8	187.2	190.5	195.4	196.3	198.0	198.1	199.8	199.8	302.8	203.8
3431	Metal sanitary ware	248.3	251.4	251.4	251.5	252.2	253.8	256.0	256.4	258.5	262.8	263.7	263.9	266.9	267.1
3465	Automotive stampings (12/75 = 100)	136.9	139.8	140.1	140.2	140.9	141.2	143.0	143.9	144.2	145.0	145.3	145.6	146.6	146.8
3482	Small arms ammunition (12/75 = 100)	145.6	147.3	145.3	145.8	146.3	160.9	157.9	157.8	157.2	157.8	163.2	163.2	163.2	165.3
3493	Steel springs, except wire	230.3	230.8	231.9	233.0	233.3	234.3	238.4	239.2	239.5	241.2	241.6	241.8	244.2	244.3
3494	Valves and pipe fittings (12/71 = 100)	230.0	232.7	233.3	235.8	236.9	238.3	240.2	242.1	244.8	247.6	246.5	247.0	248.5	249.5
3498	Fabricated pipe and fittings	315.5	317.2	319.9	325.0	329.9	329.9	335.7	335.7	338.5	358.8	359.9	361.6	365.9	371.3
3519	Internal combustion engines, n.e.c.	275.4	278.6	283.2	285.2	289.1	289.9	298.2	299.4	302.6	306.0	304.2	305.7	311.5	313.6
3531	Construction machinery (12/76 = 100)	141.1	142.7	143.8	146.0	146.6	147.5	150.0	151.4	152.6	154.4	155.0	156.6	159.0	159.5
3532	Mining machinery (12/72 = 100)	258.5	262.0	264.1	266.0	268.0	270.0	272.5	273.5	276.2	279.5	279.6	280.5	282.3	283.5
3533	Oilfield machinery and equipment	338.1	345.7	347.3	352.9	358.4	360.9	367.0	374.2	378.2	382.2	382.8	398.4	393.3	403.1
3534	Elevators and moving stairways	239.3	243.8	246.4	248.3	248.8	249.5	250.3	250.3	250.3	251.2	251.2	251.2	251.3	252.9
3542	Machine tools, metal forming types (12/71 = 100)	279.5	285.3	285.6	286.8	287.4	292.0	297.5	298.0	301.9	303.0	304.4	305.6	307.3	307.7
3546	Power driven hand tools (12/76 = 100)	132.2	134.5	135.3	136.6	136.7	137.9	142.6	144.9	145.2	146.4	147.0	147.1	148.1	148.5
3552	Textile machinery (12/69 = 100)	216.6	222.1	222.3	223.8	224.5	226.0	235.0	240.0	240.0	240.1	242.4	245.0	245.3	245.3
3553	Woodworking machinery (12/72 = 100)	212.5	216.0	216.0	217.0	217.7	221.5	222.5	223.1	224.7	225.5	225.7	226.6	233.6	224.2
3576	Scales and balances, excluding laboratory	215.0	226.2	226.2	226.3	226.9	217.9	220.5	221.1	224.2	230.2	230.2	230.2	226.5	226.8
3592	Carburetors, pistons, rings, valves (6/76 = 100)	156.6	159.3	160.1	164.9	165.2	167.6	168.9	170.9	171.5	172.0	171.9	176.3	180.6	181.1
3612	Transformers	184.9	190.6	190.7	193.9	193.0	193.3	194.9	197.1	204.3	206.0	207.9	209.6	212.6	215.3
3623	Welding apparatus, electric (12/72 = 100)	209.9	212.1	211.7	214.4	214.9	215.8	218.9	220.9	222.1	224.3	225.4	226.8	227.4	228.8
3631	Household cooking equipment (12/75 = 100)	133.1	134.4	134.7	134.8	135.8	137.5	140.1	141.0	141.1	140.5	140.5	140.9	140.4	141.1
3632	Household refrigerators, freezers (6/76 = 100)	121.4	122.2	123.3	124.1	125.1	125.1	127.5	127.5	127.6	129.4	128.1	129.4	134.0	134.1
3633	Household laundry equipment (12/73 = 100)	162.0	163.6	165.5	166.1	166.6	167.4	169.8	170.2	170.9	173.5	173.8	173.8	174.1	174.1
3635	Household vacuum cleaners	154.4	158.5	158.6	158.8	158.8	159.1	159.1	156.3	158.5	158.4	151.9	152.0	152.0	152.2
3636	Sewing machines (12/75 = 100)	129.1	130.0	130.0	130.3	130.3	130.3	130.3	130.3	131.9	131.8	153.1	153.1	153.1	153.1
3641	Electric lamps	260.3	268.1	269.2	268.7	270.2	266.2	265.8	271.2	272.6	275.5	275.2	275.1	275.3	280.1
3644	Noncurrent-carrying wiring devices (12/72 = 100)	219.7	220.7	220.9	221.8	223.7	229.2	233.1	236.3	240.6	242.6	245.2	252.9	254.7	256.2
3646	Commercial lighting fixtures (12/75 = 100)	139.3	140.4	142.3	142.8	143.1	144.7	145.1	148.0	151.4	156.1	156.7	156.7	154.9	155.8
3648	Lighting equipment, n.e.c. (12/75 = 100)	139.9	140.9	143.2	143.3	144.7	145.0	146.3	146.8	152.7	153.2	153.3	153.7	153.8	161.3
3671	Electron tubes receiving type	251.8	255.6	255.7	264.6	264.8	272.7	284.3	284.4	285.0	285.0	285.2	299.2	327.3	327.5
3674	Semiconductors and related devices	90.7	91.8	92.0	91.8	91.2	91.6	91.1	90.8	91.3	91.2	91.2	90.1	90.0	89.6
3675	Electronic capacitors (12/75 = 100)	162.7	172.6	174.0	170.1	170.2	170.3	170.3	171.1	173.2	168.7	170.1	168.3	168.6	168.0
3676	Electronic resistors (12/75 = 100)	134.2	136.3	136.9	137.7	137.8	137.8	139.0	139.9	139.9	140.0	140.9	141.2	141.9	142.2
3678	Electronic connectors (12/75 = 100)	148.1	149.1	149.6	149.7	149.7	149.7	152.2	153.5	154.					

## PRODUCTIVITY DATA

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

### Definitions

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

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

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

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

### Notes on the data

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

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

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

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

[1977=100]

Item	1950	1955	1960	1965	1970	1973	1974	1975	1976	1977	1978	1979	1980
<b>Private business sector:</b>													
Output per hour of all persons	50.3	58.2	65.1	78.2	86.1	94.8	92.7	94.8	97.9	100.0	99.8	99.5	99.3
Compensation per hour	20.0	26.3	33.9	41.7	58.2	71.3	78.0	85.5	92.9	100.0	108.4	119.3	131.4
Real compensation per hour	50.4	59.6	69.4	80.0	90.8	97.3	95.9	96.3	98.8	100.0	100.7	99.6	96.6
Unit labor cost	39.8	45.2	52.1	53.3	67.6	75.2	84.2	90.2	94.8	100.0	108.6	119.9	132.3
Unit nonlabor payments	43.5	47.8	50.8	57.8	63.4	75.6	78.9	90.7	94.4	100.0	105.1	110.9	118.4
Implicit price deflator	41.0	46.1	51.7	54.8	66.2	75.3	82.4	90.4	94.7	100.0	107.4	116.9	127.6
<b>Nonfarm business sector:</b>													
Output per hour of all persons	56.2	62.7	68.2	80.4	86.7	95.3	93.1	95.0	98.1	100.0	99.8	99.1	98.8
Compensation per hour	21.8	28.3	35.6	42.8	58.6	71.7	78.4	86.0	93.0	100.0	108.5	119.0	130.8
Real compensation per hour	55.0	63.9	73.0	82.2	91.5	97.7	96.4	96.8	99.0	100.0	100.7	99.3	96.2
Unit labor cost	38.8	45.1	52.3	53.2	67.6	75.2	84.3	90.5	94.8	100.0	108.7	120.0	132.4
Unit nonlabor payments	42.8	47.9	50.5	58.2	64.0	71.9	76.1	88.9	94.0	100.0	103.6	108.5	117.5
Implicit price deflator	40.2	46.0	51.7	54.9	66.4	74.1	81.6	89.9	94.5	100.0	107.0	116.2	127.4
<b>Nonfinancial corporations:</b>													
Output per hour of all employees	( <sup>1</sup> )	( <sup>1</sup> )	66.3	79.9	85.4	94.5	91.3	94.4	97.4	100.0	100.4	100.4	101.0
Compensation per hour	( <sup>1</sup> )	( <sup>1</sup> )	36.3	43.0	58.3	70.8	77.6	85.5	92.5	100.0	108.2	118.7	130.7
Real compensation per hour	( <sup>1</sup> )	( <sup>1</sup> )	74.2	82.6	91.0	96.5	95.4	96.3	98.5	100.0	100.5	99.1	96.2
Unit labor cost	( <sup>1</sup> )	( <sup>1</sup> )	54.7	53.8	68.3	74.9	85.1	90.6	95.0	100.0	107.8	118.2	129.4
Unit nonlabor payments	( <sup>1</sup> )	( <sup>1</sup> )	54.6	60.8	63.1	70.7	75.7	90.9	95.0	100.0	103.8	108.3	117.3
Implicit price deflator	( <sup>1</sup> )	( <sup>1</sup> )	54.7	56.2	66.5	73.4	81.8	90.7	95.0	100.0	106.4	114.8	125.2
<b>Manufacturing:</b>													
Output per hour of all persons	49.5	56.5	60.1	74.6	79.2	93.1	90.9	93.5	97.7	100.0	100.9	102.0	101.7
Compensation per hour	21.5	28.8	36.7	42.9	57.6	69.1	76.4	85.5	92.4	100.0	108.2	118.8	131.6
Real compensation per hour	54.1	65.2	75.1	82.3	89.9	94.2	93.9	96.3	98.3	100.0	100.5	99.2	96.8
Unit labor cost	43.4	51.0	61.1	57.4	72.7	74.2	84.1	91.4	94.6	100.0	107.3	116.5	129.4
Unit nonlabor payments	55.1	59.4	62.0	70.3	66.0	71.6	70.4	88.5	95.1	100.0	104.7	105.7	108.6
Implicit price deflator	46.8	53.4	61.3	61.2	70.7	73.4	80.1	90.6	94.7	100.0	106.5	113.4	123.4

<sup>1</sup> Not available.

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

Item	Year											Annual rate of change	
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1950-80	1960-80
Private business sector:													
Output per hour of all persons	0.9	3.6	3.5	2.7	-2.3	2.3	3.3	2.1	-0.2	-0.3	-0.2	2.5	2.2
Compensation per hour	7.4	6.6	6.5	8.0	9.4	9.6	8.6	7.7	8.4	10.1	10.1	6.0	7.1
Real compensation per hour	1.4	2.2	3.1	1.7	-1.4	0.4	2.7	1.2	0.7	-1.1	-3.0	2.4	1.9
Unit labor cost	6.4	2.9	2.9	5.2	11.9	7.2	5.1	5.5	8.6	10.4	10.3	3.5	4.8
Unit nonlabor payments	0.7	7.6	4.5	5.9	4.4	15.0	4.1	5.9	5.1	5.5	6.7	3.2	4.4
Implicit price deflator	4.5	4.4	3.4	5.4	9.4	9.7	4.7	5.6	7.4	8.8	9.2	3.4	4.7
Nonfarm business sector:													
Output per hour of all persons	0.3	3.3	3.7	2.5	-2.4	2.1	3.2	2.0	-0.2	-0.7	-0.3	2.1	1.9
Compensation per hour	7.0	6.6	6.7	7.6	9.4	9.6	8.1	7.6	8.5	9.7	9.9	5.7	6.8
Real compensation per hour	1.0	2.2	3.3	1.3	-1.4	0.4	2.2	1.0	0.7	-1.4	-3.2	2.1	1.6
Unit labor cost	6.6	3.1	2.8	4.9	12.1	7.4	4.7	5.5	8.7	10.4	10.3	3.5	4.8
Unit nonlabor payments	1.1	7.4	3.2	1.3	5.9	16.7	5.7	6.4	3.6	4.8	8.3	3.1	4.2
Implicit price deflator	4.8	4.5	3.0	3.7	10.1	10.3	5.1	5.8	7.0	8.6	9.7	3.4	4.6
Nonfinancial corporations:													
Output per hour of all employees	0.4	4.8	3.0	2.6	-3.4	3.4	3.2	2.7	0.4	-0.0	0.6	( <sup>1</sup> )	2.1
Compensation per hour	6.8	6.5	5.8	7.7	9.7	10.1	8.2	8.1	8.2	9.7	10.1	( <sup>1</sup> )	6.7
Real compensation per hour	0.8	2.1	2.5	1.4	-1.1	0.9	2.3	1.5	0.5	-1.4	-3.0	( <sup>1</sup> )	1.5
Unit labor cost	6.3	1.6	2.8	4.9	13.6	6.5	4.9	5.3	7.8	9.7	9.5	( <sup>1</sup> )	4.6
Unit nonlabor payments	0.5	7.4	2.7	1.5	7.1	20.1	4.6	5.2	3.8	4.4	8.3	( <sup>1</sup> )	3.8
Implicit price deflator	4.4	3.5	2.8	3.8	11.4	10.9	4.8	5.2	6.4	7.9	9.1	( <sup>1</sup> )	4.3
Manufacturing:													
Output per hour of all persons	-0.2	6.1	5.0	5.4	-2.4	2.9	4.4	2.4	0.9	1.1	0.3	2.6	2.7
Compensation per hour	6.8	6.1	5.4	7.2	10.6	11.9	8.0	8.3	8.2	9.8	10.7	5.6	6.7
Real compensation per hour	0.8	1.8	2.0	0.9	-0.3	2.5	2.1	1.7	0.5	-1.3	-2.5	2.0	1.5
Unit labor cost	7.0	0.0	0.3	1.7	13.3	8.8	3.4	5.7	7.3	8.6	11.1	2.9	3.8
Unit nonlabor payments	-2.5	11.2	0.8	-3.3	-1.8	25.9	7.4	5.2	4.7	0.9	2.8	2.9	4.5
Implicit price deflator	4.3	3.1	0.5	0.3	9.0	13.1	4.6	5.6	6.5	6.4	8.8	3.0	4.2

<sup>1</sup> Not available.

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

[1977 = 100]

Item	Annual average		Quarterly indexes										
			1978	1979				1980				1981	
	1979	1980	IV	I	II	III	IV	I	II	III	IV	I	II
Private business sector:													
Output per hour of all persons	99.5	99.3	99.9	99.7	99.7	99.4	99.1	99.5	99.1	99.4	98.1	100.3	<sup>r</sup> 101.0
Compensation per hour	119.3	131.4	111.9	115.0	118.1	120.7	123.2	126.4	130.1	133.1	135.9	139.7	143.2
Real compensation per hour	99.6	96.6	100.3	100.6	100.3	99.2	98.0	96.7	96.5	96.9	96.0	96.1	96.8
Unit labor cost	119.9	132.3	112.1	115.4	118.5	121.4	124.3	127.0	131.3	133.9	137.0	139.4	<sup>r</sup> 141.8
Unit nonlabor payments	110.9	118.4	109.1	109.6	110.4	111.5	112.2	115.2	116.0	119.7	122.7	127.6	<sup>r</sup> 129.2
Implicit price deflator	116.9	127.6	111.1	113.4	115.8	118.1	120.2	123.0	126.1	129.1	132.2	135.4	<sup>r</sup> 137.6
Nonfarm business sector:													
Output per hour of all persons	99.1	98.8	99.8	99.5	99.1	98.9	98.8	98.9	98.2	99.0	99.0	100.0	<sup>r</sup> 100.2
Compensation per hour	119.0	130.8	111.9	114.9	117.7	120.2	123.0	126.0	129.4	132.3	135.4	139.1	142.4
Real compensation per hour	99.3	96.2	100.3	100.4	100.0	98.8	97.8	96.4	96.0	96.3	95.6	95.7	96.3
Unit labor cost	120.0	132.4	112.2	115.4	118.7	121.5	124.4	127.4	131.8	133.6	136.8	139.1	<sup>r</sup> 142.1
Unit nonlabor payments	108.5	117.5	107.0	107.1	107.7	109.2	110.1	113.9	115.1	119.2	122.0	127.8	<sup>r</sup> 128.6
Implicit price deflator	116.2	127.4	110.5	112.6	115.1	117.4	119.7	122.9	126.3	128.8	131.9	135.3	<sup>r</sup> 137.6
Nonfinancial corporations:													
Output per hour of all employees	100.4	101.0	100.5	100.6	100.7	100.5	99.9	100.2	100.1	101.8	101.8	103.3	<sup>P</sup> 103.6
Compensation per hour	118.7	130.7	111.5	114.5	117.6	120.1	122.7	125.7	129.3	132.5	135.5	139.2	<sup>P</sup> 142.3
Real compensation per hour	99.1	96.2	99.9	100.1	99.9	98.7	97.5	96.2	95.9	96.5	95.7	95.7	<sup>P</sup> 96.2
Total unit costs	116.8	129.7	109.6	112.2	115.3	118.2	121.3	124.2	129.2	131.1	134.1	136.0	<sup>P</sup> 139.2
Unit labor cost	118.2	129.4	111.0	113.8	116.8	119.5	122.8	125.4	129.1	130.2	133.1	134.7	<sup>P</sup> 137.4
Unit nonlabor costs	112.7	130.2	106.0	107.8	111.2	114.6	117.2	120.9	129.3	133.8	136.9	139.5	<sup>P</sup> 144.4
Unit profits	99.0	90.2	108.9	105.6	100.7	97.5	92.2	95.5	83.4	89.1	92.4	106.8	<sup>P</sup> 101.2
Implicit price deflator	114.8	125.2	109.6	111.5	113.7	115.9	118.1	121.0	124.1	126.4	129.5	132.7	<sup>P</sup> 135.0
Manufacturing:													
Output per hour of all persons	102.0	101.7	102.0	101.5	102.3	102.0	102.1	102.0	100.8	100.5	103.4	104.2	105.3
Compensation per hour	118.8	131.6	111.5	114.5	118.6	119.8	122.3	125.4	130.0	133.9	137.3	140.9	144.5
Real compensation per hour	99.2	96.8	100.0	100.2	100.7	98.5	97.2	95.9	96.4	97.5	97.0	96.9	97.7
Unit labor cost	116.5	129.4	109.3	112.9	115.9	117.5	119.8	122.9	129.0	133.3	132.8	135.3	<sup>r</sup> 137.3

<sup>1</sup> Not available.

<sup>r</sup> = revised.

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

[1977=100]

Item	Quarterly percent change at annual rate						Percent change from same quarter a year ago					
	IV 1979 to I 1980	I 1980 to II 1980	II 1980 to III 1980	III 1980 to IV 1980	IV 1980 to I 1981	I 1981 to II 1981	I 1979 to I 1980	II 1979 to II 1980	III 1979 to III 1980	IV 1979 to IV 1980	I 1980 to I 1981	II 1980 to II 1981
<b>Private business sector:</b>												
Output per hour of all persons	1.6	-1.8	1.3	-1.1	4.6	r 2.8	-0.1	-0.6	0.0	-0.0	0.7	r 1.9
Compensation per hour	10.7	12.3	r 9.5	8.6	11.8	r 10.4	9.9	10.1	10.3	10.3	10.5	10.1
Real compensation per hour	-5.0	-0.7	1.6	-3.8	0.4	r 3.1	-3.8	-3.8	-2.3	-2.0	r -0.7	0.3
Unit labor costs	9.0	14.4	8.1	9.8	6.9	r 7.3	10.0	10.8	10.3	10.3	9.7	r 8.0
Unit nonlabor payments	11.2	2.6	13.7	10.2	17.2	r 5.0	5.1	5.1	7.4	9.3	10.8	r 11.4
Implicit price deflator	9.7	10.5	9.8	9.9	10.0	r 6.6	8.4	9.0	9.4	10.0	10.1	r 9.1
<b>Nonfarm business sector:</b>												
Output per hour of all persons	0.3	-2.9	3.6	-0.2	4.3	r -0.7	-0.7	-1.0	0.1	-0.1	1.1	r 2.1
Compensation per hour	10.2	11.3	9.0	9.8	11.6	r 9.6	9.7	9.9	10.1	10.1	10.4	10.0
Real compensation per hour	-5.4	-1.6	1.2	-2.7	-0.2	2.4	-4.0	-4.0	-2.5	-2.2	-0.8	0.2
Unit labor costs	9.9	14.6	5.3	10.1	7.0	r 8.8	10.4	11.0	9.9	9.9	9.2	r 7.8
Unit nonlabor payments	14.6	4.2	15.0	9.9	20.3	r -2.7	6.4	6.9	9.1	10.8	12.2	r 11.8
Implicit price deflator	11.3	11.3	8.2	10.0	11.0	r 6.9	9.1	9.7	9.6	10.2	10.1	r 9.0
<b>Nonfinancial corporations:</b>												
Output per hour of all employees	1.5	-0.5	6.7	-0.0	6.3	P 0.9	-0.3	-0.5	1.3	1.9	3.1	P 3.4
Compensation per hour	10.2	12.0	10.2	9.4	11.4	P 9.2	9.8	9.9	10.3	10.4	10.8	P 10.1
Real compensation per hour	-5.4	-1.0	2.2	-3.1	-0.0	P 2.1	-3.9	-3.9	-2.2	-1.9	-0.5	P 0.3
Total unit costs	9.8	17.0	6.2	9.4	5.6	P 10.0	10.6	12.0	11.0	10.5	r 9.5	P 7.8
Unit labor costs	8.6	12.6	3.2	9.4	4.8	P 8.3	10.1	10.5	8.9	8.4	7.4	P 6.4
Unit nonlabor costs	13.5	30.6	14.7	9.5	7.9	P 14.9	12.2	16.3	16.8	16.8	15.4	P 11.7
Unit profits	15.3	-41.9	30.3	15.7	77.9	P -19.4	-9.5	-17.2	-8.6	0.3	11.8	P 21.3
Implicit price deflator	10.3	10.5	7.9	9.9	10.4	P 7.1	8.5	9.1	9.1	9.6	9.7	P 8.8
<b>Manufacturing:</b>												
Output per hour of all persons	-0.5	-4.7	-1.2	12.1	3.2	r 4.3	-0.5	-1.5	-1.5	1.2	2.2	4.5
Compensation per hour	10.4	15.5	12.7	10.5	11.1	r 10.6	9.4	9.6	11.7	12.2	12.4	11.2
Real compensation per hour	-5.3	2.1	4.5	-2.2	-0.3	r 3.4	-4.2	-4.3	-1.0	-0.3	1.0	1.3
Unit labor costs	10.9	21.2	-14.0	-1.5	7.7	r 6.0	8.9	11.3	13.4	10.9	10.0	6.4

<sup>1</sup> Not available.

r = revised.

## LABOR-MANAGEMENT DATA

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

### Definitions

Data on wage changes apply to private nonfarm industry agreements covering 1,000 workers or more. Data on wage and benefit changes *combined* apply only to those agreements covering 5,000 workers or more. **First-year wage settlements** refer to pay changes going into effect within the first 12 months after the effective date of

the agreement. **Changes over the life of the agreement** refer to total agreed upon settlements (exclusive of potential cost-of-living escalator adjustments) expressed at an average annual rate. **Wage-rate changes** are expressed as a percent of straight-time hourly earnings, while **wage and benefit changes** are expressed as a percent of total compensation.

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

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

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

[In percent]

Sector and measure	Annual average					Quarterly average								
	1976	1977	1978	1979	1980	1979			1980				1981 <sup>P</sup>	
						II	III	IV	I	II	III	IV	I	II
Wage and benefit settlements, all industries:														
First-year settlements .....	8.5	9.6	8.3	9.0	10.4	10.5	9.0	8.5	8.8	10.2	11.4	8.5	10.4	12.0
Annual rate over life of contract .....	6.6	6.2	6.3	6.6	7.1	7.8	6.1	6.0	6.7	7.4	7.2	6.1	7.3	11.0
Wage rate settlements, all industries:														
First-year settlements .....	8.4	7.8	7.6	7.4	9.5	8.9	6.8	6.3	8.2	9.1	10.5	8.3	9.0	12.2
Annual rate over life of contract .....	6.4	5.8	6.4	6.0	7.1	7.2	5.1	5.3	6.5	7.3	7.4	6.5	7.7	9.8
Manufacturing:														
First-year settlements .....	8.9	8.4	8.3	6.9	7.4	9.7	6.3	5.6	7.2	6.7	8.4	7.8	9.0	7.4
Annual rate over life of contract .....	6.0	5.5	6.6	5.4	5.4	8.1	4.7	4.2	5.7	5.1	5.6	5.8	6.7	6.2
Nonmanufacturing (excluding construction):														
First-year settlements .....	8.6	8.0	8.0	7.6	9.5	8.5	9.4	7.8	9.4	10.3	9.5	8.2	8.3	12.3
Annual rate over life of contract .....	7.2	5.9	6.5	6.2	6.6	5.8	6.5	7.4	7.6	8.5	5.9	6.8	7.6	9.4
Construction:														
First-year settlements .....	6.1	6.3	6.5	8.8	13.6	8.7	9.7	7.5	10.8	12.2	15.4	14.3	13.4	13.1
Annual rate over life of contract .....	6.2	6.3	6.2	8.3	11.5	8.3	8.5	7.6	9.1	10.4	13.0	12.0	11.6	10.9



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

[In percent]

Sector and measure	Average annual changes					Average quarterly changes								
	1976	1977	1978	1979	1980	1979			1980				1981	
						II	III	IV	I	II	III	IV	I	II
Total effective wage rate adjustment, all industries .....	8.1	8.0	8.2	9.1	9.9	2.6	3.3	1.6	1.6	3.3	3.5	1.3	1.2	2.8
Change resulting from—														
Current settlement .....	3.2	3.0	2.0	3.0	3.6	1.1	1.0	.5	.4	1.0	1.7	.5	.1	.9
Prior settlement .....	3.2	3.2	3.7	3.0	3.5	1.0	1.0	.4	.5	1.4	1.2	.3	.6	1.4
Escalator provision .....	1.6	1.7	2.4	3.1	2.8	.5	1.2	.7	.7	.8	.7	.6	.6	.5
Manufacturing .....	8.5	8.4	8.6	9.6	10.2	2.3	3.2	2.4	2.0	3.4	2.9	1.7	1.4	2.1
Nonmanufacturing .....	7.7	7.6	7.9	8.8	9.7	2.8	3.4	1.0	1.3	3.2	4.0	1.1	1.0	3.4

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

### 37. Work stoppages, 1947 to date

Month and year	Number of stoppages		Workers involved		Days idle	
	Beginning in month or year	In effect during month	Beginning in month or year (thousands)	In effect during month (thousands)	Number (thousands)	Percent of estimated working time
1947 .....	3,693	.....	2,170	.....	34,600	.30
1948 .....	3,419	.....	1,960	.....	34,100	.28
1949 .....	3,606	.....	3,030	.....	50,500	.44
1950 .....	4,843	.....	2,410	.....	38,800	.33
1951 .....	4,737	.....	2,220	.....	22,900	.18
1952 .....	5,117	.....	3,540	.....	59,100	.48
1953 .....	5,091	.....	2,400	.....	28,300	.22
1954 .....	3,448	.....	1,530	.....	22,600	.18
1955 .....	4,320	.....	2,650	.....	28,200	.22
1956 .....	3,825	.....	1,900	.....	33,100	.24
1957 .....	3,673	.....	1,390	.....	16,500	.12
1958 .....	3,694	.....	2,060	.....	23,900	.18
1959 .....	3,708	.....	1,880	.....	69,000	.50
1960 .....	3,333	.....	1,320	.....	19,100	.14
1961 .....	3,367	.....	1,450	.....	16,300	.11
1962 .....	3,614	.....	1,230	.....	18,600	.13
1963 .....	3,362	.....	941	.....	16,100	.11
1964 .....	3,655	.....	1,640	.....	22,900	.15
1965 .....	3,963	.....	1,550	.....	23,300	.15
1966 .....	4,405	.....	1,960	.....	25,400	.15
1967 .....	4,595	.....	2,870	.....	42,100	.25
1968 .....	5,045	.....	2,649	.....	49,018	.28
1969 .....	5,700	.....	2,481	.....	42,869	.24
1970 .....	5,716	.....	3,305	.....	66,414	.37
1971 .....	5,138	.....	3,280	.....	47,589	.26
1972 .....	5,010	.....	1,714	.....	27,066	.15
1973 .....	5,353	.....	2,251	.....	27,948	.14
1974 .....	6,074	.....	2,778	.....	47,991	.24
1975 .....	5,031	.....	1,746	.....	31,237	.16
1976 .....	5,648	.....	2,420	.....	37,859	.19
1977 .....	5,506	.....	2,040	.....	35,822	.17
1978 .....	4,230	.....	1,623	.....	36,922	.17
1979 .....	4,827	.....	1,727	.....	34,754	.15
1980 <sup>r</sup> : July .....	400	776	230	337	4,028	.20
August .....	360	775	88	231	3,315	.17
September .....	436	813	153	289	3,576	.18
October .....	349	722	90	224	2,530	.12
November .....	205	532	53	126	1,440	.09
December .....	90	380	19	77	1,228	.06
1981 <sup>r</sup> : January .....	253	297	50	68	614	.03
February .....	347	517	90	136	647	.04
March .....	314	545	271	336	1,419	.07
April .....	371	560	101	273	5,117	.25
May .....	473	688	152	383	5,857	.31
June .....	421	682	186	499	3,891	.19
July .....	391	659	127	190	2,015	.10

r = revised

## How to order BLS publications

### PERIODICALS

Order from (and make checks payable to) Superintendent of Documents, Washington, D.C. 20402. For foreign subscriptions, add 25 percent.

**Monthly Labor Review.** The oldest and most authoritative government research journal in economics and the social sciences. Current statistics, analysis, developments in industrial relations, court decisions, book reviews. \$21 a year, single copy \$3.00.

**Employment and Earnings.** A comprehensive monthly report on employment, hours, earnings, and labor turnover by industry, area, occupation, et cetera. \$28 a year, single copy \$3.25.

**Occupational Outlook Quarterly.** A popular periodical designed to help high school students and guidance counselors assess career opportunities. \$7 for four issues, single copy \$2.50.

**Current Wage Developments.** A monthly report about collective bargaining settlements and unilateral management decisions about wages and benefits; statistical summaries. \$13 a year, single copy \$2.25.

**Producer Prices and Price Indexes.** A comprehensive monthly report on price movements of both farm and industrial commodities, by industry and stage of processing. \$18 a year, single copy \$2.75.

**CPI Detailed Report.** A monthly periodical featuring detailed data and charts on the Consumer Price Index. \$18 a year, single copy \$3.

### PRESS RELEASES

The Bureau's statistical series are made available to news media through press releases issued in Washington. Many of the releases also are available to the public upon request. Write: Bureau of Labor Statistics, Washington, D.C. 20212.

**Regional.** Each of the Bureau's eight regional offices publishes reports and press releases dealing with regional data. Single copies available free from the issuing regional office.

### BULLETINS AND HANDBOOKS

About 140 bulletins and handbooks published each year are for sale by regional offices of the Bureau of Labor Statistics (see inside front cover) and by the Superintendent of Documents, Washington, D.C. 20402. Orders can be charged to a deposit account number or checks can be made payable to the Superintendent of Documents. Visa and MasterCard are also accepted; include card number and expiration date. Among the bulletins and handbooks currently in print:

**Occupational Outlook Handbook, 1980-81 Edition.** Bulletin 2075. A useful resource supplying valuable assistance to all persons seeking satisfying and productive employment. \$8, paperback; \$11, cloth cover.

**BLS Handbook of Labor Statistics.** Bulletin 2070, December 1980. A 490-page volume of historical data on the major BLS statistical series. \$9.50.

**Handbook of Methods.** Bulletin 1910. Brief technical account of each major statistical program of the Bureau of Labor Statistics. \$3.50.

**Occupational Projections and Training Data.** Bulletin 2052. Presents both general and detailed information on the relationship between occupational requirements and training needs. (Updates Bulletin 2020.) \$4.75.

**Exploring Careers.** Bulletin 2001. A new career guidance resource designed for junior high school students but useful for older students as well. Includes occupational narratives, evaluative questions, suggested activities, career games, and photographs. \$10.

**Profile of the Teenage Worker.** Bulletin 2039. Focuses on the labor market experience of 16- to 19-year-olds. Based on data from the Current Population Survey, the bulletin reviews past trends and explores the problems of youth unemployment and the transition from school to work. \$3.25.

**Profiles of Occupational Pay: A Chartbook.** Bulletin 2037. A graphic illustration of some of the factors that affect workers' earnings. This three-part presentation looks at wage variations among and within occupations and portrays characteristics of high- and low-paying urban areas and manufacturing industries. \$3.50.

**Perspectives on Working Women: A Databook.** Bulletin 2080. Presents comprehensive statistics on characteristics of working women. Topics covered in 100 tables and brief text include extent of work experience, marital and family status, education, earnings, occupations, and race and Hispanic ethnicity. (Updates Bulletin 1977.) \$4.50.

**Productivity Measures for Selected Industries, 1954-79.** Bulletin 2093. Indexes of output per employee-hour and output per employee for 96 industries are presented in charts and tables. (Updates Bulletin 2054.) \$6.50.

### REPORTS AND PAMPHLETS

Single copies available free from the BLS regional offices or from the Bureau of Labor Statistics, U.S. Department of Labor, Washington, D.C. 20212.


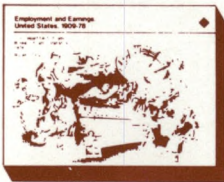
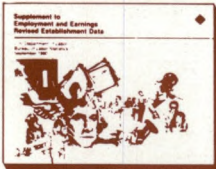

**Major Programs of the Bureau of Labor Statistics.** Report 552. A summary of the Bureau's principal programs, including data available, sources, uses, and publications.

**Employment in Perspective: Working Women.** A quarterly report series presenting highlights of current data on women in the labor force.

**Employment in Perspective: Minority Workers.** A quarterly report series presenting highlights of current data on blacks and persons of Hispanic origin in the labor force.

# Employment and Earnings

Primary Sources of Data  
from the Bureau of Labor Statistics

- |                          |   |   |  |  |   |
|--------------------------|---|---|--|--|---|
| <input type="checkbox"/> | <p><b>Employment and Earnings,</b><br/>monthly periodical</p>   |    | <p>Comprehensive labor force and establishment data. National, State, and area figures on employment, unemployment, hours, earnings, and labor turnover.</p> | <p>One-year subscription includes annual <i>Supplement to Employment and Earnings, Revised Establishment Data</i> (shown below).</p> | <p>subscription \$28<br/>single copy \$3.25</p>   |
| <input type="checkbox"/> | <p><b>Employment and Earnings, United States, 1909-78</b><br/><br/>Bulletin 1312-11<br/>historical databook</p>   |    | <p>Monthly and annual data by industry, from beginning date of each series through 1978.<br/><br/>953 pages.</p>   | <p>GPO Stock No. 029-001-02320-1</p>   | <p>single copy \$13</p>   |
| <input type="checkbox"/> | <p><b>Supplement to Employment and Earnings, Revised Establishment Data</b><br/><br/>September 1980</p>           |   | <p>Data for 1977-80, unadjusted. Data for 1974-1980, seasonally adjusted.<br/><br/>311 pages.</p>  |  | <p>single copy \$4.25</p>   |
| <input type="checkbox"/> | <p><b>Supplement to Employment and Earnings, States and Areas, Data for 1977-79</b><br/><br/>Bulletin 1370-14</p> |  | <p>Data for 1977-78 (revised) and 1979.<br/><br/>245 pages.</p>  | <p>GPO Stock No. 029-001-02566-1</p>   | <p>single copy \$6.50</p> <p>Note: GPO prices are subject to change without notice.</p> |

**Where to send order**

You may send your order directly to:

Superintendent of Documents  
U.S. Government Printing Office  
Washington, D.C. 20402

For ordering information call (202) 783-3238.

Subscriptions *must* be sent directly to Superintendent of Documents.

The following BLS regional offices will expedite all other orders.

1603 JFK Building  
Boston, Mass. 02203

Suite 3400  
1515 Broadway  
New York, N.Y. 10036

P.O. Box 13309  
Philadelphia, Pa. 19101

1371 Peachtree St., NE.  
Atlanta, Ga. 30367

9th Floor  
Federal Office Building  
230 South Dearborn St.  
Chicago, Ill. 60604

2nd Floor  
555 Griffin Square Bldg.  
Dallas, Tex. 75202

911 Walnut Street  
Kansas City, Mo.  
64106

450 Golden Gate Ave.  
Box 36017  
San Francisco, Calif.  
94102

**How to pay**

- Enclosed is check or money order payable to Superintendent of Documents.
- Charge to my GPO account no. \_\_\_\_\_
- Charge to MasterCard, \*      Account no. \_\_\_\_\_      Expiration date \_\_\_\_\_
- Charge to VISA, \*              Account no. \_\_\_\_\_      Expiration date \_\_\_\_\_

\* Available only on orders sent directly to Superintendent of Documents.

Name \_\_\_\_\_

Organization (if applicable) \_\_\_\_\_

Street address \_\_\_\_\_

City, State, ZIP Code \_\_\_\_\_

U.S. Department of Labor  
Bureau of Labor Statistics  
Washington D.C. 20212

Official Business  
Penalty for private use, \$300  
RETURN POSTAGE GUARANTEED

Postage and Fees Paid  
U.S. Department of Labor  
Lab-441



**SECOND CLASS MAIL**

MLR LIBRA442L ISSDUE006R 1  
LIBRARY  
FED RESERVE BANK OF ST LOUIS  
PO BOX 442  
SAINT LOUIS MO 63166

