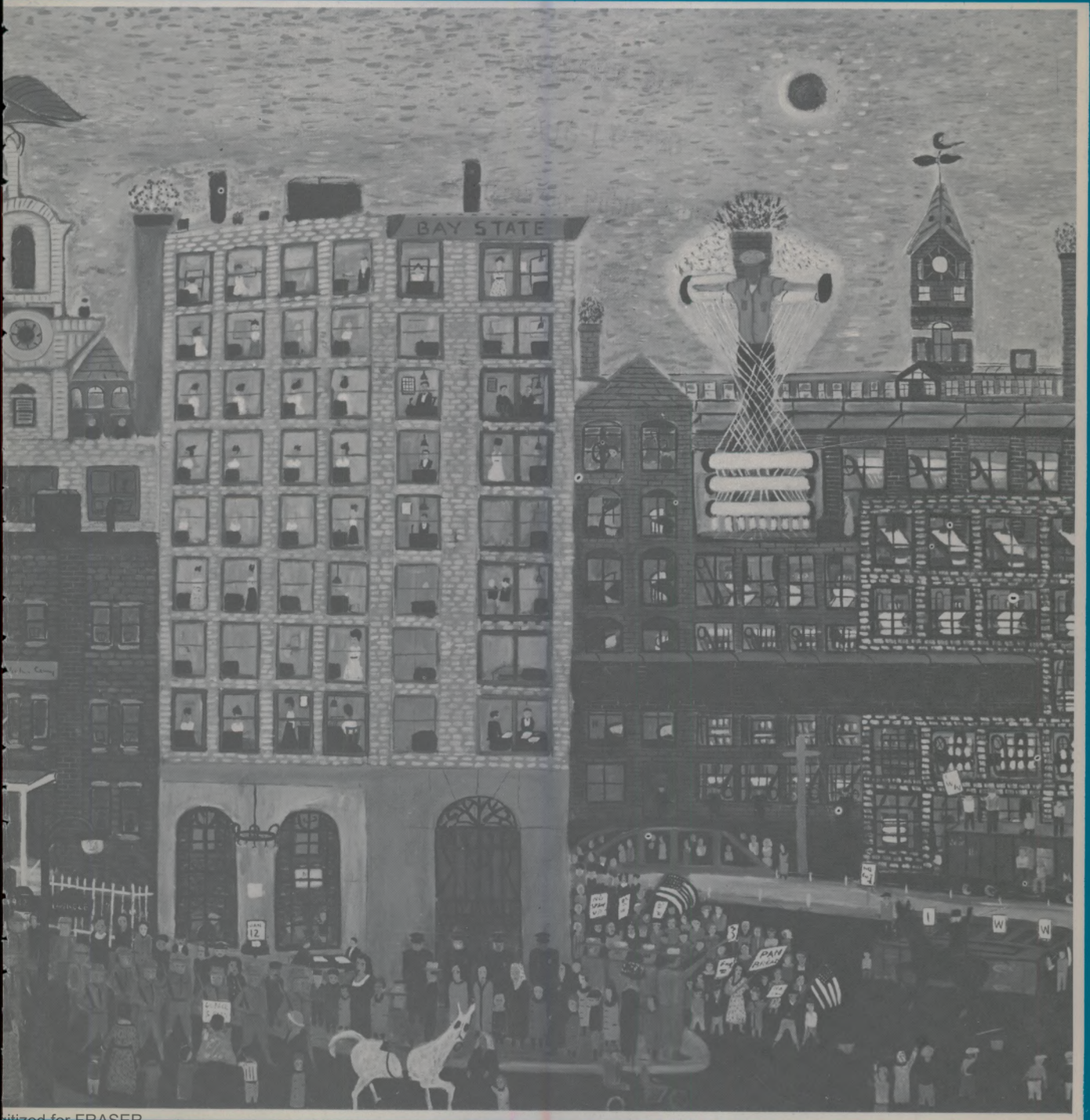




MONTHLY LABOR REVIEW
U.S. Department of Labor
Bureau of Labor Statistics
July 1980

L 2.6:
103/7

DEPOSITORY





U.S. DEPARTMENT OF LABOR
Ray Marshall, 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 —
 \$18 domestic; \$22.50 foreign.
 Single copy \$2.50.

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 at Riverdale, MD., and at additional mailing offices.

Library of Congress Catalog
 Card Number 15-26485

Regional Commissioners
for Bureau of Labor Statistics

Region I — Boston: *Wendell D. Macdonald*
 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

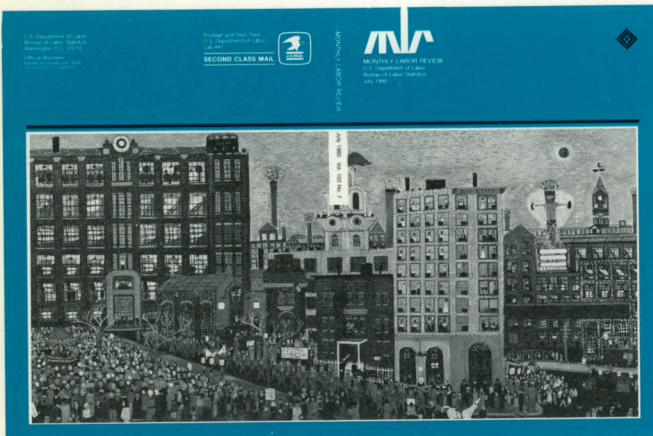
Region VI — Dallas: *Bryan Richey*
 Second Floor, 555 Griffin Square Building, Dallas, Tex. 75202
 Phone: (214) 767-6971
 Arkansas
 Louisiana
 New Mexico
 Oklahoma
 Texas

Regions VII and VIII — Kansas City: *Elliott A. Brower*
 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



July cover:

Ralph Fasanella's painting "Lawrence 1912: The Bread and Roses Strike," recalls the Massachusetts textile workers' strike during which young women, most of them recent immigrants, carried banners demanding: "We want bread and roses too." District 1199, National Union of Hospital and Health Care Workers, AFL-CIO, has made the phrase the theme of its current cultural festival and has produced a full-color poster (21" x 35") of the Fasanella painting (\$6, from District 1199 Cultural Center, Inc., 310 West 43 Street, New York, N.Y. 10036). The painting also appears as the cover illustration of William Cahn's book, *Lawrence 1919: The Bread and Roses Strike*, published by Pilgrim Press.



MONTHLY LABOR REVIEW

REFERENCE DEPARTMENT

JULY 1980
VOLUME 103, NUMBER 7

AUG 8 1980

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

KALAMAZOO PUBLIC LIBRARY

- Robert W. Bednarzik 3 **Worksharing in the U.S.: its prevalence and duration**
Preserving jobs by shortening hours and spreading the work remains relatively uncommon; the average duration of short-time work appears to have lengthened in recent years
- Fred Best, James Mattesich 13 **Short-time compensation systems in California and Europe**
Preliminary analysis of the available data suggests that the California program, enacted to prevent layoffs after the passage of Proposition 13, has worked well
- Norman Bowers 23 **Probing the issues of unemployment duration**
Data ambiguity, measurement problems hamper interpretation of jobless duration; analysis confirms that most jobless spells appear to be short, except during recessions
- John Duke 33 **Construction machinery industry posts slow rise in productivity**
Growth was slower than 1958-78 manufacturing average, with declines recorded in four years, despite considerable capital expenditure and new technology

CONFERENCE PAPERS

- Stephen H. Fuller 37 How quality-of-worklife projects work for General Motors
- Irving Bluestone 39 How quality-of-worklife projects work for the United Auto Workers
- Barry A. Macy 41 The quality-of-worklife project at Bolivar: an assessment

REPORTS

- Anne McDougall Young 44 Trends in educational attainment among workers in the 1970's
- Joan D. Borum 48 Wage gains in 1979 offset by inflation
- Francis W. Horvath 51 Working wives reduce inequality in distribution of family earnings

DEPARTMENTS

- 2 Labor month in review
- 37 Conference papers
- 44 Special labor force reports—summaries
- 48 Research summaries
- 54 Major agreements expiring next month
- 57 Developments in industrial relations
- 61 Book reviews
- 69 Current labor statistics

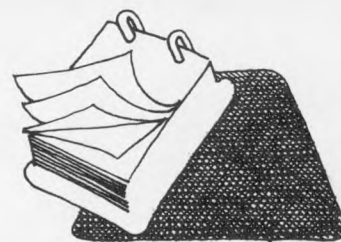
REFERENCE DEPT.

AUG 11 1980

Kalamazoo Public Library

82 7026 2

Labor Month In Review



EMPLOYEE BENEFITS. What employer-paid benefits do U.S. workers receive on the job? The Bureau of Labor Statistics has completed a pilot survey that provides some new answers. The survey covered 21 million employees of large and medium-sized firms in the private economy in 1979. BLS conducted the survey for the Federal Government's Office of Personnel Management which plans to use the data to estimate the cost of providing Federal workers similar benefits. (The BLS survey collected no cost data.) Some survey findings:

Paid holidays and vacations. Virtually all employees have paid holidays and paid vacations. Usually 9 to 11 holidays are provided each year, regardless of employees' length of service. The amount of vacation, however, generally varies by length of service. Typical vacation plans call for 5 days with less than 1 year of service; 10 days after 1 year; 15 days after 10 years; and 20 days after 15 years.

Sick leave plans. Formal sick leave plans cover 80 percent of the professional-administrative employees, 83 percent of the technical-clerical employees, and 37 percent of the production employees. The latter, however, are more frequently covered under accident and sickness insurance

Benefits differ significantly among the various sick leave plans, ranging from those providing 2 or 3 days of leave per year to others providing 6 months or more of benefits. Most plans provide full pay for at least a portion of sick leave.

Accident and sickness insurance. This insurance provides two-thirds of the employees with income dur-

ing absence from work due to disability, sometimes in coordination with sick leave pay.

Just over half of the participants receive benefits for up to 26 weeks, and about one-fifth for up to 52 weeks. Professional-administrative and technical-clerical employees are more likely than production employees to be covered longer.

More than 80 percent of covered workers are in employer-paid plans.

Long-term disability insurance. Benefits from such plans replace some of the income workers lose due to disability. Generally, payments begin after sickness and accident insurance benefits are exhausted. Nearly half of all employees are participants in an employer-sponsored long-term disability plan. Potential benefits for more than three out of four plan participants equal more than half their usual earnings.

Nearly 80 percent of covered workers are in plans funded entirely by their employers.

Health insurance. Health insurance plans that are at least partially employer financed cover 97 percent of the workers in the survey. Nearly all participants are insured for hospital room and board, surgery, X-rays, and physician's hospital visits. One-half have some form of dental insurance, and almost one-fifth have vision care insurance.

Expenditures up to the usual rate for a semi-private room are covered for 90 percent of the participants with basic hospitalization plans. Other plans provide up to a specified amount for each day of hospital care. However, the number of insured hospital days is limited for 72 percent of all workers with

hospital coverage, mostly to 365 days per hospital confinement.

Nine out of ten workers covered by major medical plans are insured to 80 percent of expenses (coinsurance). For nearly three-fourths of covered workers, all benefits are financed by their employers.

Pension plans. Eighty-seven percent of the employees participate in pension plans with either specified retirement benefits or with unspecified benefits based on employer contributions. The survey did not cover other plans that could provide retirement income, such as profit sharing, stock purchase, and savings plans.

More than two-fifths of all participants are covered by plans that require the employee to reach age 63 to 65 before being eligible to retire with immediate full benefits; the majority of these are in plans with no service requirements. Nearly one-fifth of participants are in plans specifying age 61 to 62 for normal retirement, and another fifth are in plans specifying age 60 or less.

Life insurance. Nearly all workers are provided life insurance by their employers. The amount of insurance usually varies by earnings and occupation. Sixty-three percent of all insured workers receive life insurance related to earnings. This includes 39 percent who are insured for a multiple of their annual earnings and 24 percent whose coverage is graduated according to an earnings schedule. A flat amount is provided to most of those whose insurance is not based on earnings.

A publication giving detailed tabulations from the level of benefits survey is in preparation. □

Worksharing in the U.S.: its prevalence and duration

Preserving jobs by shortening hours and spreading the work remains a relatively uncommon practice; the average duration of short-time work has apparently lengthened in recent years, but is still well below that of unemployment

ROBERT W. BEDNARZIK

Reduction of working hours, with accompanying pay cuts, during periods of economic downturn is a practice as old as the industrial era.¹ Under a "worksharing"² arrangement, pay and weekly hours are reduced so that all workers may be retained on the payroll. The advantages and disadvantages of worksharing are widely documented, centering on its use as an antirecessionary tool whereby the relative cost to employers of retaining workers or laying them off must be weighed.³

Advocates of worksharing argue that the system not only spreads the impact of a recession, but also fosters a higher degree of job attachment, keeps employment skills fresh, and allows workers to retain fringe benefits.⁴ And, worksharing has been viewed as a way to maximize recent gains in employment of persons suffering the effects of past discrimination.⁵ On the other hand, critics charge that worksharing, especially if government subsidized, discourages firms from adapting to technological and organizational changes, thus impeding the creation of new job opportunities. Furthermore, representatives of organized labor have expressed concern that worksharing may interfere with seniority privileges

by cutting the wages of more highly paid senior workers.⁶

This article examines the incidence of worksharing in the United States; the time it takes a worksharer to return to a full-time schedule;⁷ and various factors facilitating this change. The transition of worksharers to "not in the labor force," unemployed, and "other part-time" status is also examined. The data analyzed are from the Current Population Survey (CPS): regular annual average and gross flow statistics⁸ and matched individual observations from May through August 1976, and between May 1976 and May 1977.⁹ The probability that an individual will leave worksharing is hypothesized to depend on his or her human capital (training and experience), other income resources, and the value he or she attaches to nonmarket activities. The impact of these factors on the probabilities of remaining in worksharer status, finding or returning to full-time work, or making other labor market transitions is estimated using a multinomial logit analysis.¹⁰

A profile of the worksharer

In 1979, there were, on average, 1.6 million workers—1.8 percent of the total number of persons at work—involuntarily on shortened schedules because of slack

Robert W. Bednarzik is a labor economist in the Division of Employment and Unemployment Analysis, Bureau of Labor Statistics.

workloads. Demographically, blacks and women were disproportionately represented among this group, relative to their percentage of the working population. (See table 1.) Blacks, for example, made up 11 percent of the total at work, but accounted for 17 percent of all worksharers. Occupational attachment is another important factor in the extent of worksharing. In 1979, three-fourths of all short-time workers were concentrated in occupations other than white-collar, with the largest proportions of worksharers holding jobs as operatives (25 percent) and craft workers (16 percent). These percentages were higher than each occupational group's share of the total employed. The incidence of worksharing also varies by industry: construction and, to a lesser extent, the trade and manufacturing sectors account for disproportionate numbers of short-hours workers, because many jobs in these industries are seasonal in nature, and thus lend themselves to periodic cutbacks.

Worksharing and the business cycle

During the late 1950's and the early 1960's, the use of worksharing decreased as a means of forestalling layoffs in business cycle downturns. Thus, at the depth of the 1973-75 recession, the proportion of total nonfarm workers involuntarily on part-time schedules because of slack workloads was smaller than during the 1957-58 recession, and about the same as in the 1960-61 downturn. (See chart 1.)

Table 1. Worksharers by sex, race, occupation, and industry in comparison to the total at work population, 1979 annual averages

Selected characteristics	Worksharers	Total at work
Total: Number (in thousands)	1,602	91,287
Percent	100.0	100.0
Sex: Male	52.6	58.6
Female	47.4	41.4
Race: White	83.1	88.8
Black and other	16.9	11.2
Occupation:		
White-collar	25.2	50.9
Professional and technical	5.7	15.2
Managerial and administration	4.5	11.0
Sales	6.1	6.4
Clerical	8.9	18.3
Blue-collar	50.1	33.0
Craft and kindred	16.4	13.3
Operatives	24.6	14.9
Nonfarm laborers	9.1	4.8
Service	18.0	13.3
Farm	6.9	2.8
Industry: ¹		
Mining	0.9	1.0
Construction	14.9	6.1
Manufacturing	27.4	25.5
Transportation and public utilities	6.8	7.1
Trade	24.9	21.0
Finance, insurance, and real estate	3.2	6.3
Service	21.8	33.0

¹ Wage and salary workers, excluding agricultural and private household workers.

Contributing to this change was a decline in the proportion of collective bargaining agreements containing clauses calling for reduction of hours during slack periods. In the mid-1950's, about 1 in 4 collective bargaining agreements contained provisions for reduced hours in the event of an economic downturn, but by the mid-1970's, fewer than 1 in 5 major agreements included such clauses. This is consistent with the conclusion of a recent study of trade unions in U.S. manufacturing industries that "unions increase the use of layoffs by impeding the use of quits and cuts in real wages, while restraining firms' ability to reduce average hours worked and discharge employees."¹¹

Although not as widespread as in some earlier downturns, worksharing arrangements were clearly evident in the 1973-75 recession. The number of persons employed part time involuntarily because of slack workloads peaked at 2.1 million in 1975, nearly twice the level of its low point in 1973. Despite subsequent economic recovery, the number of worksharers has remained at or above 1.5 million. Moreover, the 1975-79 recovery phase was the first such period during which the proportion of short-time workers did not fall below its prerecession low point. Either worksharers are remaining on shortened schedules for longer periods or employers are now using reduced hours to offset nonrecessionary production cutbacks.

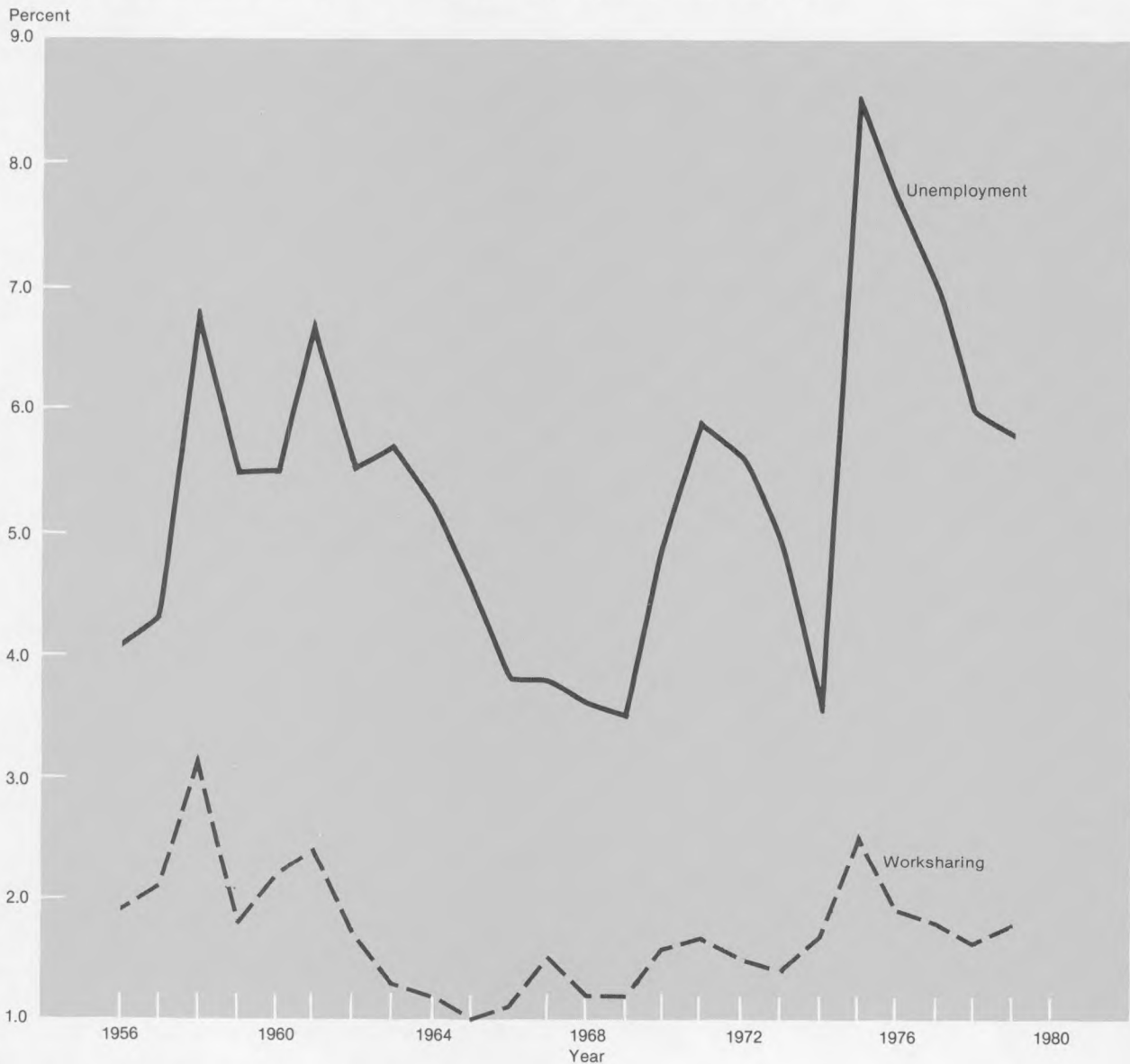
The data pertaining to all involuntary part-time workers depicted in table 2 support the "increased duration" hypothesis, showing a slight increase, between 1968 and 1979, in the probability of an involuntary part-timer remaining as such, on average, from one month to the next.¹² The increase was more prevalent among women than among men. Also, the increased likelihood of remaining involuntarily part time was accompanied by a corresponding 10-year decline in the percentage of involuntary part-timers finding or returning to full-time positions.

It should be noted that CPS data do not indicate if an actual job change occurred, but only that there was a change in labor force status between measurements. Consequently, we are unable to determine, for example, if a "worksharer to full-time" job transition was the result of a job change or of the restoration of the individual's regular weekly schedule in the same job. However, the primary concern of this article is the change in the worksharer's employment status, whether or not it involved a job change.

Changing employment status

A worksharer can, over a specific period, remain employed part time involuntarily, or alter his or her status by returning to or finding a full-time job, accepting other part-time employment, becoming unemployed, or dropping out of the labor force. For the purposes of

Chart 1. Trends in worksharing¹ and unemployment, 1956-1979 annual averages



¹Involuntary part-time workers because of slack work as a percent of total at work.

this analysis, becoming unemployed and dropping out of the labor force were combined to form one transition; thus, there are four possible transitions. Movements into worksharing from full-time, part-time, and unemployed status will also be examined.

The tabulation in the next column presents the matrix of possible labor market transition, with each row or column representing an exhaustive list of entry or exit possibilities. For example, row 1 depicts the flow of persons who were involuntarily working part time (I) during the previous period (t-1) into continued work-

sharing (I), full-time employment (F), other part-time employment (P), or unemployment or "not in the labor force" (U), in the current period (t).

<i>Employment status in previous period</i>	<i>Flow possibilities</i>			
	I(t)	F(t)	P(t)	U(t)
I (t-1)	II	IF	IP	IU
F (t-1)	FI	FF	FP	FU
P (t-1)	PI	PF	PP	PU
U (t-1)	UI	UF	UP	UU

Causes of change in employment status

This section explores the factors that may influence the likelihood of a worksharer becoming employed full time, becoming employed part time for reasons other than slack work, or leaving the labor force. (See exhibit 1.) Because worksharing can be viewed as "partial unemployment," some of the explanatory variables introduced are similar to those which influence the probability of an unemployed individual becoming employed.

Job search activity. Foremost among such influences is job search activity. To determine if workers were actually looking for another job, special supplemental questions on the job search of all workers were included in the May 1976 CPS. It was found that approximately 9 percent of worksharers surveyed had looked for work at least once during the 4 weeks prior to the study, compared with 4 percent of all other employed persons in May 1976. However, the search data indicate only the

Exhibit 1. Summary of variables tested by worksharing logit model

Dependent variables	Independent variables	
	Model variable	Empirical measure
II (Remain a worksharer) IF (Return to a full-time job)	Job search-related: Searched	Looked
IP (Become a part-time worker for reasons other than work-sharing)	Personal characteristics	Race Education Unskilled: Industry Union membership
IU (Become unemployed or not in the labor force)	Value of nonmarket activity	Age Sex Marital status Employment status of other household members
	Other factors: Unmeasured heterogeneity Rotation group controls	Usual status Rotation group dummies

fact of search. Unmeasured differences in search productivity and effort should also result in differential probabilities of leaving worksharing.

Selected personal characteristics. Regarding other possible predictors of the success or failure of regaining full-time work, a 1976 study found that involuntary part-time work in general occurred disproportionately among the young, less educated, blacks, and the unskilled.¹³ For example, the likelihood of being an involuntary part-timer was higher the lower one's educational attainment.¹⁴ Furthermore, although blacks were as likely as other worker groups to have their workweeks reduced during an economic downturn, the restoration of their weekly work schedules was the least responsive to economic recovery.¹⁵ To control for the tendency of worksharers to be found in blue-collar and service occupations, the model included a variable, termed "unskilled", to represent transport equipment operatives (other than drivers), laborers, service workers, and retail trade sales personnel.

Union membership status may also be important. Although unions' preference for layoffs over worksharing arrangements has increased, individual union members on worksharing arrangements would apparently have a greater likelihood of changing status than comparable nonunion workers. This may reflect the fact that union contracts frequently call for either layoff or restoration of usual weekly hours after a specified period of worksharing, depending on the economic position of the firm.

Nonmarket alternatives. It is important to note that an involuntary reduction in a person's usual weekly hours of work changes the attractiveness of his or her labor

Table 2. Involuntary part-time workers in previous month by labor force status in average current month, by sex, 1968-79

Year	Total involuntary part-time workers in previous month		Previous-month involuntary part-time workers by labor force status in current month (in percent)				
	Number (in thousands)	Percent	Involuntary part-time	Full-time	Voluntary part-time	Unemployed	Not in the labor force
Total:							
1968	1,924	100.0	25.3	44.0	13.7	5.9	11.2
1969	1,956	100.0	26.8	42.3	13.8	6.1	11.1
1970	2,330	100.0	27.8	42.5	13.0	7.5	9.1
1971	2,611	100.0	29.6	40.1	13.3	8.1	9.0
1972	2,590	100.0	29.2	38.6	14.4	7.6	10.2
1973	2,391	100.0	26.1	41.3	15.2	7.7	9.8
1974	2,797	100.0	29.7	39.3	13.7	8.3	9.2
1975	3,673	100.0	33.8	36.2	13.3	8.1	7.6
1976	3,433	100.0	33.1	36.2	14.0	8.6	8.2
1977	3,477	100.0	32.0	36.8	14.8	8.3	8.3
1978	3,325	100.0	30.7	37.3	15.9	7.3	8.8
1979	3,320	100.0	31.0	37.5	15.8	7.7	8.0
Male:							
1968	975	100.0	23.5	52.1	9.0	6.6	8.7
1969	986	100.0	24.5	50.8	8.9	6.9	8.7
1970	1,221	100.0	25.1	49.9	9.2	9.3	6.8
1971	1,347	100.0	26.6	48.0	9.0	9.9	6.5
1972	1,320	100.0	26.2	46.1	10.0	9.5	8.0
1973	1,194	100.0	23.0	48.9	10.4	9.6	8.0
1974	1,398	100.0	27.0	47.0	8.7	10.2	7.1
1975	1,888	100.0	31.1	42.7	8.6	11.6	5.9
1976	1,734	100.0	30.4	43.1	9.1	10.8	6.6
1977	1,684	100.0	29.0	44.1	9.7	10.2	6.8
1978	1,524	100.0	26.8	45.6	10.7	9.3	7.5
1979	1,489	100.0	26.2	46.3	11.0	9.6	6.9
Female:							
1968	949	100.0	27.0	35.5	18.3	5.3	13.8
1969	970	100.0	29.2	33.5	18.6	5.2	13.5
1970	1,109	100.0	30.9	34.4	17.4	5.7	11.8
1971	1,264	100.0	32.9	31.6	17.6	6.2	11.6
1972	1,269	100.0	32.2	30.9	19.1	5.4	12.5
1973	1,197	100.0	29.1	33.7	20.1	5.8	11.5
1974	1,400	100.0	32.3	31.5	18.7	6.3	11.2
1975	1,785	100.0	36.5	29.2	18.2	6.6	9.4
1976	1,700	100.0	35.7	29.2	18.8	6.3	9.8
1977	1,793	100.0	34.7	29.8	19.4	6.4	9.6
1978	1,800	100.0	33.9	30.2	20.4	5.6	9.9
1979	1,831	100.0	35.0	30.2	19.7	6.1	9.0

market options. The individual's initial decision to participate in the labor force on a full-time basis is based upon many factors. According to Jacob Mincer, for example, the marginal costs of home work and leisure to women are affected by age and by the presence, number, and ages of children in the household.¹⁶ He also suggests that the employment of other household members may influence a woman's allocation of time among home, market, and leisure.¹⁷ Because all of these factors and others enter into the labor force participation decision of persons working full time, those who subsequently have their schedules shortened may reevaluate their labor force participation according to the value they place on their nonmarket time. It is hypothesized that individual worksharers who value their nonmarket time highly (as indicated by characteristics such as age, sex, marital status, and employment status of other household members) will have a greater probability of leaving the labor force or switching to voluntary part time than other workers.

Other factors. Even assuming that individuals have constant probabilities of changing employment status over time, personal and professional differences among workers will influence the likelihood of specific individuals leaving worksharing.¹⁸ Consequently, as the duration of the short-hours spell increases, a greater proportion of remaining worksharers consists of individuals whose probabilities of leaving worksharing are low.¹⁹

One way to control for this problem of unmeasured heterogeneity among individuals would be to include in the model the actual number of weeks individual worksharers have been on shortened work schedules. This information is not available in the CPS, but certain characteristics of worksharers which increase the probability of securing full-time jobs may be used as proxy variables. One characteristic which seems to indicate a tendency to leave worksharing is usual full-time or part-time status. For example, a comparison of the demographic, occupational, and industrial characteristics of all involuntary part-time workers with those of both voluntary part-time workers and full-time workers revealed that persons involuntarily on part-time schedules who are usually in such status have a close resemblance to voluntary part-timers and those who usually work full time characteristically resemble full-time workers.²⁰ The "usual status" variable was therefore included as a control for unmeasured heterogeneity.

Flow into and out of worksharing

Although the primary concern of this study was to analyze duration of worksharing and factors facilitating movement from it, flows into worksharing were also examined. This analysis provided insights into the reasons for an individual's entry into involuntary part-time sta-

tus, and helped to predict and explain his or her next most likely labor market transition.

One-fourth of the worksharers in June 1976 were holdovers from the previous month. The largest inflow of newcomers to worksharing (54 percent) consisted of full-time workers who had their workweeks reduced, followed by persons previously unemployed or not in the labor force (27 percent), and entrants from other part-time status (19 percent).

In terms of demographic and labor market characteristics—age, marital status, race, sex, education, skill level, union membership, and search status (looking or not looking for another job)—newcomers to worksharing were generally similar to leavers, or the outflow from worksharing. (See table 3.) The one outstanding exception was union membership status, with newcomers less likely than leavers to be union members.

In contrast, stayers—persons who were worksharers in both May and June 1976—were different characteristically from leavers, particularly leavers returning to full-time schedules. Foremost among these differences was age; stayers were significantly older than leavers. Substantial differences were also evident in terms of sex, union membership status, and race; that is, stayers were more likely than leavers to be older, female, black, and nonunion members. Interestingly, the difference between

Table 3. Mean value of selected characteristics of stayers, newcomers to, and leavers from worksharing, May-June 1976

Variable	Description	Stayers	New-comers	Leavers		t-statistic ¹
				Total	Full time	
Age	years of age	42	36	36	37.5	10.969
Marital status	1 if married, spouse present 0 otherwise	.69	.57	.58	.64	.714
Race	1 if black and other 0 otherwise	.19	.17	.16	.12	1.136
Sex	1 if female 0 otherwise	.53	.43	.42	.36	2.385
Education	years of school completed	11	11	11	10	.226
Skilled	1 if unskilled ² 0 otherwise	.29	.30	.35	.29	.000
Union	1 if union member 0 otherwise	.22	.15	.25	.31	-1.298
Looked	1 if looking for work 0 otherwise	.05	.07	.08	.07	-.351
Sample size		152	412	408	239	

¹ Means test of difference between stayers and leavers to full-time jobs.

² Unskilled includes the following detailed occupational categories: sales workers in retail trade, transport equipment workers other than drivers, all laborers, and service workers.

the numbers of stayers and leavers looking for another job was not significant; job search activity, as indicated by the job search variable, was not more typical of one group than of the other.

How successful were persons leaving worksharing in obtaining a full-time schedule? Nearly three-fifths of those leaving worksharing between May and June 1976 went to full-time schedules. As noted earlier, inflow to worksharing consisted predominantly of persons whose full-time schedules were cut back. Thus, the majority of the flows to and from worksharing were, as expected, persons moving into and out of full-time schedules. Departures to other part-time status, and to unemployment each accounted for about one-fifth of the leavers from worksharing.

Longitudinal data from the CPS

In addition to an analysis of change in employment status in 2 consecutive months, the design of the CPS also permits an examination of labor market flows over a 4-consecutive-month period, and between the same month in consecutive years. (See appendix for more detail.) Table 4 traces the labor market flow of persons on worksharing in May 1976 over the 3 following months, and between May 1976 and May 1977. Clearly, the percentage of worksharers in May 1976 remaining as such declined over the year: 27.4 percent still had worksharing arrangements 1 month later, while only 14.6 percent had the same status 1 year later.

It is probable, of course, that in the intervening periods, particularly the 12-month gap between May 1976 and 1977, persons classified as worksharers in both months had moved into and out of other labor force categories as well. Nevertheless, the data indicate that the vast majority of worksharers remain in involuntary part-time status for a relatively short time. For example, fewer than one-sixth of the worksharers in May 1976 were still on such schedules 3 months later.²¹ Moreover, the majority of leavers returned to full-time jobs. The percentage who returned to full-time schedules tended to increase over time, from 45 percent 1 month later to 56 percent 3 months later.²² But table 4 also reveals that, as time is extended, the percentage of worksharers leaving the labor force entirely becomes greater, perhaps indicating "discouragement" about finding a full-time job, or increased attractiveness of nonmarket activities. Apparently, the termination of worksharing for some individuals results from their simply abandoning the idea of securing a full-time schedule in the near future.

Transition probabilities

Table 5 illustrates the probabilities of a change in employment status among selected groups of worksharers over a 1-month period. Although the results were generally consistent with the demographic makeup of all

Table 4. Worksharers 16 years and over in May 1976, by labor force status in June, July, and August 1976, and in May 1977

Status	Proportion
Labor force status in June	
Total: Number	1 624
Percent	100.0
Worksharers	27.4
Employed full time	44.6
Other part time ²	15.1
Unemployed	9.5
Not in the labor force	3.5
Labor force status in July	
Total: Number	3 361
Percent	100.0
Worksharers	22.2
Employed full time	49.9
Other part time	15.5
Unemployed	6.6
Not in the labor force	5.8
Labor force status in August	
Total: Number	4 163
Percent	100.0
Worksharers	16.6
Employed full time	56.4
Other part time	11.0
Unemployed	9.2
Not in the labor force	6.7
Labor force status in May 1977	
Total: Number	5 198
Percent	100.0
Worksharers	14.6
Employed full time	54.0
Other part time	13.6
Unemployed	5.1
Not in the labor force	12.6

¹ The unweighted number of worksharers in May 1976 in the 6 May-June matchable rotation groups.

² Includes voluntary part-time workers and involuntary part-time workers for reasons other than slack work.

³ The unweighted number of worksharers in May 1976 in the 4 May-July matchable rotation groups.

⁴ The unweighted number of worksharers in May 1976 in the 2 May-August matchable rotation groups.

⁵ The unweighted number of worksharers in May 1976 in the 3 May-June 1976-May 1977 matchable rotation groups.

NOTE: See appendix for discussion of limitations of CPS matched data.

involuntary part-timers, there were a few surprises.

Older workers and married workers were most likely to remain worksharers, while newcomers to worksharing—persons reporting their usual status as full time—were least likely to do so. The average duration of worksharing was 6.7 weeks for older workers, compared with 5.5 weeks for newcomers to worksharing.²³ The average duration of worksharing for all persons on such schedules was 6 weeks, roughly half the mean duration of unemployment over the same period.

An individual's usual full- or part-time status was a strong predictor of his or her likelihood of finding or returning to a full-time job. Worksharers whose schedules were usually part time were less than half as likely to move into full-time status as were those who usually worked full time.

Age and race also significantly influenced the "worksharing to full-time" job transition. Younger workers had a higher probability than older workers of making such a move, and whites were nearly twice as likely to secure full-time employment as were blacks. One possi-

ble explanation of the difference noted between age groups involves a contrast between the duration of any worksharing spell, and the number of such spells incurred. Among the unemployed, for example, younger workers have more frequent spells of unemployment than older workers, but the duration of each spell is shorter. The partial evidence indicates that this could also be the case for young worksharers.

Younger worksharers were much less likely than those who were older to become unemployed or to leave the labor force. Older or more senior workers may prefer layoff over a shortened workweek because they are more likely to be eligible for unemployment insurance benefits, and may be entitled to supplemental unemployment benefits as well. Thus, financially, the difference between unemployment and worksharing may not be as significant to older workers. Also, older workers may not feel as threatened by layoff and the prospects of a job loss as younger workers because their seniority usually ensures their recall to work.

There was some marginal evidence that union worksharers have a higher probability of returning to full-time status than worksharers who were not union members, perhaps because the latter are less likely to be governed by a given set of procedures for reductions in hours. Worksharers who were union members also were somewhat less likely than others to be laid off or to leave the labor force. This could be related to the fact that union members are unlikely to suffer a cutback in weekly hours unless the expected duration is short. "If . . . it is known that manpower needs will be curtailed for a lengthy period," notes one observer, "the union may prefer to bypass the reduced hours provisions and

initiate layoffs immediately."²⁴

Surprisingly, the fact that an individual looked for another job while on a shortened workweek did not affect the probability of his or her leaving to take a full-time job. Because search activity increases the probability of an unemployed person obtaining employment²⁵, it was also expected to increase a worksharer's chances of securing a full-time position. Apparently, the key is the intensity of the search effort, which could not be determined from survey results. Perhaps search effort among worksharers is not as intensive as among the unemployed. There is a similarity between involuntary part-time work due to slack workloads and temporary layoffs. Workers often know in advance that the duration of their reduced work schedule is likely to be relatively short, and thus are not generally inclined to look diligently for another job. Other worker characteristics which did not significantly affect transitions into and from worksharing status were educational attainment, and the presence of other employed family members.²⁶

Conclusion

Unlike policymakers in most Western European nations, those in the United States have not to date given much attention to arrangements affecting the supply of labor, including worksharing.²⁷ Because of present Federal regulations and collective bargaining agreements, it is most often in the employer's interest to resort to layoffs instead of a reduction in hours. In most cases, for example, fringe benefit costs alone would be larger under a worksharing system, because there are few, if any, such costs associated with workers on layoffs.

Table 5. Monthly probabilities of change in labor force status, by selected worker characteristics

Probability:	Full sample	Usual status		Age ¹		Marital status		Race		Sex		Education ¹		Skill level		Union status		Job search	
		Full-time	Part-time	24 years	53 years	Married, spouse present	Other	White	Black and other	Male	Female	8 years	14 years	Skilled	Unskilled	Union member	Nonunion member	Looked	Did not look
Remaining a worksharer . . . .	.27	.18	.32	.19	.35	.34	.23	.20	.29	.24	.30	.24	.29	.30	.26	.27	.28	.27	.33
Returning to full-time employment . . . .	.43	.60	.33	.47	.39	.39	.45	.62	.39	.48	.38	.49	.40	.39	.44	.46	.32	.43	.45
Becoming a part-time worker for reasons other than work-sharing ² . . . . .	.17	.12	.20	.20	.14	.14	.19	.10	.18	.14	.19	.13	.19	.16	.17	.16	.21	.17	.13
Becoming unemployed or leaving the labor force . . . .	.13	.11	.15	.15	.12	.14	.13	.09	.14	.14	.13	.15	.13	.15	.13	.11	.19	.14	.09
Sum of probabilities	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

¹ Years reflect the standard deviation above and below the mean.

² Includes all voluntary part-time workers and involuntary part-time workers because of material shortages, "started or ended a job during the survey week", or "could only find part-time work."

NOTE: Transition probabilities are calculated from derivatives obtained in the logit analysis which reveal the marginal effect of a change in the independent variable on the absolute proba-

bility of a given transition in labor force status, in the vicinity of sample means; Probability_{jk} | x_k = 0 = (full sample probability_{jk} - derivative_{jk} x mean_k); Probability_{jk} | x_k = 1 = (Probability_{jk} | x_k = 0 + derivative_{jk}); where j = independent variable and k = dependent variable, and the sum of the probabilities_{jk} = 1. The probabilities shown are based on the logit estimates presented in the appendix to this article.

Due to rounding, sums of individual items may not equal totals.

Another major roadblock to worksharing is the unemployment insurance system, which may actually lead workers and their unions to accept layoffs as opposed to reduced hours. Workers whose hours are cut receive no compensation from the State (except in California), unless their earnings fall below the level of benefits to which they would be entitled in a layoff.

Worksharing arrangements as a means of saving jobs will bear close watching in coming years. Of special interest is the recently enacted California "Work Sharing Unemployment Insurance" program, which allows transfer payments, in the form of unemployment insurance benefits, to persons whose wages and hours are re-

duced as a temporary alternative to layoffs.²⁸ (See following article.) Benefits are paid as a proportion of the maximum benefit available to an individual for a given week if the lost time is equal to or greater than some established minimum worktime reduction. For example, a worker eligible to receive a maximum of \$100 in weekly benefits could receive about one-fifth of that amount, or \$20, for every full day of lost work.²⁹ The California program and a wide-scale pilot project throughout Canada are being cautiously evaluated for their impact on unemployment and patterns of labor force participation, and for other economic and social effects on firms and employees.³⁰ □

—FOOTNOTES—

ACKNOWLEDGMENT: The author thanks Wesley Mellow, an economist in the Office of Research and Evaluation, Bureau of Labor Statistics, for many helpful comments.

¹ R. A. Hart and P. J. Sloan, "Working Hours and Distribution of Work," OECD paper prepared for Conference on Collective Bargaining and Government Policies (Washington, D.C., July 1978), Appendix A.

² Worksharers are herein defined as employed persons whose workweeks have been reduced below 35 hours due to slack workloads. As such, they are a subset of the larger "part-time for economic reasons" group, which also includes persons on reduced hours because of material shortages, repairs to plant or equipment, start or termination of job during the survey week, and unavailability of full-time work.

Other methods of worksharing, such as increasing unpaid leave or the number of annual holidays, or reducing the amount of overtime worked, are excluded from the scope of this article.

³ J. W. Fagan, "Work Sharing During a Depression," *Industrial Relations*, paper presented at a Conference on Industrial Relations (September 1938); S. Martin Nemirov, "Work-Sharing: Past, Present and Future," unpublished paper (May 1976); Sar A. Levitan and Richard S. Belous, *Shorter Hours, Shorter Weeks: Spreading the Work to Reduce Unemployment* (The Johns Hopkins University Press, 1977); Fred Best, "Short-Time Compensation and Worksharing," unpublished paper for National Commission for Manpower Policy (April 1978); and Robert Clark, *Adjusting Hours to Increase Jobs: An Analysis of the Options*, Special Report 15 (National Commission on Manpower Policy, September 1977).

⁴ Sar A. Levitan and Richard S. Belous, "Work sharing initiatives at home and abroad," *Monthly Labor Review*, September 1977, pp. 16-20.

⁵ Peter Henle, "Work-Sharing as an Alternative of Layoffs" (Congressional Research Service, July 1975); and, "Worktime: The Traditional Workweek and its Alternatives," chapter 3, *Employment and Training Report of the President, 1979*.

⁶ "A cure for unemployment?" *Business Week*, Oct. 29, 1979, pp. 163-64.

⁷ Heretofore, little was known about the length of time worker groups involuntarily on worksharing must "share the work." The cost of any government-assisted short-time compensation program is directly related to the length of time an individual worker could expect to receive such compensation. The limited information previously available on reduced worktime arrangements in Germany and California reveals that duration in such status is relatively short—under 3

months in Germany, and less than 5 weeks in California. See Fred Best and James Mattesich, "Short-time Compensation and Work Sharing: A New Alternative to Layoffs," *Special Report* (California Employment Development Department, 1979), pp. 14-25.

⁸ Gross change data, a byproduct of the CPS, show the labor force status of persons not only for the current month, but also for the previous month. The data thus permit the identification and measurement of the flow of persons who leave involuntary part-time work from one month to the next. Gross changes, therefore, represent a short-run "flow," rather than a "stock," of a particular labor force group.

⁹ Matched CPS data were chosen over the National Longitudinal Survey (NLS) and the Panel Study on Income Dynamics (PSID) primarily because of the greater sample size available from the CPS. The sample size quickly becomes the limiting factor when a situation experienced by only a small portion of individuals over a relatively short period is considered. The focal point of this analysis is the May 1976-May 1977 period because (1) the May 1976 CPS questionnaire contained a special supplement on job search by workers, and (2) the percentage of the "at work" population on worksharing was fairly steady during this period.

¹⁰ For a description of the multinomial logit technique, see Joseph R. Antos and Wesley Mellow, *The Youth Labor Market: A Dynamic Overview*, Staff Paper 11 (Bureau of Labor Statistics, July 1979); and, M. Nerlove and S. J. Press, "Univariate and Multivariate Log-Linear and Logistic Models" (Santa Monica, Calif., The Rand Corporation, 1973).

¹¹ James L. Medoff, "Layoffs and Alternatives Under Trade Unions in U.S. Manufacturing," *American Economic Review*, June 1979, pp. 380-95.

¹² It should be noted that, because these data relate to all involuntary part-time workers, the flows of other involuntary part-timers besides those on slack work may be partially responsible for this finding.

¹³ Robert W. Bednarzik, "Involuntary part-time work: a cyclical analysis," *Monthly Labor Review*, September 1975, pp. 12-18.

¹⁴ Robert W. Bednarzik, "Involuntary Part-time Work and Educational Attainment," *The Journal of General Education*, Summer 1976, pp. 135-44.

¹⁵ Robert W. Bednarzik, "Involuntary part-time work: a cyclical analysis," p. 17.

¹⁶ Jacob Mincer, "Labor Force Participation of Married Women: A Study of Labor Supply," *Aspects of Labor Economics: A Conference of*

the Universities (National Bureau of Economic Research, Princeton University Press, 1962), p. 68.

¹⁷ *Ibid.*

¹⁸ John M. Barron and Wesley Mellow, "Changes in Labor Force Status Among the Unemployed," *Journal of Human Resources* (forthcoming).

¹⁹ Stephen W. Salant, "Search Theory and Duration Data: A Theory of Sorts," *Quarterly Journal of Economics*, February 1977, pp. 39-58.

²⁰ Robert W. Bednarzik, "Persons Working Part-time for Economic Reasons," unpublished paper prepared for the National Commission on Employment and Unemployment Statistics (March 1978).

²¹ The 3-months-later flow is based upon two rotation groups with the assumption that one rotation group does not differ much from any other. Although each rotation group is in itself a probability sample, responses differ across groups. This is commonly known as rotation group bias and is discussed more fully in the appendix. Thus, the standard error of the one-sixth figure is unknown. Generally, however, the error would not alter the fact that a person's stay on worksharing declines fairly quickly over a 1-year period.

²² Although rotation group bias also affects these percentages, the bias, in general, would not be likely to cause the direction and distribution of worksharers' flows over time to defy economic logic.

²³ The expected duration of worksharing for the typical individual can be computed by $1/1-P_i$, where P_i is equal to the probability of

staying a worksharer, given variable i . One must assume that $1-P_i$, the mean escape rate, is constant for each individual over time.

²⁴ *Layoffs, Recall, and Worksharing Procedures*, Bulletin 1425-13 (Bureau of Labor Statistics, 1972), p. 16.

²⁵ Barron and Mellow, "Changes in Labor Force Status Among the Unemployed."

²⁶ Because the employment status of other family members is in itself a very limited proxy for other income sources, and the proportion of multi-earner families varies considerably by age of secondary earner, the interpretation of the impact of such a variable is difficult. Therefore, the "employment status of other family members" variable was deleted from the final logit regression run.

²⁷ Sar A. Levitan and Richard S. Belous, "Work sharing initiatives at home and abroad."

²⁸ *Outline for Statewide Evaluation of the California "Shared Work Unemployment Compensation" Program* (Office of the Director, Employment Development Department, State of California, September 1979).

²⁹ Fred Best and James Mattesich, "Short-time Compensation and Work Sharing: A New Alternative to Layoffs."

³⁰ *Outline for Statewide Evaluation of the California "Shared Work Unemployment Compensation" Program*; and Peter Sadlier-Brown, *Work Sharing in Canada: Problems and Possibilities*, HRI Observations Report No. 18 (Montreal, Canada, C. D. Howe Research Institute, June 1978).

APPENDIX

Limitations of the matched data

Any survey procedure has inherent within it both sampling variability and response variability. The Current Population Survey (CPS) obtains its longitudinal flavor from the 4-8-4 rotation group design; the sample is divided equally into 8 rotating groups of households. Each group is in the sample for 4 months, out for 8, and then back in for 4. Consequently, 6 of the 8 groups are common in 2 consecutive months. A further reduction in the match data available results from the fact that identical persons must be matched in order to compute gross information. Since the basis for selection of the CPS sample is household units rather than individuals, common rotation groups reflect identical households but not necessarily identical persons. In any 2-month period, for example, the six common rotation groups will contain a number of persons who have moved from households in the sample area (about 1.5 percent per month) and noninterview cases (4 to 5 percent per month)—persons who refuse to respond and those absent from home during the interview week. The exclusion of nonidenticals not only affects the size of the sample available, but also may introduce a special bias in matched estimates, because the nonidentical persons excluded may differ from those of identical persons.

To evaluate the primary match used in this study, the mean values of selected demographic characteristics for the May-June 1976 match sample for all worksharers and for all involuntary part-time workers in May 1976 are provided below:

Variable	May-June	May 1976	
	1976 match sample of all work- sharers	All work- sharers	All involuntary part-timers
Age (years)	38	N. A.	35
Married, spouse present . . . . .	.63	N. A.	.51
Black and other . . . . .	.17	.18	.18
Female . . . . .	.46	.43	.49

N. A. = Not Available

The tabulation shows that the demographic composition of the matched sample was generally similar to the larger populations of all worksharers and all involuntary part-time workers. This lends some credence to the representativeness of the May-June 1976 match utilized in this study.

Response variability occurs in the form of misclassification of reported labor force status and in "rotation group bias." The "net errors" between the original and reinterview results are comparatively small because of offsetting differences, but gross differences may be substantial. The second form of response variability, "rota-

Exhibit A-1. Multinomial logit estimates of the determinants of changes in labor force status among worksharers between May and June 1976

Variable	Description	Mean	Relative probability of returning to or finding full-time work	Relative probability of becoming unemployed or leaving the labor force	Relative probability of working part-time for reasons other than worksharing	Variable	Description	Mean	Relative probability of returning to or finding full-time work	Relative probability of becoming unemployed or leaving the labor force	Relative probability of working part-time for reasons other than worksharing
Usual status	1 if usually part-time 0 otherwise	0.36	-1.122 (-4.29) -0.270	-0.116 (-0.33) 0.044	-0.016 (-0.05) 0.083	Looked	1 if currently looking for work 0 otherwise	.09	0.161 (0.34) -0.027	0.688 (1.22) 0.051	0.447 (0.86) 0.037
Age	years of age	38	-0.026 (-2.92) -0.003	-0.028 (-2.18) -0.001	-0.031 (-2.83) -0.002	Month in Current Population Survey as of May 1976:					
Marital status	1 if married, spouse present 0 otherwise	.63	-0.514 (-1.90) -0.057	-0.371 (-1.00) 0.002	-0.704 (-2.22) -0.053		1	.17	0.125 (0.31) 0.053	-0.188 (-0.34) -0.021	-0.179 (-0.36) -0.031
Race	1 if black and other 0 otherwise	.17	-0.845 (-2.51) -0.232	0.201 (0.49) 0.058	0.176 (0.48) 0.083		2	.14	-0.288 (-0.68) -0.005	-0.751 (-1.18) -0.052	-0.405 (-0.79) -0.021
Sex	1 if female 0 otherwise	.46	-0.450 (-1.86) -0.102	-0.276 (-0.80) -0.006	0.060 (0.20) 0.046		5	.13	0.200 (0.45) 0.051	-0.181 (-0.29) -0.029	0.093 (0.18) 0.001
Education	years of school completed	11	-0.063 (-1.45) -0.015	-0.063 (-1.06) -0.004	0.030 (0.55) 0.010		6	.19	-0.054 (-0.14) 0.002	-0.168 (-0.31) -0.012	-0.095 (-0.20) -0.006
Skilled	1 if unskilled ¹ 0 otherwise	.26	0.261 (0.90) 0.050	-0.052 (-0.13) -0.022	0.234 (0.68) 0.014		7	.19	-0.302 (-0.77) 0.004	-0.355 (-0.67) -0.005	-0.823 (-1.65) -0.085
Union	1 if union member 0 otherwise	.25	0.331 (1.23) 0.139	-0.710 (-1.53) -0.080	-0.302 (-0.81) -0.053		Constant			3.118	1.562	0.954

¹ Unskilled includes the following detailed occupational categories: sales workers in retail trade, transport equipment workers other than drivers, all laborers, and service workers.

tion group bias," is related to the rotation group structure of the CPS sample mentioned earlier. The response of persons interviewed varies by month in sample. This is due in part to sampling variability. However, the two dominant explanations for this phenomenon are that differential attrition changes the distribution and composition of the sample, and that participation in the survey itself conditions or alters subsequent responses.

To control for the second problem, dummy variables indicating which month the individual was in the sample were included as explanatory variables. No attempt was made to control for the problem of different reinterview probabilities, although this problem should be somewhat mitigated by the demographic similarities

between the matched sample and the total population of worksharers.

Basis of estimates of transitional probabilities

Exhibit A-1 presents the maximum likelihood estimates from the logit analysis, with associated asymptotic t-statistics, and derivatives (at sample means), which provided the basis for the transitional probabilities shown in table 5. All independent variables were constructed from the May 1976 CPS data; dependent variables were defined on data from the June 1976 CPS. The sample size was 475, and the χ^2 statistic, which tests the hypothesis that all parameters except the constants were zero, was 95.8, with 42 degrees of freedom.

Short-time compensation systems in California and Europe

Preliminary analysis of the available data on California's "Work Sharing Unemployment Insurance," enacted to prevent layoffs after passage of Proposition 13, suggests the program worked well; more analysis is needed for a final judgment

FRED BEST AND JAMES MATTESICH

During times of high unemployment it is often suggested that work time be reduced in order to spread available jobs among a larger number of persons. Numerous proposals have been advanced in this area, but only a few hold promise as effective employment policies.¹ One of these is "short-time compensation." This proposal provides partial unemployment insurance benefits for work time lost by employees who have taken a reduction in work hours to prevent layoffs or dismissals by their employer.

As a rough illustration: if a firm were to reduce employees' workweeks and pay levels by 20 percent rather than laying off 20 percent of its employees, those employees working short time would receive 20 percent of weekly unemployment insurance benefits. Thus, employees on reduced workweeks would be partially reimbursed for lost earnings and workers would not lose their jobs.

This article explores this approach to combating joblessness by reviewing the history of the "short-time" compensation concept in the United States and examining the operation of a recently initiated program in California against a backdrop of comparable European programs.

Background of the concept

Short-time compensation programs have been widespread and reportedly successful in several European nations since the 1920's but the U.S. unemployment insurance system was not used for such purposes until 1978. Many U.S. unemployment insurance programs have provisions for paying partial benefits for less than a full week of unemployment,² but such benefits are limited roughly to the differences between full weekly benefits and the income earned during the week in question.

For example, if an employee earns \$250 for a 40-hour workweek and is eligible to receive \$100 in benefits for a week of unemployment, he or she could not receive benefits for working say a 32-hour week because earnings for more than 2 days of employment would total more than \$100. Thus partial benefits are not suitable as a worksharing policy.

By contrast, under short-time compensation, unemployment insurance benefits would be paid as a proportion of the maximum benefits available to a worker for a given week if the lost time equals or surpasses an established minimum work time reduction. Thus, a worker eligible to receive a maximum of \$100 in weekly benefits could receive about one-fifth that amount or \$20 for every full day of lost work.

Recent consideration of using short-time compensation within the United States began as a response to the aggravated unemployment problems of New York City in 1975.³ The so-called "Poses Plan" was suggested both to reduce joblessness and to minimize loss of affirmative action gains by preventing the layoff or dismissal of recently hired minority workers.⁴ In March 1976, a bill was introduced to the New York State Assembly to allow unemployment insurance benefits to be paid on a daily rather than weekly basis⁵ but died in committee. (About the same time, Canada implemented a limited pilot study of the short-time compensation concept).⁶

Federal Government interest in short-time compensation has progressed slowly. During 1978 and 1979, the U.S. Department of Labor established a special task force to monitor existing programs, make preliminary assessments of the concept, and explore the possibility of funding a pilot study.⁷ Most recently, members of Congress have indicated an intention to introduce legislation to support development of the program.⁸

Independent of Federal and other initiatives, California examined the concept,⁹ then established an experimental statewide program during mid-1978¹⁰ in response to expected public employee unemployment re-

Fred Best is a policy analyst in and James Mattesich is deputy director of the California Employment Development Department, Sacramento, Calif.

sulting from passage of Proposition 13. The program was rapidly implemented, and although the widespread layoffs expected from Proposition 13 did not materialize, the program has been continued. Although other States have the discretion to establish similar programs, as of early this year, the California program is the only one of its type in the United States.

The California program

California's "Work Sharing Unemployment Insurance" program began as an 18-month experiment and was extended in July 1979 for an additional two years. The basic design is similar to programs which have existed in Europe for several decades. It is operated by the California Employment Development Department, which administers unemployment insurance, disability insurance, and the California State Employment Service.

The legislation creating the program provides that an employer facing a drop in business may choose, instead of layoffs, to reduce the hours and wages of all or a designated part of the work force and share the remaining work among the employees. The reduction must involve not less than 10 percent of the employer's regular permanent work force in the affected work unit or units. In addition, the hours and wages of the affected employees must be reduced by 10 percent or more because the program would be only minimally effective but administratively expensive, at a lower reduction in hours. Each employee included in the program is eligible to receive a weekly unemployment insurance benefit proportional to the percentage reduction in wages and hours.

The program was designed to operate within the existing California unemployment insurance system. Each participating employee must meet basic UI eligibility requirements. In California, these requirements are relatively liberal. Before 1980, a worker must have earned at least \$750 in wages during the 12-month "base period" prior to receiving benefits (increased to \$900 in 1980). That amount of earnings would provide, however, only minimal regular unemployment insurance weekly benefits of \$31. Prior to 1980, the weekly ceiling for unemployment insurance benefits was \$104 (\$120 in 1980) if the recipient earned \$3,308 (\$4,160 in 1980) or more in the highest quarter of his or her base period. Thus a worker who is eligible for maximum weekly benefits would receive \$21 (\$24 in 1980) for each work day lost.

The California legislation allows the payment of worksharing benefits to each participating employee for up to 20 weeks during a 52-week period beginning with the first week benefits are paid. If the 20 weeks are exhausted and workers are then laid off, those who lose their jobs would be eligible for regular unemployment insurance benefits with the duration reduced slightly to

reflect the dollar costs of the worksharing benefits already received.

The Work Sharing Unemployment Insurance program was also designed to interfere as little as possible with existing labor-management relationships. Employers' participation in the shared work program is strictly voluntary. However, if participating employees are covered by a collective bargaining agreement, their union must agree to the plan. Of course, where no agreement exists, the employer is free to decide whether to participate or not. Thus far, there have been no signs of employee resistance to the program in participating firms.

Employers participating in the California program are charged for benefits in the same manner they are charged for regular unemployment insurance benefits. However, participating employers, whose recent history of unemployment insurance benefit charges exceed their contributions ("negative reserve employers"), are required to pay additional unemployment insurance taxes ranging from .5 percent to .3 percent on the first \$6,000 of all employee wages, in succeeding calendar years. These tax increases are intended to discourage use of the program by firms which normally make seasonal layoffs.

To encourage employer participation and to keep "bureaucratic red tape" to a minimum, administration of the program has been kept simple. Employers are only required to call or write for a two-page application form, provide basic employee identifying information, state that work-time reductions are economically necessary and submit information on the amount of wage and hour reductions. If the application for Work Sharing Unemployment Insurance is approved, employers provide their participating employees with a weekly statement of reduced hours and wages which employees then use to claim "shared work" benefits.

The program is intended to prevent layoffs. However, California employers are not required to "document" or prove that a reduction in hours cannot be avoided. Nor are employers prevented from laying off some workers before or after beginning the program. The question of continuation of fringe benefits (health insurance, retirement, etc.) is not addressed in the California legislation and therefore is left to each employer. No restrictions are placed upon the employers' operation of their businesses, including discharges, transfers, and new hires. In addition, the number of participants, as well as the original wage and hour reduction assigned by the employer may be easily changed by means of written notification to the Employment Development Department.

Restrictions on workers who participate are also kept to a minimum. Workers receive their shared work benefits directly from the State by mail. However, an initial claim must be filed personally by each worker at a local branch office of the Employment Development Depart-

ment. The benefits are not taxable under California law but are taxable, to the same extent regular unemployment insurance benefits are, under Federal law.¹²

One restriction on outside or extra work does exist: workers who either "moonlight" or perform work in excess of the "reduced" hours assigned by their employers have such earnings deducted from their shared work benefits.

Workers whose employers have stated that the shared work plan will be used as a temporary measure (defined as fewer than 10 weeks) are automatically exempted from the normal work search requirements that regular unemployment insurance recipients must meet. Employers who state that their expected downturn will last longer than 10 weeks but who believe that the downturn is nevertheless "temporary" in nature may also have their employees exempted from work search requirements simply by providing an explanation as to why they believe the downturn will be temporary. If, however, an employer, who is expecting a permanent work force reduction, uses the shared work program as a transitional mechanism which allows employees to look for other employment while working reduced work hours, those workers receiving benefits must meet the work search requirements of the regular unemployment insurance system. During the first 15 months of the program's existence, only one employer with five workers has used the program in this fashion.

The California program is not widely known. Between July 1978 and the end of September 1979, 312 employers had approved worksharing compensation plans, covering 7,603 employees. Some 3,165 of these employees filed claims and received, on the average, \$23.63 per week for an average of 4.85 weeks. The average number of total dollars paid to worksharing recipients was \$114.65 and the total amount paid in worksharing benefits up to September 1979 was \$263,698.

Use of the program grew slowly at first, with only 67 firms receiving certification between July 1978 and February 1979. However, participation has accelerated with the total number of certified firms increasing to 701 by April 1980. It is commonly assumed that lack of early use and subsequent increases in participation can be largely attributed to gradual growth of awareness of the program. Nonetheless, when one considers that there are over 500,000 firms and 10 million workers in California, it is apparent that the program has thus far been used by a very small number of employers.

The low level of participation and the quality of the data currently available preclude any definitive assessments of the worksharing program at this time. However, existing information can provide some provisional indications. Some 33 percent of certified California firms were in manufacturing and 14.1 percent were in

wholesale and retail trade and services. (See table 1.) Over 75 percent of the 3,165 workers who filed claims for shared work benefits were employed by firms in manufacturing, in contrast to 28.5 percent of workers making regular unemployment claims. (See table 2.)

The relative size of firms participating in the program has been small so far. Roughly 85 percent of participating firms had fewer than 40 employees drawing benefits and only four firms had over 200 employees. (See table 1.)

The typical reduction in workweek and wages used by participating firms in California was 20 percent. About two-thirds of those participating went from 5- to 4-day weeks. About 6 percent of participating employers chose a 10-percent work-time reduction, while 28 percent chose reductions of 30 percent or more. (See table 1.) Only 5 of the 312 certified firms as of September 1979 involved workers with standard workweeks under 35 hours.

Many employers have chosen to apply the reductions only to a portion of their work force. The 312 employers using the program through September of last year employed 14,273 workers, but only 7,603 employees

Table 1. Comparison of California firms using Work Sharing Unemployment Insurance and regular layoffs under Unemployment Insurance, 1976-77

Characteristics	Participants under worksharing benefits ¹		Layoffs under Unemployment Insurance ²	
	Number	Percent	Number	Percent
Total	312	100.0	435,417	100.0
Industrial sector				
Agriculture	8	2.6	36,117	8.3
Mining and energy	1	.3	932	.2
Construction	8	2.6	42,356	9.7
Manufacturing	104	33.3	36,477	8.4
Transportation	24	7.7	13,219	3.0
Retail and wholesale	44	14.1	131,538	30.2
Finance, real estate	3	1.0	34,783	8.0
Services	38	12.2	137,589	31.6
Other	82	26.3	2,406	.6
Size of firm				
Under 50 workers	244	78.2	472,972	94.0
51-100 workers	39	12.5	14,727	3.1
101-200 workers	16	5.1	5,763	1.2
201-500 workers	10	3.2	5,646	1.2
501-1,000 workers	3	1.0	1,238	.3
Over 1,000 workers	0	—	905	.2
Portion of work force affected				
Under 20 percent	28	9.0	—	—
21-40 percent	37	11.9	—	—
41-60 percent	59	18.9	—	—
61-80 percent	58	18.6	—	—
81-100 percent	130	41.7	—	—
Unionization				
Unionized	34	10.9	—	—
Non-unionized	278	89.1	—	—
UI reserve account status				
Positive account	251	78.2	243,399	55.9
Negative account	45	14.0	76,085	17.5
Non-rated	25	7.8	109,704	25.2
No longer in business	—	—	6,265	1.4

¹ California Employment Development Department is the source (Sept. 30, 1979).

² UI Claimant Characteristics Study, July 1, 1976 and June 30, 1977. Employment Data and Research Division, California Employment Development Department, is the source (January 1979).

Table 2. Comparison of California workers experiencing Work Sharing Unemployment Insurance and layoffs with regular Unemployment Insurance, 1976-77

Characteristics	Participants under worksharing ¹		Layoffs under unemployment insurance ²	
	Number	Percent	Number	Percent
Total	3,165	100.0	5,687	100.0
Sex				
Men	1,963	62.0	3,420	60.5
Women	1,171	37.0	2,237	39.5
Age				
Under 20 years	158	5.0	792	14.0
20-29 years	1,076	34.0	1,586	28.0
30-39 years	1,044	33.0	1,284	22.7
40-49 years	412	13.0	842	14.9
50-59 years	348	11.0	710	12.6
60 years and over	95	3.0	367	6.5
Unknown	32	1.0	76	1.3
Race				
White	1,614	51.0	3,305	58.4
Non-white	1,451	49.0	1,452	41.6
Normal weekly income				
\$0-99	31	1.0	803	14.1
\$100-199	1,646	52.0	2,430	42.8
\$200-299	1,076	34.0	1,209	21.3
\$300-399	317	10.0	546	9.6
\$400-499	32	1.0	445	7.8
\$500 and over	31	1.0	...	...
Unknown	32	1.0	248	4.4
Unionization				
Unionized	816	25.8	933	16.5
Non-unionized	2,349	74.2	4,281	75.7
Unknown	...	...	443	7.8
Weekly benefits received				
Under \$25	NA	NA	...	...
\$26-40	NA	NA	767	13.6
\$41-60	NA	NA	1,191	20.1
\$61-80	NA	NA	1,405	24.8
\$81-100	NA	NA	832	14.7
Over \$100	NA	NA	1,462	26.8
Industrial sector				
Agriculture	4	.1	362	6.4
Mining and energy	10	.3	22	.4
Construction	19	.6	570	10.1
Manufacturing	2,389	75.5	1,611	28.5
Transportation	5	.2	272	4.8
Retail and wholesale	174	5.5	1,363	24.1
Finance, real estate	14	.4	226	4.0
Services	226	7.1	1,203	21.3
Unknown	324	10.0	28	.5

¹ California Employment Development Department is the source (Sept. 30, 1979).

² UI Claimant Characteristics Study, July 1, 1976 and June 30, 1977. Employment Data and

Research Division, California Employment Development Department, is the source (January 1979).

were included in the program. In this group, unionized firms had 4,587 employees but only 1,294 were certified to use the program. Also, it appears that significant portions of work forces not included in the program may be salaried and white-collar employees who are not commonly laid off, or members of units working at full staff.¹³

It is particularly noteworthy that California firms which have thus far utilized worksharing unemployment compensation appear to have healthier unemployment insurance tax accounts than those using regular layoffs. Over 78 percent of the firms participating in the program had account status in which tax contributions to unemployment insurance have been greater than with draws in contrast to 63 percent of other firms. This suggests that the program may not be unduly subsidi-

dizing seasonal employers, and that the program's special surtax provides a disincentive to participation by such firms.

Of the 7,603 workers approved to receive Work Sharing Unemployment Insurance benefits by September 1979, only 3,165 actually filed claims. Preliminary indications are that many employers who believed that they would have to lay off workers or cut workweeks obtained certification for benefits but ultimately found its use unnecessary. In addition, it appears that a significant proportion of employees within firms using the program have failed to submit their claims for benefits.

The incidence of union affiliation has so far been higher among benefit claimants than among workers claiming regular unemployment benefits. That is, 25.8 percent of the workers claiming shared work benefits up

to September 1979 were unionized as compared to 16.5 percent of regular benefit claimants. While this issue requires more detailed assessment, it would appear that unionization has not deterred participation.

No clear picture emerges from breakdowns of shared work benefit claimant data by age, race, and sex. The proportion of younger workers is lower among work-sharing unemployment claimants than among regular unemployment claimants, indicating that junior workers are retained rather than laid off. Breakdowns by race and sex are puzzling. If minorities and women are laid off before other employees, their proportions should be higher among those claiming regular unemployment benefits than among those claiming worksharing benefits. Curiously, there is little difference by sex, and the proportion of minority workers using worksharing benefits is higher than the proportion using regular unemployment benefits. These figures could indicate that the new program is used more among firms with high proportions of minority and women workers, or that many minorities and women are ineligible for unemployment insurance, or that there are inaccuracies in the available data.¹⁴ More detailed analysis will be necessary to assess the implications of Work Sharing Unemployment Insurance for affirmative action programs.

In addition to statistics, opinions were collected from representatives of participating firms and unions to get some indication of how the program had been received. Early in December 1979, representatives from 30 firms which actually used the program were interviewed by phone. Of these firms, 25 strongly favored the program and 5 were neutral. Firm representatives favored the program because it helped them retain valued employees, was generally appreciated by workers, and was easy and flexible to administer. Representatives from 20 of the 36 local unions participating in the program prior to December 1979 were also interviewed. Fourteen favored the program, 3 were neutral or unaware of the program, and 3 had not actually used the program. Major reasons for approval were that use of the program was fairer than layoffs, and workers were generally better off financially because only a portion of earnings were lost and most fringe benefits were maintained. Four union representatives reported initial resistance to the program from their members, but also noted that opposition had lessened once workers became familiar with the program.

These are all only preliminary indications as the data currently available do not permit a definitive assessment of the California program's impact. However, information from other sources can augment what we now know about such programs. The concluding section will deal with comparable programs in Europe. In an appendix, we discuss the results of a hypothetical cost-benefit analysis of short-time compensation.

Short-time compensation in Europe

Programs similar to California's "Work Sharing Unemployment Insurance" have been in effect within the Federal Republic of Germany, Belgium, France, Italy, Great Britain, Luxemburg, Denmark, The Netherlands, Norway, Austria, and most recently on the North American continent in Canada.¹⁵ Of these short-time benefit programs, the German program most closely parallels the framework of the California program (and of those being discussed in the United States). We will concentrate on it.

The German short-time allowance scheme was first delineated in the Placement and Unemployment Insurance Act of July 1927.¹⁶ The law has been revised several times. The most recent amendments were in the Employment Promotion Act of June 1969.

The program is administered by the Federal Labor Institute, an independent organization composed of representatives of labor, business, and the government, which administers unemployment insurance, unemployment assistance, and other labor market measures.¹⁷

In West Germany, worker eligibility for short-time benefits is determined by eligibility for unemployment insurance. All these programs are financed by a 3-percent payroll tax divided equally between employers and employees up to an earnings ceiling.¹⁸

The program is available to firms with at least one paid employee. To become eligible, a firm must demonstrate that a reduction in hours of labor is unavoidable, and that work time reductions with short-time benefits will prevent dismissals.¹⁹ Furthermore, employers must document that work-time reductions of 10 percent or more have been made for one-third or more of their employees for a period of four continuous weeks or more.²⁰ Eligibility has traditionally been denied to firms and industries showing signs of permanent decline.²¹

German law requires that decisions to reduce work time or lay off workers must be agreed to by the employer and the Worker Councils established within most firms.²² If the Worker Council consents to the program, it is binding upon the affected workers. Dissenting workers can only resign to avoid a shorter workweek.²³

The German program appears to allow firms considerable discretion in determining what portions of their work forces go on short-time and how use of short-time is adjusted over time. Employers also are allowed to transfer workers within the firm, and some workers may be discharged and others hired so long as most employees retain their jobs.²⁴

Once eligibility is determined, the Federal Labor Institute authorizes the payment of specified benefit amounts to workers. The firm pays these benefits directly to its employees, and is reimbursed by the government. As in the California program, the amount of

short-time benefits given to claimants is determined by the proportion of full-time unemployment that work-time reductions comprise. The program replaces between 60 and 68 percent of earnings lost because of reduced work time.²⁵ Short-time benefits have a ceiling but are tax free.²⁶ However, benefits are reduced by 50 percent of earnings received by recipients for work performed in excess of the reduced work hours provided by the primary employer.²⁷

However, available data show that some 90 percent of German recipients do not have their payments limited by the maximum benefit ceiling; and among this large subgroup of participants take-home incomes are almost always maintained at 80 to 90 percent of regular earnings,²⁸ depending on the extent of work-time reduction.

Firms participating in the program are required to assume the full costs of public health insurance and retirement programs, which, outside the program, are split evenly between employer and employee. However, the government will, on occasion, reimburse firms for up to 50 percent of the cost of health insurance and 75 percent of the cost of retirement programs.²⁹ In some cases, curtailment of full private fringe benefits which are related to pay levels may occur, but such reductions are typically minor.³⁰

The normal maximum duration of benefits is 6 months, but it can be extended for up to as much as 2 years.³¹

While the extent and duration of work-time reductions under the German program varies, a "rule of thumb" generalization is that most beneficiaries had their work time shortened by about 40 percent and that duration has been under 3 months for most participants. Between 1972 and 1977, some 92 percent of beneficiaries suffered a loss of work time of under 50 percent of standard hours, and 57 percent experienced a loss of less than 25 percent. Between June 1977 and June 1978, 56 percent of participating workers received benefits for under 3 months and only 6 percent received benefits for periods lasting longer than 1 year.³²

Utilization of short-time compensation varies markedly with the business cycle, particularly during the early stages of an economic downturn when firms are not sure whether dismissals and long-term layoffs are necessary. This pattern is empirically dramatized by the rapid upsurge of utilization of short-time compensation at the beginning of the 1975 recession, followed by a decline in use despite the fact that unemployment levels did not fall appreciably. (See table 3.)³³

Ninety-five percent of German workers receiving short-time payments are in manufacturing, mining, and construction. Within these sectors, payment of short-time benefits for shorter working hours is most widely used in all stages of the fabrication of metal products,

Table 3. Annual averages of unemployment and workers under short-time compensation, West Germany, 1968-78

Year	Registered short-time workers	Registered unemployment (number)	Unemployment rate
1968	10	323	1.3
1969	1	179	.7
1970	10	149	.6
1971	86	185	.7
1972	76	246	.9
1973	44	273	1.0
1974	292	582	2.2
1975	773	1,074	4.7
1976	277	1,060	4.6
1977	231	1,030	4.5
1978 ¹	250	1,000	...

¹ 1978 figures are preliminary.

NOTE: Unemployment figures are based on the number of registrations at government Employment Service Offices. It is estimated that about 75 percent of the unemployed workers in West Germany register. Unemployment rates are computed on the basis of registered unemployment figures.

SOURCE: *Annual Report for 1976*, Bundesantap Fur Arbeit, Republic of West Germany, pages 8 and 65; and *Arbeits- und Sozialstatistik*, Federal Ministry of Labor and Social Affairs, Republic of West Germany, March 1978. Data for 1977 and 1978 cited from Gunther Schmid, "Selective Employment Policy in West Germany: Some Evidence of Its Development and Impact," Discussion Paper Series, International Institute of Management, Berlin, July 1978, page 14.

ranging from the mining of iron and coal to the production of steel, machinery, automobiles, and ships. Electrical products, textiles and construction industries follow in that order.

In contrast to the California program, between one-third and one-half of all workers receiving short-time benefits were employed in large firms with more than 500 workers. Nonetheless, employers with more than 500 employees represented only 5.5 percent of the total number of firms using the program in 1978.

The widespread use of the program in Germany has led observers to conclude that the program has significantly attenuated unemployment. One study has estimated that use of the program reduced full-time unemployment by approximately 175,000 in 1975, and some 52,000 in 1977. (See table 4.)³⁴ Thus, some observers claim that without the program, full-time unemployment would have been about 16 percent higher in 1975, and about 5 percent higher in 1977.

Despite general agreement that short-time compensation effectively prevents layoffs, the available data leave a number of unanswered questions concerning its job-saving effects. It has been noted that the aggregate work-time reductions have been significantly greater than the estimated reductions of full-time unemployment. (See table 4.) Most analysts suggest that this difference comes primarily from a "silent reserve" (*Stille Reserve*) of employees on reduced work time who do not or cannot claim short-time benefits,³⁵ but the phenomenon is yet to be fully explained.

Questions and prospects

Despite generally laudatory reports from European representatives of labor, business, and government

Table 4. Estimated impact of short-time compensation on work time and unemployment, West Germany, 1973-77

(Numbers in thousands)

Year	Registered short-time employees	Reduction of full time equivalent work time (employees)	Reduction of full time equivalent unemployment due to short time (employees)
1973	44	16	11
1974	293	106	70
1975	773	272	175
1976	277	90	60
1977	231	77	52
1978 ¹	250	84	56

¹ 1978 figures are preliminary.

SOURCE: *Mitteilungen aus der Arbeitsmarkt- und Berufsforschung* ("The Development of the Labor Market in the Federal Republic of Germany in 1977"), No. 1, 1977, page 8. (Interpretation of data provided by Beatrice Reubens, Conservation of Human Resources, Columbia University, New York.) Data for 1977 and 1978 cited from Gunther Schmid, "Selective Employment Policy in West Germany: Some Evidence of Its Development and Impact," International Institute of Management, Berlin, Discussion Paper Series, July 1978, page 14.

about short-time programs,³⁶ a number of reservations have been expressed about the applicability of the concept to the United States. For example, different levels of labor market competition would make the program far less attractive to U.S. firms. Furthermore, European legal restraints on layoffs, particularly those in Germany, are likely to make short-time compensation far more acceptable in Europe. Moreover, large portions of European fringe benefits are administered by the government, thus reducing fixed costs of labor which are likely to deter U.S. firms from participation. Finally, the maximum benefit ceiling for the German program is considerably higher than most American ceilings.³⁷ This difference is assumed to reduce opposition from senior employees in Germany to a much greater degree than would be likely in the United States.

While there are still many unanswered questions, available information suggests that short-time compensation can do little to help persons who are out of work because they have just entered or re-entered the labor force. Nor is it likely to help those who have already been laid off or voluntarily left their jobs. However,

short-time compensation does have potential to prevent full-time job loss among the 3 to 5 million American workers subject to layoffs who comprise about half of the unemployed population.³⁸

Despite the potentials of short-time compensation, there are many reservations about its widespread application in the United States. Some union representatives have expressed fear that use of short-time compensation would disrupt hard-won seniority provisions and established union procedures. It has been suggested that layoffs according to seniority are fair and that use of shorter workweeks as an alternative to layoffs would lead to wage losses among higher-paid senior workers. In addition, there is concern that use of the program would stimulate conflicts among workers, leading to a reduction of union solidarity and bargaining power and presenting numerous administrative complications which would effectively prevent certain types of workers from receiving benefits, encourage firms to instigate greater aggregate work-time reductions than would be the case under layoffs, and reduce political pressures for full employment.³⁹ Yet a 1978 survey of the American labor force indicates that the worksharing unemployment insurance concept is supported by an overwhelming majority of workers.⁴⁰

Some members of the business community have also expressed concern that the program would ultimately be imposed on firms, encourage unions to push for shorter workweeks, and subsidize marginal firms at the expense of healthy ones. While these reservations are not unanimously expressed by all sectors and levels of labor and business,⁴¹ they do represent important issues which must be dealt with prior to widespread acceptance of short-time compensation as a major social policy.

The future of short-time compensation within the United States will be determined ultimately by discussions among advocates and opponents, research and policy evaluation,⁴² and perhaps further experimentation and trial runs. □

— FOOTNOTES —

¹ For a compendium of viewpoints on worksharing and its alternative forms, see *Work Time and Employment*, Special Report No. 28, National Commission for Employment Policy, Washington, D.C., October 1978. For a description and assessment of seventeen varied worksharing proposals, see Fred Best, *Work Sharing: Policy Options and Assessments*, Forthcoming Monograph, Upjohn Institute for Employment Research, Kalamazoo, Michigan, 1980.

² Daniel Hamermesh, "Unemployment Insurance, Short-Time Compensation and the Workweek," *Work Time and Employment*, pp. 235-238.

³ Edith F. Lynton, "Alternatives to Layoffs," Conference Report for the New York City Commission on Human Rights, New York, April 1975.

⁴ Elinor Holmes Norton has urged consideration of the concept ("Testimony of Emile Heller," *Leisure Sharing*, Hearings of the Senate Select Committee on Investment Priorities and Objectives, California

State Senate, Sacramento, California, Nov. 1, 1977, pp. 153-163, and submitted statement); and Alfred Blumrosen and Ruth Blumrosen, "The Duty to Plan for Fair Employment Revisited: Work Sharing in Hard Times," *Rutgers Law Review*, Summer 1975, pp. 1082-1106.

⁵ This bill was last submitted to the New York State Legislature on Mar. 30, 1976 under the Number 11819 by Assembly Member Seymour Posner.

⁶ "Work Sharing in Canada," Department of Employment and Immigration, Ottawa, Canada, April 1978; and Peter Sadler-Brown, *Work Sharing in Canada: Problems and Possibilities*, C.D. Howe Research Institute, Montreal, Canada, HRI Observations Report No. 18, June 1978.

⁷ The reports prepared as a result on this committee's activities are summarized in *Short-Time Compensation*, *UI Occasional paper*, Office of Research, Legislation and Program Policies, Unemployment Insur-

ance Service, Employment and Training Administration, U.S. Department of Labor, Washington, D.C., Forthcoming in 1980.

⁸ Legislation has been drafted for submission by Patricia Schroeder, U.S. House of Representatives.

⁹ "Statement of Gene Livingston, Chief Deputy Director of the California Employment Development Department," *Leisure Sharing*, Hearings of the California State Senate Select Committee on Investment Priorities and Objectives, Sacramento, California, Nov. 1, 1977, pp. 66-81.

¹⁰ Senate Bill No. 210, introduced by William Greene, California State Senate, Sacramento, California, May 7, 1979.

¹¹ For example, if a recipient was eligible for a total of \$3,120 in UI benefits (which is the maximum 1980 weekly benefit of \$120 for 26 weeks), and received a total of \$480 or \$24 a week in worksharing benefits for 20 weeks, he or she would have \$2,640 (\$120 a week for 22 weeks) worth of regular UI if laid off after using the shared work program.

¹² If individual annual incomes are over \$10,000 or joint spouse annual incomes are over \$25,000, unemployment insurance benefits are taxable under Federal law.

¹³ In remarks to the National Commission on Unemployment Compensation in New York, New York on Aug. 24, 1979, John L. Zalusky, an economist with the AFL-CIO Department of Research, argued that the worksharing program may be used selectively so that lower-skilled and junior employees are laid off with the program being used to retain higher skilled or senior workers, thus defeating much of the affirmative action goals of the program.

¹⁴ *UI Claimant Characteristics Study*, July 1, 1976, and June 30, 1977, Employment Data and Research Division Estimates Group, California Employment Development Department, Sacramento, California, January 1979, p. 9.

¹⁵ Peter Henle, *Work Sharing as an Alternative to Layoffs*, Congressional Research Service, Library of Congress, July 19, 1976; and Richard Belous and Sar Levitan, *Shorter Hours, Shorter Weeks*, Baltimore, Johns Hopkins University Press, 1977.

¹⁶ *Placement and Unemployment Insurance Act*, July 16, 1927, pp. 116-19.

¹⁷ Paul Fisher, "Notes on Work Sharing in the Federal Republic of Germany in 1978," unpublished paper prepared for the Office of Research and Development, Employment and Training Administration, U.S. Department of Labor (Contract No. 20-24-78-48), July 1978, pp. 3-4.

¹⁸ Paul Fisher, *op. cit.*, pp. 4-5.

¹⁹ Paul Fisher, *op. cit.*, pp. 4-5.

²⁰ *Ibid.*, p. 4; and Fred Best, "Short-Time Compensation and Work Sharing," National Commission for Employment Policy, Washington, D.C., April 1978, p. 8.

²¹ Paul Fisher, *op. cit.*, p. 5.

²² Bruce Millen, "Job and Income Protection Measures for Worker in Sweden, Germany and England," Office of the Assistant Secretary for Policy, Evaluation and Research, U.S. Department of Labor, July 13, 1978, p. 10.

²³ Paul Fisher, *op. cit.*, p. 7.

²⁴ *Ibid.*, p. 6.

²⁵ *Ibid.*, p. 4; and Axel Mittelstadt, "Unemployment Benefits and Related Payments in Seven Major Countries," *Reexamining European Manpower Policies*, Special Report No. 10, August 1976, pp. 179-82.

²⁶ Paul Fisher, *op. cit.*, p. 8.

²⁷ *Ibid.*, p. 4.

²⁸ *Ibid.*, p. 17.

²⁹ *Ibid.*, pp. 5 and 8.

³⁰ *Ibid.*, p. 6.

³¹ *Ibid.*, p. 4; and Sar Levitan and Richard Belous, *op. cit.*, p. 62.

³² *Ibid.*, pp. 15-16.

³³ Gunther Schmid, "Selective Employment Policy in West Germany: Some Evidence of Its Development and Impact," Discussion Paper Series, International Institute of Management, Berlin, West Germany, July 1978, p. 14.

³⁴ Gunther Schmid, *op. cit.*, p. 14.

³⁵ *Ibid.*, p. 16.

³⁶ "Short-Time Compensation," *What's New In Labor and Social Policy*, Federal Republic of West Germany, Embassy to the United States, April-May 1976, p. 7; and Kurt W. Rothschild, "Working Time and Unemployment," paper prepared for the National Commission for Employment Policy, University of Linz, Austria, presented July 1978, pp. 5-10.

³⁷ In Germany, maximum UI and worksharing benefits are determined annually, to be 163 percent of average gross earnings for all insured workers, while the highest UI ceiling in the U.S. is a relatively low 67 percent of the average income of covered workers (Paul Fisher, *op. cit.*, p. 17).

³⁸ *1979 Employment and Training Report of the President*, p. 274, Table A-27.

³⁹ Zalusky, *op. cit.*; Howard Young, "Comment on the Need for Work Time Reduction," *Work Time and Employment*, *op. cit.*; "A Cure for Unemployment," *Business Week*, Oct. 29, 1979, pp. 163-64; Sadlier-Brown, *op. cit.*, pp. 16-17; and Fred Best, Gary Lefkowitz, Maureen McCarthy, Gail Rosenberg and Barry Stern, "Exploratory Survey on Short-Time Compensation," paper prepared for Office of Research and Development, Employment and Training Administration, U.S. Department of Labor, June 23, 1978.

⁴⁰ Fred Best, *Exchanging Earnings for Leisure: Findings of an Exploratory National Survey on Work Time Preferences*, Research and Development Monograph No. 79, Office of Research and Development, Employment and Training Administration, U.S. Department of Labor, Washington, D.C., 1980, pp. 111-18.

⁴¹ Best, Lefkowitz et al., *op. cit.*; "A Cure for Unemployment," *op. cit.*, pp. 163-64.

⁴² For example, the California "Work Sharing Unemployment Insurance" is now under an intensive 2-year evaluation sponsored by the California Employment Development Department and the U.S. Department of Labor. The final analysis will be issued before that date. Such research, ongoing dialogue, and possible experimental programs in other States should shed light on the applicability of short-time compensation in the United States.

APPENDIX: Economic Costs and Benefits

The economic costs and benefits of short-time compensation must be determined by empirical evaluation of working programs. However, data on the costs of labor and social programs can be used to illustrate likely economic impacts of using short-time compensation instead of layoffs. This can be accomplished by a hypothetical example developed to contrast laying off 20 percent of low seniority and low income employees with a 20 percent (1 day) work-time reduction with short-time benefits within a fictitious firm employing 100

wage earning workers. These workers, are postulated to have average 1980 U.S. pay levels and benefits under the income tax and unemployment insurance benefit conditions existing in California. Further, the income and fringe benefits are distributed within this fictitious group of workers roughly to reflect prevailing U.S. conditions. Thus, the highest paid 20 percent receives a gross weekly wage of \$380, the average worker gross weekly earnings of \$265, and the lowest 20 percent a gross weekly income of \$155. The lowest paid 20 per-

cent are assumed to have low seniority and be subject to layoffs when they occur. The estimated economic impacts of short-time compensation and layoffs under these conditions are shown in appendix table 1.

The use of short-time compensation as opposed to layoffs will produce economic gains for junior workers at the expense of those with seniority, minimize losses to all parties due to reduced income taxes and short-time benefits, and improve the aggregate economic well-being of the total work group with a 4-day workweek. For example, high seniority workers (top fifth earning level) would take home net weekly paycheck of \$268.48 or about 91 percent of the \$294.94 they would receive under full-time work conditions. Low-seniority employees (lowest earning levels) would take home \$128.16 under short-time compensation, in comparison to the \$74 in unemployment insurance benefits they would receive if totally laid off. The average worker would maintain about 92 percent of his or her regular take home earnings under short-time.

Under short-time compensation, all workers would maintain some degree of job attachment, as well as all or most of the fringe benefits which accompany employment. When the value of these benefits is added to net pay, the average employee under short-time compensation would maintain 94.2 percent of total full-time "take home" compensation as opposed to 92.5 percent under layoffs. Additionally, all workers experiencing reduced workweeks would have an additional day off and

higher effective per hour pay rates due to the partial income subsidy. Finally, because approximately one-fifth of unemployment insurance applications are judged ineligible due to inadequate base earnings,¹ low seniority workers without eligibility would maintain at least partial wages as opposed to complete loss of income resulting from total layoff.

Although firms will spend more per hour of labor on fixed fringe benefit commitments, overall labor costs are likely to be lower under the program because reductions in work time for all employees will tend to reduce average weekly wages. The average sum of wage and benefit costs per hour in this example is \$9.81 under the program as opposed to \$10.22 under regular layoffs and \$9.26 under standard full-time conditions. Lower turnover costs resulting from avoidance of recall, new hiring, and training would likely lead to further savings by firms. These savings are likely to be at least partly counterbalanced by a slight increase of unemployment compensation taxes on the firm as a result of higher partial unemployment insurance payment given to senior workers with large base earnings. Of course, hourly labor costs can be expected to be higher under both short-time compensation and layoffs than they would be under full-time conditions, suggesting that firms would not wish to utilize the program unless confronted with economic problems.

Presumed benefits to workers and firms resulting from use of short-time compensation may be gained

Appendix table 1. Hypothetical¹ comparison of costs and benefits of short-time compensation and layoffs to the firm, workers, and government

[Typical firm=100 production workers over one week]

Cost and income factors	Standard employment conditions: 100 workers on 40-hour workweeks						Total cost for 100 workers
	Average worker		Highest paid 20 percent of workers		Lowest paid 20 percent of workers		
	Cost per week	Cost per hour	Cost per week	Cost per hour	Cost per week	Cost per hour	
Impact on workers:							
Income and benefits							
Total gross wage, unemployment insurance and benefits	\$349.80	\$8.75	\$501.60	\$12.54	\$204.60	\$5.12	\$35,112.00
Total net wage, unemployment insurance, and benefits	302.36	7.56	416.54	10.41	187.40	4.69	30,220.80
Total net wage and unemployment insurance	217.56	5.44	294.94	7.37	137.80	3.45	21,708.40
Wages							
Gross wages ²	265.00	6.03	380.00	9.50	155.00	3.88	26,600.00
Net wages (after taxes) ³	217.56	5.44	294.94	7.37	137.80	3.45	21,708.40
Total fringe benefits ⁴	84.80	2.12	121.60	3.04	49.60	1.24	8,511.00
Unemployment insurance ⁵	.....	.....	.....	.....	.....	.....	.....
Impact on firms:							
Total labor costs	368.96	9.22	527.81	13.20	217.08	5.43	37,035.40
Total gross wages	265.00	6.63	380.00	9.50	155.00	3.88	26,600.00
Total fringe benefits ⁴	84.80	2.12	121.60	3.04	49.60	1.24	8,511.00
Payroll taxes:							
Unemployment insurance (year's average rate) ⁶	2.92	.07	2.92	.07	2.98	.07	293.20
Social security ³	16.24	.41	23.29	.58	9.50	.24	1,630.20
Turnover costs ⁷	.....	.....	.....	.....	.....	.....	.....
Impact on Unemployment Insurance:							
Unemployment Insurance system							
Benefit payments ⁵	.....	.....	.....	.....	.....	.....	.....
Tax revenues ⁶	2.92	.....	2.92	.....	2.92	.....	.....
Other Government programs							
Program expenditures ⁷	.....	.....	.....	.....	.....	.....	.....
Social security tax revenues ³	16.24	.....	23.29	.....	9.50	.....	1,630.20
Income tax revenues ³	47.44	.....	85.06	.....	17.20	.....	4,891.60

Appendix table 1. Hypothetical¹ comparison of costs and benefits of short-time compensation and layoffs to the firm, workers, and government—Continued

[Typical firm=100 production workers over one week]

Cost and income factors	Comparison of alternative methods of reducing worktime by 20 percent															
	Layoffs of 20 percent of work force							Reduced workweek: 100 workers on 32-hour weeks								
	Retained workers				Laid off: lowest paid 20 percent of workers			Total cost for 100 workers	Average worker			Highest paid 20 percent of workers		Lowest paid 20 percent of workers		Total cost for 100 workers
	Average worker		Highest paid 20 percent of workers		Cost per week	Total cost	Cost per week		Cost per hour	Cost per week	Cost per hour	Cost per week	Cost per hour			
	Cost per week	Cost per hour	Cost per week	Cost per hour										Cost per week	Cost per hour		Cost per week	Cost per hour
Impact on workers:																
Income and benefits																
Total gross wage, unemployment insurance, and benefits	\$349.80	\$8.75	\$501.60	\$12.54	\$74.00	\$1,480.00	\$32,500.00	\$318.20	\$9.94	\$449.60	\$14.05	\$188.40	\$5.88	\$31,852.00		
Total net wage, unemployment insurance, and benefits	302.36	7.56	416.54	10.41	74.00	1,480.00	27,952.40	285.33	8.92	390.04	12.19	177.76	5.56	28,476.60		
Total net wage and unemployment insurance	217.56	5.44	294.94	7.37	74.00	1,480.00	20,432.40	200.53	6.27	260.48	8.19	128.16	4.01	19,964.60		
Wages																
Gross wages ²	265.00	6.63	380.00	9.50	...	...	24,980.00	212.00	6.63	304.00	9.50	124.00	3.88	21,280.00
Net wages (after taxes) ³	217.56	5.44	294.94	7.37	...	...	18,992.40	179.11	5.60	244.48	7.64	113.36	3.54	17,904.60
Total fringe benefits ⁴	94.80	2.12	121.60	3.04	...	...	7,520.00	84.80	2.65	121.60	3.80	49.60	1.55	8,511.00
Unemployment insurance ⁵	...	...	...	...	74.00	1,480.00	...	21.40	...	24.00	...	14.80	...	2,060.00
Impact on firms:																
Total labor costs	368.96	9.22	527.81	13.20	...	...	32,693.80	312.73	9.77	447.19	13.97	184.15	5.75	31,390.60
Total gross wages	265.00	6.63	380.00	9.50	...	...	23,500.00	212.00	6.63	304.00	9.50	124.00	3.88	21,280.00
Total fringe benefits ⁴	84.80	2.12	121.60	3.04	...	...	7,520.00	84.80	2.65	121.60	3.80	49.60	1.55	8,511.00
Payroll taxes:																
Unemployment insurance (year's average rate) ⁶	2.92	.07	2.92	.07	...	...	233.60	2.93	.09	2.96	.09	2.95	.09	293.80
Social security ³	16.24	.41	23.29	.58	...	...	1,440.20	13.00	.41	15.64	.58	7.60	.24	1,304.80
Turnover costs ⁷	...	...	...	...	↑	↑	...	...	...	...	...	...	...	...
Impact on Unemployment Insurance:																
Unemployment Insurance system																
Benefit payments ⁵	...	...	...	...	74.00	1,480.00	1,480.00	21.40	...	24.00	...	14.80	...	2,060.00
Tax revenues ⁶	2.92+	...	2.92	...	...	...	233.60	2.93	...	2.95	...	2.95	...	293.80
Other Government programs																
Program expenditures ⁷	...	...	...	...	↑	↑	...	...	...	...	...	...	...	...
Social security tax revenues ³	16.24	...	23.29	...	...	...	1,440.20	13.00	...	18.64	...	7.60	...	1,304.80
Income tax revenues ³	47.44	...	85.06	...	...	...	4,547.60	32.87	...	59.52	...	10.64	...	3,375.40

¹ The assumptions underlying the table are: (1) 40-hour workweek with no overtime, (2) all employees eligible for unemployment insurance, (3) lowest paid 20 percent of workers are also lowest seniority and subject to layoffs, (4) distribution and levels of wages and benefits approximate late 1979 conditions for nonsalaried U.W. production workers, and (5) taxes and unemployment insurance benefits based on California conditions.

² Gross average weekly wage approximated from August 1979 average U.S. manufacturing workers' weekly income (*Monthly Labor Review*, October 1979, page 98), and typical distribution of earnings within a work group of 100 employees into highest 20 percent and lowest 20 percent approximated from national income distribution patterns for male wage earners in manufacturing industries (*Current Population Reports, Consumer Income*, Series P. 60, No. 118, March 1979, pp. 228-29).

³ Dollar amount of taxes deducted from gross weekly earnings to determine net earnings based on Federal and California income tax withholding rates for a worker with three exemptions (California Employment Development Department, January 1979), and 1979 Social Security tax rates requiring payment of 6.13 percent of the first \$22,900 of individual annual earnings by both employer and employee.

⁴ Dollar cost of fringe benefits such as medical care, private retirement pensions and paid time off computed as 32 percent of gross earnings based on available data (*Handbook of La-*

bor Statistics 1977, page 237) and *Employment Benefits* (U.S. Chamber of Commerce, 1975).

⁵ Full weekly unemployment insurance benefits and 20 percent benefits based on California benefit determination formula in effect in January 1980. Full unemployment insurance benefits would be \$74 a week for a fully unemployed worker earning \$165 a week, \$107 for a worker earning \$265 a week, and \$120 for a worker earning \$380 a week or more. The California unemployment insurance benefit ceiling is \$120 a week.

⁶ Unemployment insurance tax payments computed from estimated typical employer unemployment insurance tax based on average 1977 California tax rate of 2.46 percent (*Actuarial Report of the California Unemployment Fund*, 1977, pp. 28-29) adjusted upward 4 percent to account for employee turnover (*Employment and Training Report of the President*, 1979, p. 332) and prorated over one-year period to represent average unemployment tax expenditures by employer on first \$6,000 of employee earnings for varied levels of continuously earned annual income.

⁷ Because of the unavailability of acceptable data showing dollar amounts of employer turnover costs resulting from hiring and training, and public program expenditures associated with varied levels and types of work losses, it was necessary to note expected impacts in terms of (↑) for increased expenditures, (—) for no change in expenditures, and (↓) for reduced expenditures.

through increased costs to the Nation. For instance, if the duration of unemployment is presumed to be equivalent, the level of average benefits is likely to be higher than unemployment insurance payments because benefits for senior workers with higher earnings will be greater than those collected by low-paid junior workers. Such extra costs are likely to be partially recouped over the long run by increased unemployment insurance taxes for firms participating in the program. Use of short-time compensation will also reduce general tax revenues received by the government. Because workers, particularly those with higher incomes, will pay proportionally less income taxes with reduced earnings, total revenues from income taxes will be lower. Specifically, the weekly

State, Federal and social security taxes collected from the average program participant in our hypothetical example would be \$59.88, as opposed to \$46.80 for the same worker experiencing layoffs. To some degree, these losses will be slightly offset by lower expenditures on public programs such as food stamps, social security and Medicare for work groups using short-time compensation as opposed to layoffs.²

APPENDIX FOOTNOTES

¹ *Actuarial Report of the California Unemployment Fund*, Milliman and Robertson, Inc., San Francisco, 1977.

² Fred Best, "Short-time Compensation and Work Sharing", p. 18.

Probing the issues of unemployment duration

Data ambiguity and measurement problems have created controversy in interpreting unemployment duration; after a careful review of the issues, most jobless spells appear short but persistent unemployment is important; recession extends duration for all

NORMAN BOWERS

If most persons experiencing unemployment remain jobless for only a short period, is the labor market so active that the unemployed easily find their usual kind of work? And, as a corollary, that chronic and persistent joblessness is unimportant? Or do such data merely reflect the frequent movement away for unstable and marginal jobs that are considered unsuitable?

Whatever one's belief concerning the efficacy of different theories of unemployment and the labor market, accurate measures of various dimensions of the incidence and duration of unemployment are important. The purpose of this article is to discuss some methodological, measurement, and interpretative issues surrounding existing statistics on unemployment duration. The primary data source for this analysis is the Current Population Survey (CPS).

Consistent with past research, a large number of spells of unemployment were found to be typically of short duration, although obvious cyclical patterns also were found. The implications for understanding how the labor market functions depend critically upon both the outcome of a spell of joblessness and the extent of multiple periods of unemployment per worker over time. Based on this analysis, unemployment appears to be concentrated among a relatively small group of workers who are unemployed for a rather extensive length of

time. In addition, there appears to be a pronounced cyclical pattern to the concentration of unemployment, as long-term joblessness rises extensively in recessions. However, the data alone do not verify or refute any of the existing theories of labor market behavior.

Some methodological issues

For many analysts and policymakers the length of a spell of unemployment—whether 4 or 40 weeks—is viewed as an index of economic welfare. Thus, the plight of the long-term unemployed and the impact of economic downturns on duration are often discussed. However, the seemingly simple question—how long does an unemployed person remain unemployed?—is not easily answered on the basis of regularly published data from the CPS (or most other labor force surveys, for that matter). To understand this, a brief overview of the CPS is necessary.

The CPS is a monthly survey of a rotating group of approximately 65,000 households (strictly speaking, addresses). Each month, Census Bureau enumerators visit the households in the sample and ask a series of structured questions about the labor force status of each member 16 years of age and over during the preceding or reference week. Persons without a job but looking for work are asked how long they have been looking for work. Thus, what the CPS measures is the length of a spell that is still in progress, which is conceptually distinct from the length of a *completed* spell of

Norman Bowers is an economist in the Office of Current Employment Analysis, Bureau of Labor Statistics.

unemployment. Published data measure a cross-section of the unemployed prior to the completion of their spells. The difference between an in-progress and a completed spell of unemployment is analogous to the difference between the average life span (the average of a completed life) and the mean age of the population (the average of lives currently in progress). In addition, some unemployment spells are not measured in the survey—those that occur between survey dates.

Before discussing the implications of this distinction, it might be fruitful to examine the distribution of unemployment by duration of spells in progress during 1968–79. Table 1 shows that, on average, about 6 million people were unemployed in 1979, and approximately 1.2 million were unemployed for more than 15 weeks. The average duration of these “in-progress” spells was 10.8 weeks. In general, average duration varies directly with the unemployment rate, as can be seen by simply contrasting 1969 with the recession year of 1975. As should be clear from the previous discussion, however, table 1 cannot be used as an estimate of, say, the number of completed long-term (15 weeks or more) spells of unemployment in a year. This is so for two reasons: first, many of the jobless remain among the long-term unemployed from month to month and are counted repeatedly; second, some of the unemployed reporting less than, say, 5 weeks will eventually experience more than 15 weeks of unemployment. At the same time, spells of unemployment that occur entirely between survey dates are missed.¹

This suggests that there are two different measurement problems in using the data on spells in progress to estimate the length of completed spells. These phenomena will be labeled “interruption” and “length” bias, following Salant and others.² As noted earlier, the spells “captured” by the CPS are only part-way to their completion at the time of the survey—that is, they are “interrupted” spells. Thus, the average duration of spells in progress may underestimate the length of a

completed spell. However, there is also a bias in the opposite direction. Longer spells have a better chance of being measured in the survey and so tend to make the measured average duration greater than the average duration of a completed spell—length bias.

Which of these effects will predominate depends on what is called the “escape rate” or the probability that a person’s unemployment will end in “N” weeks provided that it has not ended before that time. Salant has shown that the relationship between the expected length of interrupted and completed spells can be deduced from a knowledge of “escape rates.”³ This technique is applied to CPS data in the next section; however, a brief discussion of escape probabilities derived from CPS data is necessary.

Past research using CPS data has shown that, in the aggregate, the likelihood of escaping unemployment declines with length of time unemployed. In other words, the probability of remaining unemployed increases with the length of unemployment already experienced.⁴ It must be emphasized that this relationship is based on aggregate data and does not necessarily mean that individuals have declining propensities to escape unemployment. For example, individuals or homogenous groups of the unemployed could have constant but different escape rates over time, but as the duration of unemployment increases the unemployed will be disproportionately composed of those with low escape rates. On the other hand, there may, in fact, be a causal relationship between duration and escape, such that the longer a person is unemployed the less chance she or he has of reemployment.⁵

Methods to estimate the expected duration of a completed spell of unemployment, using supplementary data from the CPS, are described in the next section.

Gross change data

Any longitudinal survey opens up the possibility of examining the movement of individuals from one labor force status to another—for example, from unemployed to employed. As noted previously, the CPS is a monthly survey of a rotating group of households. The CPS comprises eight independent panels or rotation groups. Each household is interviewed in each of 4 consecutive months, dropped from the sample for 8 months, and reinterviewed for 4 final months. Therefore, potentially three-fourths of the sample are common from month to month.⁶

Because of this overlap, it is possible to match a person’s labor force status for the current and previous months and measure the number of people who remain employed, unemployed, or not in the labor force, or who move between each of these states. Although a variety of detailed information is available from the gross change data, here it is only necessary to concentrate on

Table 1. Distribution of the unemployed by duration of in-progress spells of unemployment, 1968–79

[In thousands]

Year	Total unemployed	Number of weeks unemployed					Average duration (in weeks)	Unemployment rate
		Less than 5	5–10	11–14	15–26	More than 26		
1968	2,817	1,594	613	197	256	156	8.5	3.6
1969	2,831	1,629	627	200	242	133	8.0	3.5
1970	4,088	2,137	958	331	427	235	8.8	4.9
1971	4,993	2,234	1,143	435	665	517	11.4	5.9
1972	4,840	2,223	1,089	369	597	562	12.1	5.6
1973	4,304	2,196	966	330	475	337	10.0	4.9
1974	5,076	2,567	1,153	418	563	373	9.7	5.6
1975	7,830	2,894	1,738	714	1,290	1,193	14.1	8.5
1976	7,288	2,790	1,534	625	1,003	1,336	15.8	7.7
1977	6,855	2,856	1,507	582	896	1,012	14.3	7.0
1978	6,047	2,793	1,377	499	746	633	11.9	6.0
1979	5,963	2,869	1,396	496	684	518	10.8	5.8

the nine possible labor force flows among the employed (E), unemployed (U), and not in the labor force (N), as represented in the following tabulation:

Labor force status in previous month	Labor force status in current month		
	E(t)	U(t)	N(t)
E _(t-1)	EE	EU	EN
U _(t-1)	UE	UU	UN
N _(t-1)	NE	NU	NN

The meaning of the flows is as follows: EE represents the number of workers who were employed for the 2 successive months, EU is the number who were employed the previous month (t-1) who became unemployed in the next month (t), and so forth. The probability of making a labor force status transition is simply the number of people who made any given change divided by the number in the original state. For example, the probability that an unemployed worker will remain unemployed is UU/U_{t-1} . Each probability is called a transition rate. Before estimating duration from the actual statistics, it is important to note some of the limitations of the data (for references, see footnote 6).

The accuracy of the gross change data has been questioned in part because they normally do not agree with the labor force status counts from the full CPS. For example, the change in unemployment in any 2 months can be calculated two ways: first, by subtracting the gross flows out of unemployment (UE + UN) from the flows into unemployment (EU + NU); or, second, by subtracting the number unemployed in the current month from the number unemployed in the previous month. The results are usually different in magnitude and, sometimes, in direction because the samples and estimating methods used differ significantly.

It is generally acknowledged that there are three types of errors in the gross change data.⁷ First, and least important, is sampling variability; that is, the problem of estimating labor force status from less than a complete census. This is a problem of all sample surveys, but is likely to be more important for the gross change data because individuals must be surveyed 2 consecutive months. Therefore, movers, nonrespondents, and the first and fifth rotation groups are excluded from the gross change data, which are actually based on only about two-thirds of the full sample. This reduction in the sample may serve to bias the results, as some evidence exists that persons excluded have a more marginal labor force attachment than those who are matched.⁸

The second source of error is the result of misclassification of labor force status. Some evidence of the severity of misclassification is available from the CPS reinterview program.⁹ Each month a sample from the

CPS is selected for reinterview as a quality check. The reinterviews take place 1 week after the initial survey and use the regular CPS questionnaire. The results of the reinterview program suggest that, because of offsetting errors, net changes in labor force status are only moderately affected by misclassification. Despite this cancellation of errors in the published data, a substantial amount of apparently spurious volatility is present in gross changes. It should also be noted, however, that the CPS reinterview uses more experienced enumerators which may introduce measured changes between the original and reinterview surveys that would not exist between the original and subsequent surveys. Thus, the reinterview program may not give an exact measure of spurious movement in the gross change data. Whatever the cause of the misclassification, the effect on the gross change data is to magnify the flows between labor force categories.¹⁰ It should be emphasized that the vast majority of people are classified correctly: the point, however, is that errors that cancel each other in the full CPS are cumulative in the gross change data. The extent of, or direction of, bias to estimates of the duration of a completed spell of unemployment is uncertain, though some researchers have argued that, in the absence of the errors, duration measures would be much higher because the correct measure of changes in labor force status would be lower.¹¹

The third source of error, which is seemingly inherent in any panel surveys, is "rotation group bias": respondents are conditioned by the process of reinterview.¹² That is, responses to the survey questions change simply as a result of length of time in the survey. In addition, the probability of being reinterviewed in, say, 2 consecutive months is different among various labor force and demographic groups. The probability of reinterview can be affected by a variety of reasons, such as changing place of residence and refusing to be reinterviewed. The evidence we have on rotation group bias suggests that the movement between unemployment and not in the labor force is most affected by these problems.¹³

Despite these problems, the gross change data do provide a wealth of useful information on the U.S. labor force: in particular, the data can be used to estimate the duration of completed spells of unemployment.¹⁴

Estimating duration of unemployment. Estimating the expected duration of unemployment, $E(D)$, from the gross change data is straightforward. Recall that a person unemployed in one month can, in the subsequent month, remain unemployed (UU), become employed (UE), or drop out of the labor force (UN). The expected duration of unemployment is dependent upon the probability of escaping or leaving unemployment, which is the sum of the probability of withdrawing

from the labor force or becoming employed. Formally, expected duration is

$$E(D) = \frac{1}{ESC}$$

where ESC is the probability of escape from unemployment from month-to-month. To impute expected duration from a given escape probability it is necessary to assume that individuals have a constant escape rate while unemployed. That is, an individual's escape probability is independent of duration of joblessness.¹⁵ This assumption is critical because otherwise the expected duration of a completed spell is also dependent upon the current length of unemployment experienced, and the calculations become very complicated.

Table 2 contains information on the probability of leaving or continuing unemployment for selected years. Taking 1969 as an example, if on average 100 people were unemployed in month $t-1$, then 35 of those people were employed, 29 withdrew from the labor force, and 36 remained unemployed in the following month. The

fourth column of table 2 shows the estimate of the expected duration of a spell of unemployment. These estimates are presented as "weeks of unemployment." This was done by multiplying expected duration, $E(D)$, from the above equation, which is based on monthly probabilities of labor force movement, by 4.3—the average number of weeks in a month (thus, $E(D) = 1/ESC \times 4.3$). The final column in table 2 shows the expected duration of unemployment for a "persistent jobseeker." This is a measure of unemployment duration conditional upon not withdrawing from the labor force (UN); rather, the "persistent jobseeker" searches until he or she finds a job (UE). The implications of these data will be discussed in detail later, but for now it should be noted that the expected duration of the persistent jobseeker is the probability of moving from unemployed to employed plus the probability of remaining unemployed divided by the probability of moving from unemployed to employed, all multiplied by 4.3 weeks.

There are a number of interesting features in table 2. First, in each year the probability of remaining unemployed increases as current duration increases. This may result from the "sorting" effect, or there may be a causal relation between an individual's likelihood of exiting unemployment the longer he or she is out of work. Again, to estimate the expected duration it is necessary to assume that the sorting effect is true. Second, there is a strong cyclical pattern to the data. The jobless in the recession year of 1975 had a much higher chance of remaining unemployed and a much lower chance of going from unemployed to employed.

The formula for expected duration results in estimates for completed durations ranging from a low of 6.7 weeks in 1969 to 9.8 weeks in 1975 (column 4 in table 2). This compares to the average duration of an in-progress spell of 8 weeks in 1969, and 14.1 weeks in 1975 (table 1). This result indicates that the length bias dominates the interruption bias in the published statistics.¹⁶

The data on the transition probabilities also permit the estimation of the number of completed spells of unemployment within any given period, both overall and within each transition field. There are at least two sources of bias to this estimate. First, it is important to note that the estimate will be a lower bound of the actual number of spells because several short spells may occur between the survey dates and, therefore, will be missed. Second, as a result of errors in the gross change data, it is likely that the true transition probabilities are lower than the measured probabilities: thus, the true number of unemployment spells will be lower than the estimates presented here. These two problems have opposite effects on the estimates. However, it would be exceedingly difficult to measure the actual magnitude of

Table 2. Probability of leaving or continuing unemployment, by duration of unemployment, annual averages, selected years, 1969-79

Year and current duration	Probability of moving from unemployment to—		Probability of continuing unemployment	Expected duration of a completed spell of unemployment (in weeks)	
	Employment	Not in labor force		All workers	Persistent jobseekers
1969					
Total	.3516	.2910	.3570	6.7	8.7
Less than 5 weeks	.4019	.2999	.2982		
5 to 10 weeks	.3069	.2916	.4015		
11 to 14 weeks	.3143	.2571	.4286		
15 to 26 weeks	.2390	.2550	.5060		
More than 26 weeks	.2158	.2950	.4892		
1971					
Total	.2770	.2409	.4821	8.3	11.8
Less than 5 weeks	.3368	.2788	.3844		
5 to 10 weeks	.2667	.2409	.4924		
11 to 14 weeks	.2488	.2019	.5493		
15 to 26 weeks	.2043	.1659	.6298		
More than 26 weeks	.1591	.2004	.6405		
1975					
Total	.2338	.2028	.5634	9.8	14.7
Less than 5 weeks	.3083	.2531	.4386		
5 to 10 weeks	.2381	.1987	.5632		
11 to 14 weeks	.2139	.1761	.6100		
15 to 26 weeks	.1734	.1437	.6829		
More than 26 weeks	.1234	.1669	.7101		
1978					
Total	.2855	.2319	.4826	8.3	11.6
Less than 5 weeks	.3418	.2604	.3978		
5 to 10 weeks	.2694	.2246	.5060		
11 to 14 weeks	.2336	.2008	.5656		
15 to 26 weeks	.2227	.1743	.6030		
More than 26 weeks	.1831	.2091	.6078		
1979					
Total	.2906	.2283	.4813	8.3	11.4
Less than 5 weeks	.3450	.2560	.3990		
5 to 10 weeks	.2835	.2132	.5033		
11 to 14 weeks	.2422	.1942	.5636		
15 to 26 weeks	.2169	.1837	.5994		
More than 26 weeks	.1514	.2072	.6414		

the bias introduced because of these problems.

Both tables 1 and 2 are necessary to estimate the number of spells of unemployment in a year. Table 1 shows, for example, that in an average month in 1969, 1.6 million people had been unemployed for less than 5 weeks. From table 2, it is possible to calculate the probability that a person unemployed less than 5 weeks will exit unemployment by the next survey month. The number of completed spells in any given transition field is calculated as follows:

$$\text{Spells} = \text{Number of in-progress spells} \times \text{Probability of escape} \times 12$$

Table 3 contains the results of this exercise. Thus, in 1969, there were an estimated 22 million spells of unemployment, and 14 million of these spells were less than 5 weeks. In 1975, on the other hand, there were 42 million spells; compared to 1969, there were proportionately more long-term spells in 1975, which is exactly what one would expect in a cyclical downturn.

Of course, the estimates in table 3 pertain to spells of unemployment. The estimated 37 million spells in 1979, for example, include a number of individuals who experienced more than one spell of joblessness over the year. This is particularly true of those completed spells of relative short duration. However, because of their length, the 2.2 million spells of 27 weeks or longer may correspond roughly to the number of people who were out of work that long in one spell (but not those who experienced a total of more than 26 weeks of unemployment over the course of the year).

In summary, the measurement of the length of a completed spell of unemployment is conceptually simple; but, the empirical difficulties are important enough that the estimates should be taken as rough guides only. The fact that these estimates are generally comparable to those obtained in research utilizing different methods increases the confidence in the estimates. Given these caveats, the comparison of tables 1 and 3 suggests some interesting interpretations of the structure of unemployment. On average, the estimated duration of a completed spell is just about 75 percent of the duration of the (measured) in-progress spell. And, while there are important cyclical patterns, a large number of spells are typically of very short duration.

Interpreting duration data

As noted at the outset of this article, the meaning of the apparently short durations estimated in table 3 is fraught with difficulties. For example, one economist has asserted that the data support the notion of "an active labor market in which almost everyone who is out of work can find his usual type of job in a relatively short time."¹⁷ Another perspective contends that the data indicate that, while many workers pass through

Table 3. Estimated completed spells of unemployment, by duration of unemployment, 1968-79

[In thousands]

Year	Total spells	Number of weeks unemployed					Expected duration of a completed spell (in weeks)
		Less than 5	5-10	11-14	15-26	More than 26	
1968	21,587	12,372	4,474	1,272	1,519	964	6.8
1969	21,841	13,718	4,503	1,371	1,434	815	6.7
1970	27,323	16,445	5,933	1,711	2,075	1,159	7.7
1971	31,002	16,503	6,962	2,353	2,945	2,230	8.3
1972	31,023	16,755	6,729	2,024	2,981	2,534	8.0
1973	29,661	17,018	6,267	1,895	2,520	1,961	7.5
1974	32,854	19,330	7,092	2,017	2,677	1,738	8.0
1975	41,012	19,496	9,110	3,341	4,909	4,156	9.8
1976	39,613	18,926	8,527	2,760	4,193	5,207	9.5
1977	39,878	19,874	9,091	2,774	3,998	4,141	8.9
1978	37,480	20,183	8,163	2,601	3,554	2,979	8.3
1979	37,126	20,691	8,321	2,597	3,288	2,229	8.3

the state of unemployment, chronic and persistent joblessness is unimportant.¹⁸ Another group of theorists, ranging from those who argue that the labor market is divided into segments between which mobility is constrained to those who utilize labor turnover models, has argued that duration statistics are simply inadequate as any measure of economic welfare: rather, short spells of measured unemployment could be the result of frequent movement from jobs that are unstable, menial, or otherwise unpreferred.¹⁹ Finally, it must be emphasized that the gross change statistics do not provide a complete picture of the labor market. In particular, a large proportion of job changes occur without any intervening period of unemployment. Thus, sole reliance on the gross change data may lead one to exaggerate the overall importance of labor force flows.

The effects of labor force withdrawal. As the preceding discussion indicates, one important issue in interpreting duration statistics concerns the outcome of a spell of unemployment. Measured short durations may not imply much about the ease of finding one's "usual line of work" if individuals escape unemployment by withdrawing from the labor force or, perhaps, by adjusting to poor labor market conditions and taking a temporary job while waiting for job prospects to improve.²⁰ As an example of the magnitude of labor force exit, it has recently been estimated that 45 to 50 percent of all unemployment spells end by withdrawal from the labor force.²¹

Some additional information about the impact of labor force withdrawal on duration is contained in the last column of table 2. Here, the expected duration of unemployment for those who do not withdraw from the labor force has been calculated. The expected duration of the persistent jobseeker is substantially higher than the conventional calculation which includes the effect of labor force withdrawal: in 1969, 8.7 versus 6.7 weeks; in 1975, 14.7 versus 9.8 weeks; and, in 1979, 10.8 versus

8.3 weeks. It is crucial to note that this calculation is simply illustrative and is not based on the actual experience of people who do not leave unemployment until they find a job. The calculation assumes that those persons who end their unemployment by dropping out of the labor force would have had the same likelihood of finding a job if they had continued to search as those who actually did continue to search. Moreover, it is precisely those groups that are most marginally attached to the labor force—for example, school age youth—who tend to experience frequent spells of short-term joblessness. Nevertheless, the data do underscore the necessity to exercise caution in the interpretation of unemployment duration statistics.

Some perspective on the meaning of labor force exit can be gained by looking at the patterns of labor force transitions. Table 4 contains this information for selected years. The flows have been calculated as probabilities.

The probabilities of moving from employment or unemployment to not in the labor force can provide some (limited) information on the interpretation of labor force withdrawal. That is, if withdrawal is truly voluntary—given real life ambiguities—then, even if exits are large in magnitude, they might, nevertheless, be of little concern for understanding the labor market.

The question of interest: to what extent do people drop out of the labor force because they choose not to work rather than because they become discouraged about the prospects of finding a job? This is a very difficult question to answer precisely on the basis of existing data. However, George Perry has suggested that if all labor force leaving is truly voluntary, then one might expect that the employed and unemployed would be equally as likely to drop out of the labor force.²² Here, the rate of withdrawal from employment might be thought to represent a “normal” rate of withdrawal resulting from things like home responsibilities. This might be considered a rough measure of purely voluntary withdrawal.

As table 4 shows, in each of the years presented, the rate of withdrawal from unemployment swamps the withdrawal rate from employment. On average, in 1969 only 4 percent of the employed withdrew while 29 percent of the unemployed withdrew. Although these exit rates differ by demographic groups, the data strongly suggest that only some small proportion of labor force exit from unemployment is strictly voluntary in the sense of not depending on the prospects of finding an acceptable job. This, admittedly rough, evidence has received substantial support from other research as well.²³

However, before too much reliance is placed on the suggestion that labor market discouragement is the primary cause of withdrawal from the labor force following unemployment, other evidence needs to be exam-

Table 4. Probability of moving from one labor-market state to another in different business cycle conditions, 1969, 1975, and 1978

Labor force flow from —	1969	1975	1978
Employment to unemployment	0.0100	0.0191	0.0145
Employment to not in labor force . . . . .	.0434	.0351	.0340
Unemployment to employment . . . . .	.3516	.2338	.2855
Unemployment to not in labor force . . . . .	.2910	.2028	.2319
Not in labor force to employment . . . . .	.0507	.0445	.0492
Not in labor force to unemployment . . . . .	.0162	.0271	.0251
Average unemployment rate	3.5	8.5	6.0

ined. BLS currently compiles quarterly data on discouraged workers—persons who want a job but who are not looking for work because they believe they could not find it. The average number of discouraged workers was 574,000 in 1969; 1,082,000 in 1975; 1,010,000 in 1977; and 750,000 in 1979. The interesting question, however, is not how many workers become discouraged but, rather, what proportion of the people who leave unemployment to move outside the labor force subsequently are classified as discouraged workers? The one piece of evidence that is available on this question is based on the research of Kim Clark and Lawrence Summers. (See footnote 11.) They calculated that, in 1977, just 15 percent of the outflow from unemployment became classified as discouraged workers. However, fully 46 percent of this group said they wanted a job now.²⁴ Exactly where the truth lies in assessing whether labor force withdrawal is really “voluntary” or “involuntary” cannot be pinpointed solely on the basis of scanning a wide array of data; adequate answers will only be forthcoming with the development of robust explanatory theories of labor market dynamics.²⁵

Ambiguity of labor force classification. The unemployed/not in the labor force distinction has recently been criticized for being too ambiguous and arbitrary. Clark and Summers, in particular, have argued that the flow between unemployment and not in the labor force in table 4 might be primarily the result of the misclassification of consistent behavior.²⁶ They cite evidence—discussed earlier in this article—on the existence of rotation group bias and other classification problems. Because Clark and Summers see the crucial concept of “looking for work” as too ambiguous, particularly in light of evidence they have presented on the relative brevity of labor force withdrawal, they conclude that

“It appears that many of those who withdraw experience a brief spell outside the labor force and a further period of “reentrant” unemployment. The official statistics capture two relatively brief spells of unemployment, yet the evidence presented here suggests that the experience might be more appropriately characterized as a single lengthy spell of unemployment.”²⁷

Undoubtedly, for some people at least, the distinction

between being unemployed and not in the labor force is unclear. However, the phenomenon of temporary labor force withdrawal is not well understood theoretically. Further examination of this issue is certainly desirable.

One thing stands out from this discussion on labor force exit: irrespective of one's view as to how labor force flows should be interpreted, accounting for the flows is necessary to render the meaning/significance of duration statistics intelligible.

The meaning of unemployment duration might be sharpened by considering the unemployment experience over a period longer than the "average" month and by analyzing the concentration of unemployment.

Multiple spells of unemployment and the concentration of total unemployment. The length of time an individual spends unemployed is the product of both the average duration of an unemployment spell and the number of separate spells. In an economy where repeated spells of unemployment are not unusual, the short average duration of completed spells of unemployment may understate the impact of joblessness on individuals.²⁸ First, many people may suffer multiple spells of unemployment, so that average duration understates their total unemployment experience. Second, persons experiencing only one spell may have more unemployment than suggested by the data on average duration of a completed spell, because single spells tend to be longer than the average of multiple spells.

Data on the prevalence and average duration of unemployment spells are available from the "Work Experience" supplement to the CPS. But these data have important limitations.

Every March, a series of questions about the previous year's labor force experience is asked of respondents in the Current Population Survey. Included are questions on the total length of time the respondent was unemployed and on the number of spells of unemployment experienced. The major potential biases of the data result from recall problems and interruption bias. In addition, the work experience questions do not appear well suited to measure jobseeking activity associated with labor force entry. Recall problems are straightforward: people may have trouble accurately remembering what they were actually doing, say, 8 months ago; in particular, individuals may not recall a brief period in which they were unavailable for work and, therefore, report one longer spell of unemployment.²⁹ The evidence suggests that the data for prime working age males are consistent with the monthly CPS, but that women and teenagers tend to report fewer weeks of unemployment than implied in the monthly figures. Interruption bias concerns the fact that the period of observation is 1 year, so that some spells of unemployment will be interrupted by both the beginning and ending of the

Table 5. Average duration of unemployment by spells of unemployment, for all persons with some work experience, 1967-78

Year	Total duration of unemployment (in weeks) for people with:			Average spell length (in weeks) for people with:			Total number of spells (in thousands) ²	Percent unemployed with more than one spell
	1 spell	2 spells	3 spells or more ¹	1 spell	2 spells	3 spells or more ¹		
1967	7.6	13.3	16.5	7.6	6.7	4.7	16,449	31.6
1968	7.2	13.3	16.5	7.2	6.7	4.7	15,681	31.0
1969	7.5	12.4	16.5	7.5	6.2	4.7	16,719	32.2
1970	10.0	15.4	19.1	10.0	7.7	5.5	20,489	33.6
1971	11.8	17.6	20.4	11.8	8.8	5.8	21,515	32.5
1972	11.2	16.4	19.4	11.2	8.2	5.5	20,855	32.6
1973	9.7	15.2	18.3	9.7	7.6	5.2	20,325	32.4
1974	9.8	15.7	18.0	9.8	7.9	5.1	25,569	36.0
1975	14.4	19.2	19.4	14.4	9.6	5.6	27,422	31.3
1976	13.8	18.4	20.3	13.8	9.2	5.8	27,405	32.7
1977	12.9	17.1	18.8	12.9	8.6	5.4	26,399	32.6
1978	12.0	16.1	18.1	12.0	8.1	5.2	24,400	32.5

¹ Assumes average of 3.5 spells.

² Excludes persons who looked for work but did not work.

year. This means that even work experience data do not translate into completed spells of unemployment.

Table 5 contains information on the total duration and average duration by number of reported spells. The last two columns of table 5 show the total number of spells reported and the percent of those who experienced more than one spell of unemployment. The average durations in table 5 are based on the number of persons reporting both some work experience and unemployment. It excludes all persons who looked for work but did not work at all because there is no information on the number of spells of unemployment. The average duration of unemployment was taken as the midpoint of the following intervals: 0-5; 6-10; 11-14; 15-26; and 27-52. This is a simple assumption, but it should not affect the relative values of the estimates because it is used consistently.

The data are suggestive of several phenomena. First, as expected in a retrospective framework, the total number of spells reported is less than the estimated number of spells from table 3. Second, repeat spells seem to be frequent enough that they cannot be ignored when considering the overall experience of unemployment. For example, in 1978, more than 30 percent of all persons with some unemployment reported more than one spell. Many persons with multiple spells of unemployment work in industries that are highly seasonal or cyclical, or both. The construction industry is one of the best examples; whereas in 1978 construction workers made up only about 6 percent of those with work experience, about one-fifth of all persons with 3 or more spells in 1978 were in the construction industry. Production workers in the automobile industry often experience multiple spells of unemployment because of effects of both model changeover and economic downturns. Not all persons who experience multiple spells can be neatly

classified into a particular industrial situation, however. There is some evidence that some people are frequently unemployed because they leave jobs to escape from menial tasks and end up moving from one unsatisfactory job to another, often experiencing a spell of unemployment or exiting the labor force for a brief period.

Another important feature of table 5 is that the average duration of unemployment consistently decreases with the number of spells experienced. That is, while the total amount (in weeks) of unemployment increases as number of spells increase, it does so less than proportionately. Similar patterns of diminishing duration for additional unemployment spells have also been found from direct observations of individuals.³⁰

Table 5 indicates that the estimated average duration of unemployment is dependent upon the number of spells the average unemployed person will experience. Statistics on the estimated duration of a completed spell of unemployment are underestimates of the total experience of unemployment: persons with a single spell suffer longer average durations than those with multiple spells; those with multiple spells experience more total unemployment than the average because of the multiplicity of their spells.³¹

The concentration of unemployment. The picture presented thus far has focused on the average duration of unemployment and the number of unemployment spells. It is incomplete: the differential impact of unemployment throughout the labor force can change the meaning and significance of the aggregate data. For example, a minority of people may account for the bulk of the total weeks of unemployment within any given period. The same unemployment statistic, however, could indicate a situation in which most people experience a short bout of unemployment at some time, but each only

loses a small proportion of his or her potential work time. Not much information is available on this issue primarily because of the difficulties in obtaining unemployment spell histories. Nevertheless, data from the "Work Experience" supplement of the CPS can provide some aggregate information on the distribution of weeks of unemployment. These data will be supplemented by recent information from the Panel Studies on Income Dynamics Survey conducted by the University of Michigan.

Table 6 contains the CPS "work experience" information. It is critical to understand the limitations of the data. From table 2, it was noted that, in the aggregate, the probability of escaping unemployment declined significantly with time unemployed. This will naturally tend to show up as a concentration of unemployment in longer spells simply because the longer a spell has lasted, the lower the probability of escape. Even if the probability of escape for each individual is constant, a large share of unemployment would be the result of the individuals who have lower escape probabilities. To get the "true" picture one must be able to test for heterogeneity between individuals—sorting—or duration dependence—as unemployment lengthens, the escape rate for individuals declines.³²

Given these caveats, table 6 contains some interesting information. The concentration of unemployment is stark. In 1969, the 1 percent of the labor force unemployed more than 27 weeks accounted for 32 percent of total weeks unemployed. There is also a pronounced cyclical pattern to the distribution. In 1975, the proportion of the labor force unemployed at least 27 weeks jumped fourfold from 1969 and accounted for 52 percent of total unemployment. The distribution in 1978 lies between 1969 and 1975.

Because table 6 provides only annual data and contains no information on spells of unemployment, it is not possible to determine whether the same group of people become unemployed over and over again. Perhaps the most important information is the cyclical pattern; it is exactly what one would predict from an examination of escape probabilities. If nothing else, it is clear that a key to understanding unemployment duration involves explaining its behavior over the course of a business cycle.

A last bit of information on the concentration of unemployment is from a study on the 10-year (1968–77) work history of married adult males.³³ Although the data suffer many of the defects of table 6 (multiple spells in a year are not measured) it does follow the same individuals over a long period of time. The results are fairly consistent with the CPS "work experience" data. A large number of people experienced some unemployment over the 10-year period, but just 5 percent accounted for about half (46.6 percent) of the total time

Table 6. The distribution of weeks of unemployment, 1969, 1975, and 1978

Duration measure	1969	1975	1978
Percent of labor force unemployed by duration:			
Year-round workers ¹	1.5	0.8	0.6
Other workers ²			
1 to 4 weeks	4.5	4.5	4.2
5 to 14 weeks	3.8	6.1	5.5
15 to 26 weeks	1.7	4.4	3.2
More than 26 weeks	1.0	4.4	2.3
Weeks unemployment by duration as a percent of total weeks unemployed:			
Year-round workers ¹	1.8	.4	.4
Other workers ²			
1 to 4 weeks ³	9.0	3.4	4.8
5 to 14 weeks	28.5	17.3	23.4
15 to 26 weeks	28.3	27.2	29.4
More than 26 weeks	32.5	51.7	42.2

¹ Year-round workers experienced 1 to 2 weeks of unemployment.

² Other workers includes those who looked for work but did not work during the year.

³ Calculations are based on the mid-range of the unemployment duration categories.

unemployed among the entire sample. The poor, blue-collar workers, and construction workers were disproportionately concentrated in this small group.

Some analysts have claimed such data challenge most theories of the labor market (for example, on search and turnover, dual labor markets, and others) because these theories focus on the relative brevity of completed spells of unemployment and are based on the notion that, except in recessions, jobs are readily available. Yet, the data are neither capable of evaluating the efficacy of various theories nor, more importantly, are they inconsistent with different versions of each theory. The data show only that some people are unemployed a lot; they do not show that jobs are never held between periods of joblessness. Data encompassing unemployment and employment spell histories would be necessary to determine the existence of a group of workers who are more or less permanently unemployed.

THIS ARTICLE has presented one method to estimate the expected duration of a completed spell of unemployment and the number of spells of unemployment. Data

and measurement problems associated with unemployment were also discussed. From this review, it is clear that five issues are most important in analyzing unemployment patterns. First, a sharp conceptual distinction exists when measuring the duration of completed spells of unemployment and in-progress spells. In general, the estimates of the average length of a completed spell were about 75 percent of the average of an in-progress spell. Second, duration statistics may be a very unreliable guide on the relative ease of finding work; one necessary complement to the data is analysis of the causes of labor force withdrawal. Third, it is important to gauge the importance of multiple spells of unemployment to adequately interpret duration data. Fourth, information on the concentration of unemployment is important. For example, while most spells of unemployment may be relatively short, most unemployment may be accounted for by those with many spells or with long periods of joblessness. Last, and very important, an understanding of the business cycle and its impact on the labor market is essential to any analysis of unemployment duration. □

—FOOTNOTES—

¹ See Hyman Kaitz, "Analyzing the length of spells of unemployment," *Monthly Labor Review*, November 1970, pp. 11–20. Kaitz's path-breaking work was the first to estimate the duration of completed spells of unemployment in the United States. For an early application to data from England, see R.F. Fowler, "Duration of Unemployment on the Register of the Wholly Unemployed," *Studies in Official Statistics, Research Series 1*, London, Her Majesty's Stationary Office, 1968.

² Stephen W. Salant, "Search Theory and Duration Data: A Theory of Sorts," *Quarterly Journal of Economics*, February 1977, pp. 39–57. George Akerlof and Brian Main, "Unemployment Spells and Unemployment Experience," Special Studies Paper, Federal Reserve Board, Number 123, Oct. 23, 1978; and Robert Frank, "How Long is a Spell of Unemployment," *Econometrica*, March 1978, pp. 285–301.

³ Salant, "Search Theory . . .," has shown that three propositions concerning the measure of interrupted and completed spells of unemployment follow from a knowledge of escape rates: (1) If the probability of escape increases the longer one is unemployed, the expected length of a completed spell, $E(C)$, is greater than the expected length of an interrupted spell, $E(T)$. This results from the fact that interruption bias predominates; (2) If the probability of escape is constant, the two measures, $E(C)$ and $E(T)$, are the same. In this case, the effects of interruption bias and length bias exactly offset each other; and (3) if the probability of escape declines, $E(T)$ is greater than $E(C)$, and the effect of length bias predominates.

⁴ See Kaitz, "Analyzing . . .," for one example of this.

⁵ For a discussion of this issue see, John Barron and Wesley Mellow, "Changes in Labor Force Status Among the Unemployed," *Journal of Human Resources* (forthcoming); A. McGregor, "Unemployment Duration and Re-employment Probability," *Economic Journal*, December 1978, pp. 693–706; Stephen Nickell, "Estimating the Probability of Leaving Unemployment," *Econometrica*, September 1979, pp. 1249–66; Anders Bjorklund, "On the Duration of Unemployment in Sweden, 1965–1976," *Scandinavian Journal of Economics*, Vol. 80, No. 4, 1978, pp. 421–439; and Timothy Carr, "A Comparative Study of the Duration of Unemployment of Young and Middle-Aged Men," Center for Human Resource Research, Ohio State University, Columbus, Ohio, 1978.

⁶ For more detailed discussion of the gross change data, see Harvey Hilaski, "The Status of Research on Gross Changes in the Labor

Force," *Employment and Earnings*, October 1968, pp. 6–13; Robert Pearl, "Gross Changes in the Labor Force: A Problem in Measurement," *Employment and Earnings*, April 1963, pp. IV–X; and Ralph Smith and Jean Vanski, "Gross Change Data: The Neglected Data Base," National Commission on Employment and Unemployment Statistics, Background Paper No. 11, July 1978. A discussion of gross change data from the Canadian labor force survey appears in Frank Denton, "A Simulation Model of Month-to-Month Labor Force Movement in Canada," *International Economic Review*, June 1973, pp. 293–311.

⁷ See Smith and Vanski, "Gross Change . . .," pp. 17–25.

⁸ For an extended discussion of these problems see Philip J. McCarthy, "Some Sources of Error in Labor Force Estimates from the Current Population Survey," Background Paper No. 15, National Commission on Employment and Unemployment Statistics, 1978; and Hilaski, "The Status . . .," pp. 6–13.

⁹ See *The Current Population Survey Reinterviews Program, January 1961 through December 1966*, Census Bureau, Technical Paper 19, 1968.

¹⁰ *Ibid.*; and Henry Woltman and Irv Schreider, "Possible Effects of Response Variance on the Gross Changes from Month to Month in the Current Population Survey," Census Bureau, Memorandum, May 11, 1979.

¹¹ Kim Clark and Lawrence Summers, "Labor Market Dynamics and Unemployment: A Reconsideration," *Brookings Papers on Economic Activity*, No. 1, 1979, pp. 13–72.

¹² See McCarthy, "Some Sources of Error . . .," pp. 62–76; Barbara Bailar, "The Effects of Rotation Group Bias on Estimates from Panel Surveys," *Journal of the American Statistical Association*, March 1975, pp. 23–30; and "Current Population Survey Rotation Group Bias," presented to the Census Advisory Committee of the American Statistical Association, Mar. 4–5, 1976.

¹³ Smith and Vanski, "Gross Change . . .," pp. 20–21; Smith, Vanski, and others have developed various ad hoc procedures to correct the gross change data. On the basis of recommendations from the National Commission on Employment and Unemployment Statistics, the Bureau of Labor Statistics is beginning an intensive study of the data problems and how they might be corrected.

¹⁴ One such study is Stephen Marston, "Employment Instability and

High Unemployment Rates," *Brookings Paper on Economic Activity*, No. 1, 1976, pp. 169–210. Also see George Perry, "Unemployment Flows in the U.S. Labor Market," *Brookings Papers on Economic Activity*, No. 2, 1972, pp. 245–78.

¹⁵ See Kaitz, "Analyzing . . .," pp. 11–20; Salant, "Search Theory . . .," pp. 39–57; and John Barron and Wesley Mellow, "Unemployment Insurance: The Recipients and Its Impact," BLS Working Paper 82, September 1978.

¹⁶ Our estimates differ somewhat from those of Kaitz and Salant. Because they used different methods, it is not surprising. Which results are "best" would be difficult to determine.

¹⁷ Martin Feldstein, *Lowering the Permanent Rate of Unemployment* (Washington, Joint Economic Committee, U.S. Congress, 1973), p. 11.

¹⁸ "Comments and Discussion" on George Perry, "Unemployment Flows in the U.S. Labor Market," *Brookings Papers on Economic Activity*, No. 2, 1972, pp. 245–78.

¹⁹ Robert Hall, "Why is the Unemployment Rate So High at Full Employment," *Brookings Paper on Economic Activity*, No. 3, 1970, pp. 369–402; Richard Edwards, "The Social Relations of Production in the Firm," *Politics and Society*, No. 1, 1975; and Martin Carnoy and Russell Rumberger, "Segmented Labor Markets: Some Empirical Forays," Discussion Paper 75–2, Center for Economic Studies, Palo Alto, 1975.

²⁰ Both George Perry, "Unemployment Flows . . .," and Stephen Marston, "Employment Instability . . .," have emphasized the problems with interpreting duration data because of the possibility of exiting from the labor force. Also see Stuart Garfinkel, "The outcome of a spell of unemployment," *Monthly Labor Review*, January 1977, pp. 54–57; and T. Aldrich Finegan, "The Measurement, Behavior, and Classification of Discouraged Workers," National Commission on Employment and Unemployment Statistics, Background Paper No. 12, June 1978.

²¹ Clark and Summers, "Labor Market . . .," p. 19. Exit from the labor force varies widely among different demographic groups and there may be different explanations for each. Thus, some caution is required in interpreting the aggregate statistics. Furthermore, unless otherwise noted, we have assumed that the labor force movements are real and not the result of misclassification or other errors. Lastly, none of our data are appropriate for explaining unemployment differentials among social groups, for example, teenagers and adults.

²² Perry, "Unemployment Flows . . .," pp. 270–75.

²³ See Ralph Smith, "A Simulation Model of the Demographic Composition of Employment, Unemployment and Labor Force Participation," in Ronald Ehrenberg, ed., *Research in Labor Economics*, Volume 1 (Greenwich, Conn., JAI Press, 1977) pp. 259–304; and Ralph Smith and Charles Holt, "Recession and the Employment of Demographic Groups," *Brookings Papers on Economic Activity*, No. 3, 1974, pp. 737–60.

²⁴ Clark and Summers, "Labor Market . . .," p. 26. To be classified as discouraged a person must *only* cite reasons of discouragement. If the respondent cites other reasons, such as home responsibilities, even

if along with reasons of discouragement, the person is not counted as discouraged. For a more in-depth analysis of discouraged workers, see Finegan, "The Measurement . . .," pp. 3–11.

²⁵ Another hypothesis is that the unemployed remain in the labor force in order to collect unemployment compensation. When the benefits are exhausted they withdraw from the labor force. It is doubtful that this is very important in explaining labor force exits overall because the probability of withdrawal is greatest among those groups less likely to be eligible for benefits. In addition, over time, there seems to be no trend in the proportion of unemployment spells that ended in withdrawal, yet there have been important modifications in unemployment compensation, for example, extensions in the benefit period. There is some (tentative) evidence that the unemployment insurance system may induce some labor force participation among those eligible to receive benefits who otherwise might have stopped looking for work. See Gary Solon, "Labor Supply Effects of Extended Unemployment Benefits," *Journal of Human Resources*, Spring 1979, pp. 247–55.

²⁶ Clark and Summers, "Labor Market . . .," pp. 28–31.

²⁷ Clark and Summers, "Labor Market . . .," p. 31.

²⁸ See Perry, "Unemployment . . .," pp. 248–78; Marston, "Employment Instability . . .," pp. 169–210; Richard Disney, "Recurrent Spells and the Concentration of Unemployment in Great Britain," *Economic Journal*, March 1979, pp. 109–19; Richard Freeman and Robert Frank, "The Distribution of the Unemployment Burden," *Review of Economics and Statistics*, August 1978, pp. 380–91; Robert Hall, "Turnover in the Labor Force," *Brookings Paper on Economic Activity*, No. 3, 1972, pp. 709–56; and David Stevens and McNeil Gima, "The 'Incidence' Theory of Black-White Unemployment Differentials Revisited," Unpublished paper, University of Missouri, 1975, pp. 1–16.

²⁹ See Dale Morgenstern and Nancy Barrett, "The Retrospective Bias in Unemployment Reporting by Sex, Race, and Age," *Journal of the American Statistical Association*, June 1974, p. 356. Clark and Summers, "Labor Market . . .," argue that a benefit of the work experience data is that its retrospective nature reduces problems associated with "spurious" movements into and out of the labor force.

³⁰ Stevens and Gima, "The 'Incidence' Theory . . .," pp. 5–7.

³¹ Similar results have been obtained using data from the National Longitudinal Survey. See Akerloff and Main, "Unemployment Experience . . .," pp. 14–18.

³² One attempt to test this using data from England is contained in A. McGregor, "Unemployment Duration . . .," pp. 693–706. The results, though not flawless, suggest that individual escape rates do decline with time unemployed even after controlling for other characteristics.

³³ Martha Hill and Mary Corcoran, "Unemployment among family men: A 10-year longitudinal study," *Monthly Labor Review*, November 1979, pp. 19–23. Disney, "Recurrent Spells . . .," presents estimates of the concentration of unemployment among three cohorts of males in England. The results are similar to those of Hill and Corcoran.

Construction machinery industry posts slow rise in productivity

Growth was slower than manufacturing average in 1958-78, with 4 years recording declines, despite considerable capital expenditure and new technology; 1977-78, however, showed strong productivity advances

JOHN DUKE

Output per employee-hour in the construction machinery industry rose at an average annual rate of 2.0 percent between 1958 and 1978,¹ compared with a 2.6-percent rate for the entire manufacturing sector. This was the result of an average annual increase of 4.5 percent in output, and 2.5 percent in employee-hours. (See table 1.) The long-term trend was marked by cyclical swings. In 1977 and 1978, there were strong gains.

Productivity declines occurred in 4 of the 21 years between 1958 and 1978. In two of them, 1959 and 1968, increases in employee-hours exceeded output gains. In the other two years of decline, 1960 and 1975, productivity fell because sharp drops in output exceeded reductions in employee-hours.

The long-term gain in productivity resulted mainly from innovations in the machining and welding operations at the industry's plants, and from improvements in handling and storing materials. Computerization of accounting functions also helped to increase productivity.

Following 2 years of decline in 1959 and 1960, productivity increased at an average annual rate of 4.8 percent per year during 1960-65, induced largely by a strong rise in output, averaging 9.1 percent per year. Between 1965 and 1970, productivity slowed to an average rate of only 0.8 percent per year, as output gains slackened to an average annual rate of 2.4 percent. Productivity rebounded once again in the early 1970's, increasing at an average annual rate of 4.4 percent between 1970 and 1974, with output increasing 11.8 percent. Output per employee-hour declined 6.9 percent in 1975, as output fell 12.8 percent, but rose again in 1976, by 1.6 percent, when a 4.7-percent drop in output was exceeded by a decrease in employee-hours. Productivity rose by 5.0 percent in 1977 and 2.8 percent in 1978 as output recorded strong gains.

The construction equipment industry produces a variety of machines for earthmoving, hauling, lifting, grading, and paving. The machines are used not only in the construction industry, but also in mining, logging, railroad track maintenance, agriculture, and military operations.

Most construction equipment has not undergone major change over the past 20 years, but there has been a steady increase in the size, power, and flexibility of the machinery produced. For example, in 1958 only about 15 percent of new crawler tractors had greater than 160 horsepower. By 1977, nearly 40 percent were that powerful.² Demand for more powerful machines has come from construction contractors seeking to boost the efficiency of their operations.

Table 1. Productivity and related indexes for the construction machinery industry

Year	Output per employee-hour				Employee-hours		
	All employees	Production workers	Nonproduction workers	Output	All employees	Production workers	Nonproduction workers
1958	90.1	97.4	73.0	62.6	69.5	64.3	85.8
1959	84.4	86.3	78.9	74.0	87.7	85.7	93.8
1960	75.5	80.4	63.7	63.2	83.7	78.6	99.2
1961	82.7	86.8	72.6	59.0	71.3	68.0	81.3
1962	89.8	92.0	83.6	67.5	75.2	73.4	80.7
1963	90.9	91.3	89.7	73.1	80.4	80.1	81.5
1964	94.4	93.2	98.3	85.4	90.5	91.6	86.9
1965	96.9	95.3	102.2	91.4	94.3	95.9	89.4
1966	98.5	94.9	111.9	94.3	95.7	99.4	84.3
1967	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1968	99.6	101.5	94.1	104.3	104.7	102.8	110.8
1969	100.7	101.0	99.5	107.1	106.4	106.0	107.6
1970	101.0	103.6	93.9	99.4	98.4	95.9	105.9
1971	103.9	107.9	93.1	94.3	90.8	87.4	101.3
1972	111.4	112.5	108.0	114.5	102.8	101.8	106.0
1973	113.2	113.1	113.5	132.9	117.4	117.5	117.1
1974	119.9	119.9	119.9	146.3	122.0	122.0	122.0
1975	111.6	114.6	103.2	127.6	114.3	111.3	123.6
1976	113.4	120.6	96.0	121.6	107.2	100.8	126.7
1977	119.1	124.4	105.0	135.5	113.8	108.9	129.0
1978	122.4	127.2	109.6	151.3	123.6	118.9	138.1
	Average annual rates of change (percent)						
1958-78	2.0	2.0	2.0	4.5	2.5	2.5	2.4
1973-78	1.1	2.2	-1.8	1.1	0	-1.1	2.9

John Duke is an economist in the Division of Industry Productivity Studies, Bureau of Labor Statistics.

Output doubles

Output of construction machinery more than doubled over the 1958–78 period. The increase was generated by expanding overall construction activity and strong export demand. The value of total new construction (in constant dollars) rose 60 percent during 1958–72, before turning flat in 1973, and dropping sharply in 1974 and 1975. Since 1975, new construction has risen nearly 20 percent.³ Exports of construction machinery, which currently account for nearly one-third of U.S. production, almost quadrupled between 1960 and the mid-1970's. Construction and related activities in foreign countries during this period rose considerably faster than did U.S. construction, providing a strong impetus to U.S. exports.⁴

Although overall construction activity remains the most important determinant of construction equipment output, the cyclical and year-to-year variations in construction equipment output during 1958–78 did not always closely follow changes in construction activity. One reason is that the use of construction equipment varies greatly, depending upon the type of construction. The different types have widely varying ratios of cost between construction equipment and total contract.⁵ For example, in the construction of single family housing, machinery is a relatively minor factor, while for projects such as sewer lines and highways, large amounts of construction equipment are employed. Some types of construction machinery, such as crawler tractors and tractor shovel loaders, are used to prepare many kinds of construction sites, making it difficult to associate changes in production of these units with those in specific construction markets.

Changes in output in the industry were large over the period. In only 5 years were year-to-year output changes less than 6 percent. After an 18-percent increase in 1959, when nearly all segments of construction activity showed strong gains, output fell by 15 percent in 1960. This decline resulted from a downturn in many construction markets, and from the existence of a large inventory of machines in operation. The downturn continued with a 7-percent drop in 1961. Sustained high levels of construction and an expansion in exports during 1962–65 led to strong increases in construction machinery output, particularly in 1962 and 1964, 14 percent and 17 percent, respectively.

After 1965, output gains narrowed, as activity in many construction markets dropped from the high levels of the early 1960's. An acceleration in exports during this period helped maintain continued increases in output. Declines in construction activity during 1969–70 led to an output drop of 7 percent in 1970 and 5 percent in 1971. But output rebounded during 1972–74, posting consecutive gains of 21 percent, 16 percent, and

10 percent for the 3-year period. Expanding construction activity boosted demand for construction equipment in the United States; foreign demand for U.S.-built machinery soared during 1973–74, aided by changes in the relative values of national currencies. The severe drop in construction activity during 1974–75 caused machinery output to fall sharply, 13 percent in 1975, despite continued strength in foreign demand. The decline continued into 1976, with a 5-percent decrease. Output rebounded in 1977 and 1978, rising 11 and 12 percent, in response to the upturn in construction.

Employment and investment

The construction machinery industry is characterized by large scale production. In 1977, the average plant employed 169 persons, more than triple the average of 53 employees for the entire manufacturing sector. Establishments with 500 or more employees account for more than two-thirds of industry's value of shipments. Industry operations are concentrated in the North Central region of the United States, with more than three-fourths of employment located in those States.

Between 1958 and 1977, the number of establishments rose 57 percent to 910. The increase was somewhat less than the gain in employment, resulting in a slight rise in the average number of employees per plant. The increase in establishments was associated with a slight shift in industry operations to the Southern region. The number of establishments in the South doubled during 1958–72 to 162, raising the South's regional share of employment in the industry from 5 to 11 percent.

Currently at 165,000 persons, employment in the construction machinery industry rose 74 percent during 1958–78. However, the upward trend was not steady; employee-hours fluctuated considerably over the period, because of large swings in output. For example, output rose 18.2 percent in 1959, with a 26.2-percent gain in employee-hours. In 1961, employee-hours dropped 14.8 percent, following 2 consecutive years of declines in output. Sharp output increases in 1964, 1972, and 1973 accompanied large increases in employee-hours in those years.

Production workers accounted for 72 percent of total employment in the industry during 1978, virtually unchanged from the 1958 proportion, and about the same as the manufacturing average. Women accounted for only 8 percent of total employment, compared with 30 percent for manufacturing as a whole. Hourly earnings averaged \$8.01 in the industry, about 30 percent above the manufacturing average. Regional and skill factors as well as the high degree of unionization account for the higher wage levels.⁶ The North Central region, where construction machinery manufacturing operations are concentrated, had earnings about 10 percent above the average for all manufacturing, according

to 1972 Census data. Skill levels in the industry are also above the average for manufacturing in general. Professional, technical, and kindred workers accounted for 11.8 percent of construction machinery employees, while total manufacturing had 10.2 percent of its employees in such positions. Crafts and kindred workers represented 21.4 percent of workers in the industry, while manufacturing in general had 19.7 percent of its employees in these positions. Although the proportion of operatives (less-skilled employees) was only slightly lower (39.4 percent) for this industry than for the manufacturing average (42.2 percent), almost half of these employees in construction machinery were semiskilled metalworkers, whose earnings exceed that of most other groups of operatives.

Labor turnover in the industry has been well below that for all manufacturing during 1958–78. For example, in the average month of the study, quits per 100 employees were 1.0 for construction machinery and 1.9 for all manufacturing. New hires and layoffs per month averaged 1.7 and 1.0 percent, respectively, for this industry, compared with 2.8 and 1.6 for all manufacturing.⁷ The comparatively low rates of turnover reflect the above-average skill levels and high degree of unionization in the industry. Firms are more reluctant to lay off skilled employees during downturns, because of the cost of training new employees when production again increases. Also, unionized workers resign less frequently.⁸

Capital expenditures per employee averaged \$3,212 in 1977, considerably above the \$2,587 average for all of manufacturing. However, above-average capital expenditures did not occur in the industry until the mid-1970's. Industry expenditures per employee in 1958 were below that of all manufacturing but rose faster during the study period, 10 percent per year on average, compared with 8 percent. Total assets per employee per establishment were \$21,879 in 1976, below the \$22,326 all-manufacturing average, but they had risen slightly faster than average since the early 1960's. Nearly half of the capital expenditures for equipment during the mid-1960's went for machine tools.⁹ Although no precise data are available on the proportion of machine tools that are numerically controlled, industry sources indicate that the use of these tools increased significantly during the late 1960's and the 1970's.

Technological gains

The basic processes in the production of construction machinery, parts machining, heat treating, welding and fabrication, and assembly, did not change significantly during 1958–78. However, there were productivity gains from gradual technological improvements in them. Capital investment in improved machine tools with increased horsepower, and faster operating speeds, have

increased productivity in the machining processes. Numerical control has speeded up the machining of parts. This involves the automatic setting of machining angles, speeds, and feeds by electronic control units. Tools such as gear cutting and grinding machines have been used for many years, but the operator had to manually place the material into position, set the speeds for the feeding and machining of the material, and monitor the machining process. Numerical control is considerably faster and allows one operator to monitor several machines.¹⁰ Since the mid-1970's, the industry has been investing in manufacturing systems, comprised of groups of machine tools linked by material handling equipment, which greatly reduce machine set-up and component handling time.¹¹

The heat treating process has been largely unaffected by technological changes in the industry. Machined parts are fed into a furnace, heated, and then quenched in oil or water. This process strengthens the parts and relieves stress, for greater durability. Feeding parts through the furnace automatically has been introduced, but the process has remained mostly a manual operation.

There have been significant labor-saving innovations in welding operations in construction machinery manufacturing plants during 1958–78. In earlier years, the most prevalent welding techniques produced "slag," a film of debris that had to be cleaned from the weld surface. In the early 1960's, improved welding techniques were introduced which produced very little slag. Their rapid diffusion greatly reduced the labor time in cleaning welded parts. Also, the new welding process is quicker; the welding electrode is continuously fed to the welding surface. Under the old process, individual "sticks" of electrode material were used and replaced manually.

Other improvements include the introduction, in some plants, of conveyor systems to transfer parts between stations. These systems, which have been replacing hand carts, reduce bottlenecks in the production flow. The introduction of computers has saved labor in purchasing and accounting functions, and has helped maintain better inventory control.¹²

Future developments

Although the pace of construction activity is difficult to predict, some factors that will probably affect construction machinery demand in the near future are evident. The interstate highway system, which helped boost purchases of construction equipment in the late 1950's and 1960's, is more than 90 percent complete, and real expenditures for construction of new highways and streets have trended downward since 1970. In addition, export demand for construction equipment, which had risen rapidly in the early and mid-1970's, may sta-

bilize. Foreign manufacturers are becoming increasingly competitive in the construction machinery market, and U.S. subsidiaries abroad are also increasing their market share. These factors portend a slackening in the years ahead in the booming export market for U.S.-built construction equipment. However, offsetting these factors will be increased demand from specific domestic markets. Sewer and water projects are expected to increase significantly, due to pollution control mandates. Also, mining, particularly strip-mining of coal, should show a strong rise in the near future, increasing the demand for large excavating and earthmoving machines. Overall, construction equipment output is expected to grow about 3 percent per year over the next 5 years, significantly below the long-term rate.¹³

The slackening in demand anticipated for the next few years will tend to retard productivity improvement. However, the quickening pace of adoption of technological innovations should offset this to some extent. In-

vestment in numerically controlled machine tools is expected to increase, with emphasis on more flexible machines that can perform a number of different functions. Many machines in the industry have limited capabilities, and the set up and material handling time inherent in them have proven to be bottlenecks in the production flow. The low volume of production for individual types of construction equipment, combined with the specialized nature of most conventional machine tools, has limited the diffusion of numerical control. In recent years, however, advanced manufacturing systems have been developed which greatly facilitate smooth production flow and which are efficient for the low-to-medium volume in the industry. Capital expenditures increased greatly during the mid-1970's and there is evidence that a significant amount is being invested in these advanced systems.¹⁴ The industry's substantial investment in this equipment should cause productivity gains to accelerate. □

—FOOTNOTES—

¹ The construction machinery industry is composed of establishments primarily engaged in producing heavy machinery and equipment used by the construction industries; it produces items such as bulldozers, concrete mixers, cranes, pavers, and power shovels. It is designated as industry number 3531 in the 1972 *Standard Industrial Classification Manual* of the Office of Management and Budget. Data for this productivity measure first became available in 1958. All average annual rates of change are based on the linear least squares trend of the logarithms of the index numbers. A technical note describing the methods used in the construction of the indexes is available upon request.

² *Current Industrial Reports*, series M35S and MQ35D (Bureau of the Census) July 1958, 1959, 1977, September 1978).

³ *Construction Reports*, series C30-74S, December 1975 and C30-80-2, April 1980 (Bureau of the Census).

⁴ Out of 51 countries, 47 had higher rates of growth in construction between 1960 and 1970 than did the United States *Statistical Abstract of the United States 1974*, (Bureau of the Census, 1974), p. 823.

⁵ Bureau of Labor Statistics, Office of Productivity and Technology, Division of Technological Studies.

⁶ A recent study by the Bureau of Labor Statistics found that the weekly earnings of workers represented by labor organizations were 18 percent higher than those of workers not represented. *Earnings and Other Characteristics of Organized Workers May 1977*, Report 556 (Bureau of Labor Statistics, 1979).

reau of Labor Statistics, 1979).

⁷ The turnover rates cited here for construction machinery actually comprise both construction and mining machinery. However, because construction machinery employs about 80 percent of the total work force in both groups, these rates should be representative for construction machinery alone.

⁸ See Charles Brown and James Medoff, "Trade Unions in the Production Process," *Journal of Political Economy*, 1978, Volume 86, No. 3, p. 357.

⁹ *Interindustry Transactions in New Structures and Equipment, 1963 and 1967, Volume 2*, U.S. Department of Commerce, Bureau of Economic Analysis, September 1975.

¹⁰ See Lloyd T. O'Carroll, "Technology and Manpower in Non-electrical Machinery," *Monthly Labor Review*, June 1971, p. 58-59.

¹¹ See, for example, Raymond J. Larsen, "Taking the Wraps Off Flexibility in Manufacturing," *Iron Age*, Nov. 20, 1978, p. 75-91.

¹² Information on technological developments was provided by various industry representatives.

¹³ *U.S. Industrial Outlook 1980*, Domestic and International Business Administration, U.S. Department of Commerce, January 1980.

¹⁴ Jack Thornton, "Big Metalcutting Systems," *American Metal Market*, Nov. 12, 1979.

APPENDIX: Measurement techniques and limitations

The productivity indexes in this study measure the change over time in industry output per unit of labor input. They do not measure the specific contribution of labor, but reflect the influence of many factors such as technology, capital investment, and managerial skills, as well as skill and effort of the work force.

The output index for this industry is based upon value of shipments data, published by the Bureau of the Census. Detailed data from the Census of Manufactures for 1958, 1963, 1967, and 1972 were used to derive benchmark indexes, to which the annual indexes for intervening years, based on the Annual Survey of Manu-

factures, were adjusted. The value of shipments of the various product classes were adjusted for price changes by appropriate Producer Price Indexes to derive constant dollar output measures. These, in turn, were combined with employee-hour weights to derive the overall output measure. Employment and employee-hour indexes were derived from Census and Bureau of Labor Statistics data. Employees and employee-hours are considered homogeneous and additive, and thus do not reflect changes in the qualitative aspects of labor such as skill and experience of persons constituting the aggregate.

Conference Papers



Although the phrase "quality of worklife" has been part of the industrial relations vocabulary for more than a decade, the concept has not yet found wide acceptance. Some practitioners view it with enthusiasm, others with cynicism. Among the former are Stephen H. Fuller, a vice president of the General Motors Corp., Irving Bluestone, who recently retired as a vice president of the United Auto Workers, and Barry A. Macy, director of the Texas Center for Productivity and Quality of Work Life. Fuller and Macy spoke at last December's annual meeting of the Industrial Relations Research Association in Atlanta, Ga., Bluestone at a December conference on "Critical Economic and Work Force Issues Facing Western Nations," sponsored by the Work in America Institute and the International Institute of Labor Studies in Washington, D.C.

How quality-of-worklife projects work for General Motors

STEPHEN H. FULLER

Quality of worklife is not a happiness program, although happy employees may certainly be a byproduct. It is not a personnel department program, although quality of worklife has important implications for personnel management. It is not a subtle employee incentive program, although employees motivated to achieving the goals of the organization certainly ought to be one of the outcomes. And, it is not another productivity program, although better productivity is certainly one of the important results.

Quality of worklife *is* all of these things and more:

- A continuing process, not something that can be turned on today and turned off tomorrow.
- Using all resources, especially human resources, better today than yesterday . . . and even better tomorrow.
- Developing among all members of an organization an awareness and understanding of the concerns and needs of others, and a willingness to be more responsive to those concerns and needs.

Stephen H. Fuller is a vice president of General Motors Corp.

- Improving the way things get done to assure the long-term effectiveness and success of organizations.

General Motors is making a concerted effort to improve the quality of worklife for its employees. Projects are underway in most North American operations and in many overseas operations as well. The approach was not developed overnight. It evolved from a philosophy of management, shaped by events and experiences occurring over a considerable period of time.

A key component of our quality-of-worklife process is union participation. Quality of worklife became a joint effort of General Motors and the United Auto Workers in 1973, when a National Committee to Improve the Quality of Work Life was established. Representing the UAW on the committee are two officials of the international union. The corporation is represented by two personnel officers. The committee meets periodically to discuss activities underway in the corporation. One of its chief functions is to educate executives of the union and the corporation in order to encourage cooperative quality-of-worklife ventures at the local level.

The committee adopted minimum standards to assure that every GM plant has the basics of a quality-of-worklife effort. Each operation is expected to have:

- A group to oversee the quality of worklife process.
- A statement of long-term objectives incorporating quality of worklife along with other desirable business targets.
- Regular measurement of quality of worklife.
- Seminars and other activities to make the organization more knowledgeable about quality-of-worklife concepts and techniques.
- Adequate internal resources and skills to assure the developmental process is moving ahead and accomplishing its objectives.

Approaches vary

A quality-of-worklife improvement program is mandatory at GM, however, specific approaches are optional. Following are some examples of approaches being applied at existing and new plants.

A decade ago, one of our assembly plants could have been characterized as a problem plant. There was an air of hostility between management and the union. Costs were high. Performance was poor. Something had to be done. Fortunately, the local management and union

were willing to undertake some initiatives. As both sides explored and discussed their mutual problems and concerns, an atmosphere of understanding and mutual respect began to emerge. In 1972, the plant faced a major rearrangement which provided an opportunity for management to involve employees in planning the change, something that had not been done before. The rearrangement went well, due, in part, to the employees' suggestions.

Then, following the lead set by the GM-UAW National Quality of Work Life Committee, plant management and the union established their own committee. In 1977, management and the union initiated a 3-day training program providing employees at the plant training in team problem-solving. Although the program was voluntary, nearly all of the 3,600 employees participated. Today, employee morale at that plant is high, grievances are only a fraction of what they were a decade ago, and the plant has become one of the best-performing assembly plants at General Motors.

Another GM plant abandoned the traditional organizational structure a few years ago. Today, the plant is organized into six business teams, each consisting of the necessary production activities and support elements: engineering, scheduling, material handling, quality control, maintenance, and accounting. The system has made support employees an integral part of the plant's business operations. The quality-control circle concept, which has flourished in Japan and is being introduced by a growing number of firms in this country, has been incorporated into the business-team structure. The circle concept gives employees the opportunity to meet regularly to discuss problems affecting their work environment and the plant's performance.

These are only two of many approaches underway in established GM plants. New plants provide a unique opportunity to design an organization from a blank sheet of paper. Free from the constraints of past practice and stereotyped roles, each plant is an opportunity to introduce new approaches.

There are three important considerations underlying quality-of-worklife initiatives in new plants: (1) there is no best system or organizational design, (2) there is an ongoing interaction among the parts of the system—a change in one part of the system can have a significant impact on the entire system, and (3) each part of the system must reinforce consistency of operations and facilitate employee involvement.

To achieve an organizational system in which each part is congruent with the rest, careful consideration is given to the basic values, principles, and objectives held by local management. The development of a philosophy and goals is viewed as a necessary first step in the planning process. (The philosophy and goals are statements reflecting the local management's beliefs about people

and work and the relationship between those beliefs and the plant's objectives.)

A team concept is a major feature of many new GM plants. Job rotation within the team is encouraged. Employees thus acquire broader skills which, in turn, allows for greater flexibility in performing all of the tasks within the team. This concept tends to promote employee involvement and satisfaction, and to minimize the disruptive effects of occasional absenteeism and turnover. Employees are encouraged to move from one team to another once they have learned all of the jobs in the team. This further adds to the fulfillment of employee interests and to the expansion of experiences and achievements.

The team concept encourages employee responsibility and involvement. For example, employees may have responsibility for training team members; assessing individual team members' progress in satisfactorily performing job assignments; forecasting efficiency, scrap, and manpower requirements in their operating areas; recommending corrective action for improper conduct of team members; contributing to the selection of new employees; selecting team leaders; and maintaining operation of tools and equipment within process standards.

Employee-management communications essential. In our plants, emphasis is placed on effective communication, particularly face-to-face communication. It begins with the orientation, which includes, in addition to traditional topics, a thorough review of the plant's philosophy and goals. Periodic plant meetings and team meetings are used to discuss aspects of the business—for example, quality, schedules, scrap and rework, housekeeping, safety, employee facilities, production facilities, and customer orders. There also is ample opportunity for employees to discuss their concerns with management.

The role of the personnel department at General Motors is to facilitate the development of the quality-of-worklife process by consulting with management, with employees, and with their elected representatives. Well-conceived and effectively administered personnel programs are absolutely essential for a strong quality-of-worklife effort.

One such program is a system of redress for those employees not represented by a union. A formal "open door policy" is one approach, but it must have the support of all levels of management. An effective appraisal system for all employees, including managers and executives, also is essential. The appraisal also should evaluate managers' support and implementation of quality-of-worklife principles.

Training for all employees is an absolute necessity. If employees are to be involved in the decisionmaking process, if they are to grow and develop, they must have

the opportunity to acquire the necessary knowledge and skills.

Finally, it is necessary to have a statement of philosophy that spells out the general role workers have in the organization and how they are to be treated. A statement of philosophy that represents the consensus of senior management provides a basis for encouraging managerial behavior consistent across plants and functions. The philosophy also lets employees know how they can expect to be treated.

All efforts at General Motors require a firm commitment at the top levels of the corporation. Such support, combined with a variety of successful projects has led to the creation of a quality-of-worklife program in nearly all plants. This does not mean that GM has all the answers or that quality of worklife is fully developed in General Motors. There is much to be done, but the corporation is on the right track and making progress.

Future of the projects

An important shift in union-management relations began in the decade of the 1970's. Unions and management showed a willingness to explore new alternatives and, in some instances, levels of cooperation once thought impossible produced dramatic results. What about the decade of the 1980's? What is the future of quality of worklife in America?

Two critical forces will have a significant impact on the future of quality-of-worklife projects. One is the changing values of workers. Increased sense of entitlement, disregard for authority, and a general low esteem of our institutions have been major factors in the developmental years of quality of worklife. Today's workers place less emphasis on material achievement and more on personal fulfillment. The value shift of Americans will significantly impact the future of quality of worklife.

The second force is economic. While business is being challenged to respond to dramatically changing values, our country is facing economic problems. The fact is, the United States is locked in a fiercely competitive economic struggle which could have either a positive or negative impact on quality of worklife—positive if it leads to innovative solutions and negative if it results in simply greater emphasis on traditional approaches.

Our Nation's poor productivity improvement rate is a major factor contributing to our economic ills. The problem has not come about overnight. Between 1947 and 1967, output per hour of work in the United States nearly doubled. Since 1967, output per hour worked has risen only about one-fifth. And in 1978, the U.S. productivity growth rate was an alarming one-half of 1 percent, a dismal performance compared to the rate of growth of other major industrial nations, particularly Japan.

In the past, America has been able to compete with cheap overseas labor because of our capital investment. In 1978, however, capital investment per worker in this country amounted to less than \$3,700, compared with nearly \$5,000 per Japanese worker. There are many factors in addition to capital investment which contribute to Japan's envious productivity growth rate. Among them are government policies and programs that actively support economic expansion, technological innovation, harmonious union-management relations, and a totally dedicated work force. Group goals are far more important than individual successes in the Japanese structure.

I do not think we can ignore the traits present in the Japanese system. In this country, we have been overly loyal to organizational tradition. But, today, we cannot afford not to take new risks. The joint efforts of business, government, and labor are essential if we are to respond to the needs of a changing workforce and resolve our economic problems.

Stumbling blocks. As we push forward the frontiers of quality of worklife there are some formidable obstacles to overcome. One is the issue of control. Should control be viewed as external to the individual, as provided for through a supervisor and shop rules? Or should it lie within the individual's self-regulating ability and value system and based upon mutual influence and interest that leads to "win-win" rather than "win-lose" relationships? Moving from external to self-regulating sources of control would seem to be consistent with the quality-of-worklife viewpoint. How much training and how much information is management willing to provide if employees are to be self-regulating? Many organizations in the past have been cautious about sharing information, particularly financial information, for fear employees will use this knowledge to make "unfair" claims on the enterprise. □

How quality-of-worklife projects work for the United Auto Workers

IRVING BLUESTONE

In 1973, in bargaining with General Motors Corp. for a new national agreement, the United Auto Workers (UAW) proposed the establishment of a National Joint Committee to Improve the Quality of Worklife. The parties agreed to a document which set forth their gen-

Irving Bluestone recently retired as a vice president of the United Auto Workers and director of the union's General Motors department.

eral understanding on the subject and pledged to urge their respective local managements and local unions to cooperate "in (quality-of-worklife) experiments and projects."

How, where, and when to go about the task were left open for the parties to consider. Over time, certain generalized concepts have become accepted. However, the approach varies in each situation because the program is not imposed from the top down, but must be cooperatively and voluntarily developed and implemented from the bottom up—at the local union-management level.

Today, there are approximately 50 quality-of-worklife programs in UAW-GM bargaining units. Most are still in the early stages—an indication that such programs are not "instant utopias" but rather follow a slow, cautious, deliberate pace.

How did the UAW and GM go about setting up a quality-of-worklife program? What were the "nuts and bolts" steps taken and how were they implemented? While no two projects are identical, the following describes in concrete terms what happened.

The fact that the National Joint Committee to Improve the Quality of Worklife exists and urges the local parties to consider undertaking a project supplies the initiative to create interest in the subject. A local management may contact the local union shop committee (or vice versa) suggesting the local parties discuss the possibility of initiating a quality-of-worklife project. The local union as a rule will contact the international union and ask for a thorough explanation of the concept, how it works, what it entails, and its advantages and disadvantages.

An international union representative will meet with the local union official and describe in detail the meaning and purpose of the concept and what has been done elsewhere and why. The representative will set forth certain guiding principles which are usually agreed upon as a basis for proceeding:

- There must be no increase in production standards as a result of the quality-of-worklife program—an assurance against speed-up. (Naturally, increased production due to technological change is another matter.)

- There must be no loss of jobs as a result of the program—an assurance of job security. (Obviously, layoffs due to business cycles are another matter.)

- The provisions of the national agreement and of the local agreements and practices remain inviolable.

- The program will be voluntary. No worker will be compelled to participate.

- The union representatives will be involved in all aspects of the program—sharing with management equally in the development and implementation of the program.

- Either party may cancel the program at any time—an assurance against either being tied to a project in which it has lost faith.

The local, after full discussion, will decide whether to proceed. It is advised to "go slow," to experiment with a pilot project at first and approach the program on a "cut and try" basis. The local understands that normal collective bargaining continues, that a quality-of-worklife program will not solve all the plant problems.

In the UAW-GM approach, no separate quality-of-worklife committee is formed. The local union shop committee—the elected representatives of the workers for purposes of handling grievances and bargaining—is the union counterpart in the program. This avoids any conflict in determining which subjects fall within the purview of adversarial collective bargaining and which are subject to the cooperative effort of quality of work-life.

A quality-of-worklife program cannot succeed unless the local parties develop a collective bargaining climate of mutual respect, a climate in which solving problems supersedes beating the other party down. Therefore, the first phase, before the parties can move significantly toward worker participation programs, entails fostering a mutually respectful relationship as the groundwork for a program which will involve the workers directly.

This is no overnight task. It may take months of getting together and talking things through. Essentially the problem is attitudinal, and breaking down distrust and cynicism on both sides is a slow but extremely rewarding process.

Once phase one is well underway, the road is paved for the local parties to embark on pilot projects in which workers on a volunteer basis become involved in problem solving and participate in making decisions regarding the workplace which, heretofore, have been denied them. By now, the parties have learned to work together more cooperatively. Without pervasive rancor and suspicion beclouding their efforts, they can join mutually in analyzing the problems which trouble the workers and create the opportunity for workers to help resolve them.

The overriding consideration is that all decisions are by mutual desire and consent at the local level. Neither the corporation nor the international union instructs the local parties; each is merely a catalyst (to advise and consult) when called upon.

There is ample evidence that the introduction of a quality-of-worklife program has a salubrious effect upon the adversarial collective bargaining system. For example, simultaneously with national negotiations between the UAW and GM, the local parties negotiate on local issues, including seniority, transfer, shift preference, equalization of overtime agreements, and other propos-

als to improve working conditions and health and safety, grievances, and other issues. Of the first 90 local settlements in 1979, all of which were accomplished without a strike threat, 44 were engaged in some stage of a quality-of-worklife program. Considering there are about 50 programs at GM, this represents a noteworthy achievement.

Studies at locations where a quality-of-worklife program has existed long enough to be meaningful indicate a more constructive collective bargaining relationship; a more satisfied workforce; improved product quality; a reduction in grievance handling, absenteeism, labor turnover, and disciplinary layoffs and discharges.

These are all mutually desirable objectives; they represent benefits for the workers and advantages for both the union and the management. But above all, from the workers' point of view, they add up to one of the most fundamental objectives of unionism: the enhancement of human dignity and self-fulfillment at work.

For decades, we have heard corporation executives exclaim: "Our workers are our most valuable resource." Quality-of-worklife programs are designed to make that slogan a reality. How? By altering the autocratic climate of the workplace and providing workers, through their union, with the opportunity to participate meaningfully in the decisionmaking process at the workplace; by focusing management's orientation toward concern for the needs and aspiration of the workers; and by creating an atmosphere of cooperative effort between union and management to achieve the above noted objective. □

The quality-of-worklife project at Bolivar: an assessment

BARRY A. MACY

The quality-of-worklife project¹ at Harman International Industries, Inc., in Bolivar, Tennessee, is a cooperative change effort between the company and the United Automobile Workers of America (UAW). The project is structured so that both parties can jointly determine and implement organizational change according to mutually agreed-upon principles. The objectives of the project are to improve employees, quality of worklife and enhance organizational effectiveness.

The explicit internal goals were identified as job secu-

urity, job equity, worker humanization, and worker democracy. These were ambitious undertakings in 1973—ahead of their times in many respects—particularly because they were shared and agreed to by both labor and management. However, some of the objectives of the project have been reached and surpassed, while others have yet to be reached. Other outcomes and critical process events are discussed in an assessment study by Macy and others.²

According to the five intervention phases of the Bolivar experiment, each composed of 11 months beginning with the baseline phase through plant-wide experimentation to coincide with the change program, the following changes were measured:

Job security. More jobs were created, as the hourly employment level rose 55 percent to 839. Once the program was underway, the cooperative union-management climate stimulated an effort to develop a joint bid on a particular product, and the company and the UAW established joint efficiency rates with the goals of increasing employees' quality of worklife and improving job security. Ultimately, this venture saved 70 jobs. Voluntary turnover rates declined by 72 percent, while involuntary turnover (discharges, retirements, and so forth) rates decreased by 95 percent.

Health and working conditions. Accident rates, as defined by the Occupational Safety and Health Administration, declined 60 percent, while minor accidents decreased 20 percent even with the presence of many new and inexperienced employees. Rates of short-term absences due to sickness declined 16 percent. However, not all of the changes were favorable, as the rate of minor illnesses rose 71 percent and the rate of medical leaves increased 19 percent. (Perceptions of Bolivar employees' health appear later in this report.)

Financial security. The average hourly rate remained constant and the wage rates relative to area standards did not change (during this time, the wage rates for the whole country did not increase relative to real wages). The fringe benefit package increased by a small amount. Proposals for the introduction of a gain-sharing compensation plan (a negotiable issue) were discussed but none was adopted.

Job security based on organizational performance. Daily output per hourly-paid employee, adjusted for inflation, rose 23 percent. Two other measures of productivity—efficiency and standard performance—verify this positive change in plant performance. On the product side of the financial ledger, net product reject cost rates declined 39 percent, while the rate of customer returns decreased by 47 percent. Once again, not all was positive

Barry A. Macy is director of The Texas Center for Productivity and Quality of Work Life and associate professor of Organizational Behavior at the College of Business Administration, Texas Tech University.

as the rate of manufacturing supplies used rose 22 percent and the rate of machine downtime increased slightly. What is so striking about productivity and product quality at the Harman International plant is the fact that both of these performance measures increased. Moreover, these measures have held positive and significant trends for approximately 3 years. Some of the gains are attributable to technological and capital inputs; however, many can be attributed to the cooperative labor-management change.

Cost-benefit. The cost-benefit calculations for the project reflect the program costs and benefits per hourly-paid employee per phase, summed over 55 months. The results show a net discounted benefit per hourly-paid employee to the company of more than \$3,000. There are multiple reasons for this net savings, but nevertheless, the plant improved its performance through a combination of forces, including the cooperative quality-of-worklife program.

In summary, the evidence shows that because of the

quality-of-worklife program, jobs objectively became more secure; productivity and product quality rose; accidents decreased at a faster rate than their industry average; minor accidents declined while minor illnesses rose; short-term absences due to sickness declined; manufacturing supplies and machine downtime increased; and employee earnings held steady. Also, grievances decreased 51 percent and absences due to lack of work decreased 94 percent.

These positive behavioral and organizational performance gains seem to have had some practical implications for both the company and the union in their contractual process. The company's 1976 contract with the UAW was signed earlier than ever before and benefited both the company and the union membership by reducing the need for higher product inventories while maintaining the same employment level. These bargaining sessions, as contrasted to previous ones, were accomplished and concluded in a mutual atmosphere of cordiality, creativity, and trust. Absent was the win-lose philosophy and counterthreats that often accompany traditional labor-management bargaining. This is not to indicate that the adversary relationship between the UAW and Harman International Industries has vanished. It has not! The union still grieves contract issues; however, the spirit or climate in which grievances are handled has improved.

Generally, the behavioral and performance findings were positive, while the attitudinal indicators showed mixed results. Thirteen indicators of the quality of worklife and 24 measures of job and work environment characteristics known to be associated with higher quality of worklife are assessed in table 1. (The data refer only to UAW members; however, these indicators represent fairly well the different types of employees surveyed at the Bolivar plant.) Some of the gains have been offset by losses or no change. It must be remembered, however, that over the extended period studied, there were some unmeasured changes in the employees' level of aspirations and expectations. These changes in expectations and aspirations were enhanced by the quality-of-worklife program and the later conditions were probably judged more critically than the earlier conditions. When asked a series of questions pertaining to the goals and outcomes of the quality-of-worklife program, the employees responded generally with positive opinions about the impact, the desirability of the program, the effectiveness of the union-management relationships, and the ability of the UAW to represent membership concerns. For example, 60 percent found the program to be desirable; a majority found the joint union-management committee responsible for designing and implementing the program to be effective without domination from either party; and 67 percent indicated that the program strengthened the local union. In addi-

Table 1. Assessment of quality-of-worklife indicators and work environment characteristics

Gains	No change	Losses
QUALITY OF WORKLIFE		
Less alienation	Job satisfaction	More reports of physical stress symptoms
Treated in a more personal way	Job offers opportunity for personal growth	More reports of psychological stress symptoms
Job involved more use of, or higher level, skills	Working conditions	Less satisfaction with pay level
	Work equity	
Job is more secure	Fringe benefits	Less satisfaction with pay equity
WORK ENVIRONMENT		
Supervisors more participative	Role conflict	Supervisors are less work-facilitating, supportive, and respectful
	Job variety	
More work-group participation	Supervisory closeness, favoritism, and feedback	
More employee influence over task-related decisions	Work-group feedback	Less satisfaction with work group
More adequate work resources	Employee influence over work-schedule decisions	Less association between work performance and reward received (3 indicators)
More work improvement ideas provided by employees	Association between job security and intrinsic motivation with work performance	Less job feedback
	General organizational climate	
	Work improvement suggestions	

NOTE: Assessment based on 85 matched UAW members.

tion, 90 percent of the UAW membership were satisfied with the local union in 1976, compared with 78 percent in 1973. This is substantially higher than the satisfaction level of a national sample of blue-collar union members with their union during this period.³ Moreover, union membership at the Bolivar plant has increased from 65 percent to more than 90 percent, and 100 percent of the union membership responded affirmatively when asked: "If there were an election today on whether or not the union should be kept at Harman International Industries, how would you vote?"

These results and other outcomes not reported here⁴ seem to indicate that the union members prefer to use joint union-management programs to deal with quality of worklife and other important domains of their life at work. Recently, many other reports and studies⁵ have indicated similar trends and like results with other union members. One trend seems very clear. The time is ripe for the U.S. industrial relations system to seriously consider cooperative union-management programs along with their traditional contractual and collective bargaining structures and processes. □

— FOOTNOTES —

¹ The project was independently assessed during 1972–79. The behavioral and performance outcomes were evaluated for 55 consecutive months during 1972–76. Support for this article was provided by the Ford Foundation and the Economic Development Administration, U.S. Department of Commerce.

² B. A. Macy, G. E. Ledford, Jr., and E. E. Lawler III, *An Assessment of the Bolivar Quality of Work Life Experiment: 1972–1979* (New York, Wiley-Interscience, forthcoming).

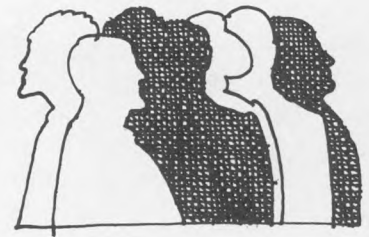
³ R. P. Quinn and G. L. Staines, *The 1977 Quality of Employment Survey* (Ann Arbor, University of Michigan, Survey Research Center, 1978). A general discussion of the survey results is described in an article by G. L. Staines and R. P. Quinn, "American workers evaluate the quality of their jobs," *Monthly Labor Review*, January 1979, pp. 3–12. For a more in-depth discussion of union attitudes, see T. A. Kochan, "How American workers view labor unions," *Monthly Labor Review*, April 1979, pp. 23–31.

⁴ See Macy et al, *An Assessment*.

⁵ For example, see T. A. Kochan, D. Lipsky, and L. Dyer, "Collective Bargaining and the Quality of Work—the Views of Local Union Activists," *Proceedings of the Twenty-Seventh Annual Meeting* (Madison, Wis., Industrial Relations Research Association, 1975), pp. 150–62; A. Ponak and C. Fraser, "Union Activists' Support for Joint Programs," *Industrial Relations*, Spring 1979, pp. 197–209; B. A. Macy, "A Progress Report on the Bolivar Quality of Work Life Project," *Personnel*, August 1979, pp. 527–30 and 557–59; P. S. Goodman and E. E. Lawler III, *New Forms of Work Organization in the United*

States (Geneva, Switzerland, International Labor Organization, 1977); J. Drexler and E. E. Lawler III, "A Union-Management Cooperative Project to Improve the Quality of Work Life," *The Journal of Applied Behavioral Science* (July-August-September, 1977), pp. 351–86; I. Bluestone, "The Quality of Work Life Project Between UAW and Harman International Industries," paper presented at the Thirty-Seventh Annual Meeting, The Academy of Management, Aug. 14–18, 1977; E. E. Lawler III and L. Ozley, "Winning Union-Management Cooperation," *Management Review* (March 1979), pp. 19–24; E. E. Lawler III, and J. Drexler, "The dynamics of establishing cooperative quality-of-worklife projects," *Monthly Labor Review*, March 1978, pp. 23–28; D. Nadler, "Hospitals, Organized Labor and Quality of Work: An Intervention Case Study," *The Journal of Applied Behavioral Science* (September 1978), pp. 366–81; J. Perry and others, *The Impact of Labor-Management Relations on Productivity and Efficiency in Urban Mass Transit* (Institute of Transportation Studies and Graduate School of Administration, University of California at Irvine, 1979); B. A. Macy and M. Peterson, "Evaluating Attitudinal Change in a Longitudinal Quality of Work Life Intervention," in S. Seashore, E. Lawler III, and others, eds., *Observing and Measuring Organizational Change: A Guide to Field Practice* (New York, Wiley-Interscience, forthcoming); P. S. Goodman, *Assessing Organizational Change: The Rushton Quality of Work Experiment* (New York, Wiley-Interscience, 1979); B. A. Macy and A. Nurick, *Assessing Organizational Change and Participation: The TVA Quality of Work Experiment* (New York, Wiley-Interscience, forthcoming); and M. Duckles, R. Duckles, and M. Maccoby "The Process of Change at Bolivar," *The Journal of Applied Behavioral Science* (July-August-September, 1977), pp. 387–99.

Special Labor Force Reports—Summaries



Trends in educational attainment among workers in the 1970's

ANNE McDOUGALL YOUNG

The proportion of working men and women with some college education increased steadily throughout the 1970's. By March 1979, 36 percent of all workers age 18 and over had completed at least 1 year of college, up from 26 percent 9 years earlier; about half of those with some college education had completed at least 4 years. The proportion of workers whose formal education had ended with high school graduation remained close to 40 percent throughout the decade, but the percent who had not completed high school declined considerably (table 1).¹

Labor force participation. During the 1970's, the proportion of men participating in the labor force continued to fall. The decline was steepest for those with less than a high school education—from 73 percent in 1970 to 62 percent in 1979 (table 2). As might be expected, the decrease was greatest among dropouts 55 years old and over, who were least equipped educationally to compete in an increasingly technological and specialized labor market, and who, in many cases, qualified for social security or other retirement benefits. But even the labor force participation rates of males with a high school education or better, with the exception of those under 25, tended to edge downward over the decade.

In contrast to the situation for men, women with at least a high school education sharply increased their labor force participation during the 1970's. When ranked by age and years of school completed, the greatest surge occurred among those 25 to 34 with 1 to 3 years of college. Their labor force participation rate rose from 45 percent to 67 percent between March 1970 and March 1979. The pattern of rising labor force participation also extended to younger women who had dropped out of high school and who lacked job market experience as well.

Anne McDougall Young is an economist in the Office of Current Employment Analysis, Bureau of Labor Statistics.

The increasing labor force participation of women is related, in part, to the growing proportion of women with post-secondary education. By 1979, 34 percent of female workers had completed at least 1 year of college, compared with 24 percent in 1970. Over the same 9-year period, the number of women awarded associate degrees² nearly tripled, while the number of men receiving such degrees almost doubled.³ As a result, women accounted for 50 percent of all associate degrees in 1979—up from 42 percent in 1970—and nearly equaled men in the proportion completing vocationally oriented science and engineering-related courses. The availability of occupational training at community colleges, as well as the convenient locations of such schools, have particularly benefited women, both recent high school graduates and older workers, by providing an opportunity to acquire

Table 1. Educational attainment of the labor force 18 and over, by sex and race, March 1970 and March 1979

[Percent distribution]

Characteristic	Total		Men		Women	
	1970	1979	1970	1979	1970	1979
ALL PERSONS						
Labor force: Number (in thousands) . . .	78,955	97,906	48,891	56,646	30,064	41,260
Percent	100.0	100.0	100.0	100.0	100.0	100.0
Elementary: 8 years or less ¹	17.5	9.0	19.9	10.5	13.7	6.9
High school: 1 to 3 years	17.3	13.1	17.5	13.4	16.9	12.7
4 years	39.0	41.4	35.1	37.9	45.5	46.3
College: 1 to 3 years	13.3	18.2	13.5	17.9	13.2	18.5
4 years	7.7	10.6	8.0	11.2	7.3	9.7
5 years or more	5.1	7.7	6.2	9.1	3.4	5.8
WHITE						
Labor force: Number (in thousands) . . .	70,186	86,177	43,962	50,526	26,224	35,651
Percent	100.0	100.0	100.0	100.0	100.0	100.0
Elementary: 8 years or less ¹	16.2	8.2	18.3	9.7	12.5	6.2
High school: 1 to 3 years	16.4	12.3	16.7	12.6	15.8	11.8
4 years	40.0	42.0	35.8	38.1	47.1	47.4
College: 1 to 3 years	13.9	18.4	14.1	18.3	13.6	18.6
4 years	8.1	11.1	8.4	11.8	7.6	10.1
5 years or more	5.4	8.1	6.6	9.6	3.5	5.9
BLACK AND OTHER²						
Labor force: Number (in thousands) . . .	8,769	11,729	4,929	6,120	3,840	5,609
Percent	100.0	100.0	100.0	100.0	100.0	100.0
Elementary: 8 years or less ¹	28.0	14.4	32.5	17.0	22.2	11.6
High school: 1 to 3 years	24.7	19.4	24.6	19.9	24.8	18.9
4 years	31.0	37.4	28.3	36.2	34.5	38.8
College: 1 to 3 years	9.0	16.7	8.0	15.2	10.3	18.3
4 years	4.7	6.9	4.3	6.5	5.1	7.3
5 years or more	2.6	5.1	2.4	5.2	2.9	5.1

¹ Includes persons reporting no school years completed.

² Includes blacks, American Indians, Japanese, Chinese, and any other race, except white.

Table 2. Labor force participation rates and unemployment rates by years of school completed, sex, and age, March 1970 and March 1979

Characteristic	Less than 4 years of high school		4 years of high school		1 to 3 years of college		4 years of college or more	
	1970	1979	1970	1979	1970	1979	1970	1979
LABOR FORCE PARTICIPATION RATES								
Men								
Total, 18 years and over	72.5	62.1	90.1	86.1	80.6	81.7	90.2	90.2
18 to 24 years	77.5	76.0	82.8	88.4	59.9	66.7	75.4	84.2
25 years and over	71.9	59.8	92.0	85.4	90.8	87.4	91.5	90.6
25 to 54 years	93.5	88.3	97.6	95.8	97.1	95.2	97.1	97.0
25 to 34 years	95.1	89.6	98.2	96.5	95.7	95.2	97.2	97.6
35 to 44 years	94.7	91.1	98.2	97.0	98.7	96.4	99.5	98.2
45 to 54 years	91.5	85.6	96.3	93.5	97.5	93.7	97.6	96.5
55 years and over	48.8	34.6	70.2	57.3	67.0	59.2	70.8	63.9
Women								
Total, 18 years and over	33.0	32.6	50.3	57.1	48.6	59.8	59.7	67.1
18 to 24 years	37.5	48.4	59.7	71.3	53.8	65.1	82.5	86.6
25 years and over	32.5	30.5	47.7	53.5	46.1	57.8	56.3	64.8
25 to 54 years	45.7	48.8	51.6	62.7	50.9	66.9	60.2	74.9
25 to 34 years	40.3	46.9	45.5	61.9	45.5	67.4	54.1	73.6
35 to 44 years	47.6	51.2	52.7	65.6	52.7	67.2	49.7	67.8
45 to 54 years	47.9	48.2	57.8	60.6	57.0	65.6	60.6	64.5
55 years and over	19.8	16.2	34.3	31.6	34.0	31.3	46.1	30.5
UNEMPLOYMENT RATES								
Men								
Total, 18 years and over	4.8	8.3	3.4	5.5	3.8	4.2	1.2	1.8
18 to 24 years	11.8	17.6	7.6	10.0	7.0	8.0	3.9	4.0
25 years and over	4.1	6.2	2.4	4.1	2.7	3.1	1.1	1.7
25 to 54 years	4.2	7.0	2.4	4.1	2.5	3.3	1.0	1.6
55 years and over	3.8	4.7	2.3	3.9	3.9	1.9	1.3	2.6
Women								
Total, 18 years and over	6.8	10.4	4.6	6.0	4.0	4.3	2.0	3.0
18 to 24 years	16.7	22.2	7.6	10.2	5.8	5.7	3.0	4.0
25 years and over	5.5	7.8	3.5	4.6	3.0	3.7	1.8	2.8
25 to 54 years	6.2	9.2	3.8	4.9	3.7	3.0	2.0	2.8
55 years and over	3.8	4.6	2.1	3.2	.7	3.4	1.0	2.4

para-professional training for a wide variety of jobs.

Historically, college graduates have maintained relatively high labor force participation rates. As expected, rates for male graduates under age 55 remained high during the 1970's. Among female graduates, however, the growth in labor force participation rates was truly startling. The rate increased nearly 20 percentage points for graduates age 25 to 34 and by almost as much among those 35 to 44. Apparently, women college graduates have become more determined to use their skills in the labor market.

Women have been keeping up with men in terms of the proportion receiving a bachelor's degree, but still lag far behind in the acquisition of advanced degrees.⁴ However, women continued to increase, at least slightly, their percentage representation among graduates in the various fields at all degree levels over the decade. Among bachelor's and master's degree recipients, representation increased most in those fields which had relatively few female graduates in the early 1970's. Among Ph.D recipients, the opposite relationship prevailed; the smaller the representation of women early in the decade, the smaller the percentage-point gain. In the words of one observer, "It may be conjectured that the

complex sociocultural forces which are influencing women to enter nontraditional fields of study have not been operating long enough to be manifest at the highest degree levels. If this is so, then the trends already observed at the bachelor's and master's degree levels may soon be evident at the doctoral degree level."⁵

Unemployment. In March 1980, unemployment rates continued their traditional relationship to years of school completed; that is, the more years of education, the lower the unemployment rate (table 2). As might be expected, older workers were less likely than younger ones to be unemployed, regardless of their educational attainment. Black workers had higher unemployment rates than whites at every level of educational attainment. The difference was greatest for men who had completed only 1 to 3 years of high school, but black unemployment rates were double those of whites even among college graduates.

Occupations. The steady rise in average years of school completed by American workers has led to a substantial upward shift in the educational levels of workers in ma-

jor occupational groups. College graduates dominated high-level white-collar occupations to a much greater extent in 1979 than in 1970. Over the same period, the proportion of blue-collar workers who were at least high school graduates also increased (table 3).

During the 1970's, college graduates filled an increasing proportion of professional and technical jobs formerly held by persons with only a high school diploma. The proportion of workers in professional and technical occupations who were college graduates grew from 61 to 71 percent for men and from 54 to 63 percent for women over the decade. Similarly, the proportion of managers who had either attended or graduated from college rose, while the proportion of such positions held by high school dropouts declined sharply. The latter change also reflected the retirement from the labor force of older workers who had attained positions of responsibility many years earlier.

The proportion of sales and clerical workers of both sexes who were college graduates almost doubled over the decade, while the percentage with fewer than 12 years of high school fell by more than half. Among male clerical workers, for example, the proportion without a high school diploma dropped from 30 to 13 per-

cent, and among women, from 20 to 8 percent. Computerization of business transactions and other changes in office practices have obviously generated a need for more highly trained workers. The increase in the supply of such workers thus coincided with, and made possible, the use of more complex information processing techniques. The upgrading of the educational level of workers was apparent among other occupations as well. For example, in 1970, more than half of all blue-collar and service workers had completed fewer than 4 years of high school, but by 1979, 44 percent were high school graduates and the proportion with 1 or more years of college had doubled.

Over the decade, the content of many jobs has changed drastically because of technological advances. Nonetheless, the data appear to indicate that many better educated persons are entering jobs for which formal educational requirements in previous years were far lower. This trend could have negative repercussions. "To the extent that growing numbers of workers may perceive themselves to be overqualified for their jobs," writes one analyst, "declining job satisfaction may reflect a worsening match between workers' educational attainment and the actual requirements of the work

Table 3. Proportion of workers 25 years and over in major occupational groups, by educational attainment and sex, March 1970 and March 1979

Sex and occupation	Total employed, 25 years and over (in thousands)		Percent with less than 4 years of high school		Percent with 4 years of high school only		Percent with 1 to 3 years of college		Percent with 4 years of college or more	
	1970	1979	1970	1979	1970	1979	1970	1979	1970	1979
MEN										
Total	40,889	44,154	42.3	23.6	30.7	35.3	11.6	17.2	15.4	23.9
White-collar workers	16,863	20,434	18.0	7.7	28.4	24.8	18.9	21.0	34.7	46.5
Professional and technical workers ..	6,141	7,802	6.0	2.0	16.3	11.1	17.2	16.2	60.5	70.6
Managers and administrators	5,107	7,356	22.6	11.3	32.1	30.5	19.7	22.2	25.6	35.9
Sales workers	2,789	2,658	23.8	8.7	35.0	31.6	22.0	26.9	19.2	32.8
Clerical workers	2,826	2,618	29.5	12.9	41.8	42.8	18.4	25.8	10.3	18.5
Blue-collar workers	19,318	18,829	59.2	36.7	33.0	45.8	6.2	13.8	1.6	3.6
Craft workers	9,242	9,583	52.1	30.3	37.7	48.7	8.0	16.4	2.2	4.6
Operatives, except transport	5,236	4,538	62.4	40.6	31.5	45.2	5.0	11.7	1.1	2.4
Transport equipment operatives	2,466	2,610	64.8	43.9	29.8	41.6	4.6	11.4	.9	3.0
Laborers	2,374	2,098	73.9	48.4	21.2	39.2	3.7	10.0	1.1	2.4
Service workers	2,994	3,210	53.6	36.0	30.1	39.5	8.5	16.8	2.6	7.7
Farmers and farmworkers	1,869	1,681	65.1	46.9	26.1	35.8	5.7	9.6	3.2	7.7
WOMEN										
Total	23,249	30,283	37.8	20.2	39.3	44.9	11.4	17.1	11.4	17.8
White-collar workers	13,748	19,858	19.2	7.7	45.7	45.6	16.5	21.1	18.6	25.6
Professional and technical workers ..	3,784	5,603	6.7	2.2	19.7	15.4	19.1	19.1	54.2	63.3
Managers and administrators	1,000	2,190	27.0	10.9	42.5	42.6	16.7	22.3	13.9	24.2
Sales workers	1,688	1,868	38.8	17.6	46.8	52.0	10.8	19.1	3.6	11.3
Clerical workers	7,276	10,197	20.0	8.0	59.4	61.7	16.4	22.4	4.2	7.9
Blue-collar workers	4,493	4,485	66.4	48.2	29.9	43.4	3.0	6.1	.7	2.3
Craft workers	465	556	52.5	33.6	37.8	46.0	7.3	13.1	2.4	7.2
Operatives except transport	3,681	3,398	68.7	52.6	28.4	41.7	2.4	4.3	.5	1.4
Transport equipment operatives	120	209	50.0	23.4	43.3	56.9	5.8	16.7	.8	2.9
Laborers	227	322	64.3	41.9	30.8	48.1	4.0	6.2	.9	3.7
Service workers	4,798	5,630	63.4	41.6	30.4	43.6	5.1	11.9	1.1	3.0
Farmers and farmworkers	208	310	65.4	35.5	26.0	44.2	6.3	11.9	2.4	9.4

they perform,"⁶ and emerge as a major problem for workers and employers in the 1980's. □

— FOOTNOTES —

¹ Data for this report are based primarily on special annual tabulations of information obtained through the Current Population Survey, conducted monthly for the Bureau of Labor Statistics by the Bureau of the Census. The data relate to the civilian noninstitutional population 16 years and over (unless otherwise specified) in the week ending Mar. 17, 1979. Because the estimates are based on a sample, they may differ from the figures that would have been obtained from a complete census. Sampling variability may be relatively large in cases where the numbers are small. Small estimates, or small differences between estimates, should be interpreted with caution. This report is the latest in a series on this subject. The most recent was published in the *Monthly Labor Review*, February 1979, pp. 54-58, and reprinted as Special La-

bor Force Report 225. Data on the educational attainment of the population are published by the Bureau of the Census in *Current Population Reports*, Series P-20.

² A degree awarded for completion of programs below the baccalaureate level, based on fewer than 4 years of work beyond high school in an accredited institution of higher learning.

³ Marie Evans Hooper, "Associate Degrees and Other Formal Awards Below the Baccalaureate, 1969-70" (National Center for Educational Statistics, U.S. Department of Health, Education, and Welfare), Publication No. (OE) 72-48, table C, and unpublished data for 1977-78 from the National Center for Education Statistics.

⁴ George H. Brown, "Degree Awards to Women: An Update" (National Center for Education Statistics, U.S. Department of Health, Education, and Welfare), January 1979, p. 3.

⁵ *Ibid.*, p. 17.

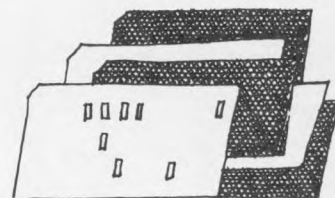
⁶ Denis Johnston, *Social Indicators III*, Ch. VII (U.S. Bureau of the Census, forthcoming).

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 polemi-

cal 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.

Research Summaries



Wage gains in 1979 offset by inflation

JOAN D. BORUM

Although workers received large pay gains in 1979, prices rose at an even higher rate and their purchasing power fell. Many of the key statistical series discussed in this article posted smaller money wage increases in 1979 than in 1978. And, for the first time since 1974, they all showed declines when adjusted for inflation. A number of forces tempered 1979 wage increases, including the voluntary wage and price standards announced by President Carter in late 1978, a slowdown in employment growth, and a decline in productivity.

Compensation measures

The Bureau publishes several measures of changes in employee compensation.¹ Some cover rates of pay, others study workers' earnings. Depending on the series, the data may reflect payments for benefits as well as wages and may show the influence of weekly hours and Federal tax rates. Data usually are available in both current dollars and 1967 dollars. A brief review of key measures in 1979 follows. Earnings data reflect percent changes from December to December; average hourly compensation data reflect percent changes from fourth quarter to fourth quarter.

Gross average hourly earnings, one of the basic measures, covers production and nonsupervisory workers in the private nonfarm sector. In 1979, these earnings rose 7.9 percent, considerably less than the 9.4-percent rise in 1978. (See table 1.) When adjusted for inflation, real earnings were down by 4.8 percent, compared with a 0.3-percent increase in 1978.

The *Hourly Earnings Index* is widely used for measuring the general movement in wages because it eliminates from the gross hourly earnings the effects of interindustry employment shifts (that is, changes in the relative number of workers in high-paying and low-paying industries) and overtime fluctuations in manufacturing. This index increased 8.4 percent—about the same

as in 1978. However, after adjustment for price increases, the index was down 4.4 percent, compared with a 0.5-percent decrease in 1978.

Average weekly earnings reflect both gross hourly earnings and the number of weekly hours. Because of a decline in weekly hours during 1979, average weekly earnings rose at a 7.6-percent rate, slightly less than gross average hourly earnings. Real average weekly earnings declined at a 5.1-percent rate, after rising slightly (0.1 percent) in the previous year.

Spendable weekly earnings measure weekly earnings after deductions of Federal social security and income taxes for a worker earning the average weekly pay, taxed at the rates applicable to a married worker with three dependents. This series posted a 7.6-percent gain in 1979, considerably more than in 1978 (5.7 percent). When adjusted for inflation, spendable weekly earnings were down 5.1 percent, a steeper drop than in 1978 (-3.1). Unlike other earnings measures, this series was affected by an increase in social security taxes. The 1979 tax paid by employees (and matched by their employers) was 6.13 percent of the first \$22,900 of annual earnings; in 1978, the tax was 6.05 percent of the first \$17,700 of earnings. The series was also influenced by revisions in the Federal income tax laws.

Compensation per hour, a more inclusive measure, in-

Table 1. Percent change in employee compensation measures, 1974-79¹

Measure	1974	1975	1976	1977	1978	1979
Gross average hourly earnings: ²						
Current dollars	8.4	6.1	7.7	7.6	9.4	7.9
1967 dollars	-3.4	-1.1	2.9	.7	.3	-4.8
Hourly Earnings Index: ²						
Current dollars	9.2	7.2	7.5	7.4	8.5	8.4
1967 dollars	-2.8	.1	2.6	.6	-5	-4.4
Average weekly earnings: ²						
Current dollars	6.3	6.7	6.8	7.3	9.1	7.6
1967 dollars	-5.4	-4	1.9	.4	.1	-5.1
Spendable weekly earnings: ²						
Current dollars	5.6	10.7	5.0	10.4	5.7	7.6
1967 dollars	-5.7	3.3	.2	3.4	-3.1	-5.1
Average hourly compensation: ³						
Current dollars	10.9	8.6	9.2	7.2	9.1	9.2
1967 dollars	-1.2	1.1	4.0	.5	.1	-3.2

¹ Changes are based on seasonally adjusted data and reflect fourth quarter to fourth quarter change for average hourly compensation and December to December change for other measures.

² Covers production and nonsupervisory workers in the private nonfarm economy.

³ Covers all persons in the private business sector.

Joan D. Borum is an economist in the Office of Wages and Industrial Relations, Bureau of Labor Statistics.

cludes wages and salaries plus employer contributions for social insurance and private benefit plans.² Hourly compensation for all persons in the private business sector increased 9.2 percent; for those in the private nonfarm business sector, 9.0 percent; and in manufacturing, 9.2 percent. Comparable changes in 1978 were 9.1, 9.1 and 8.7 percent. Although hourly compensation rose substantially in the private business sector, productivity—output per hour of labor input—fell 1.7 percent. As a result, labor costs per unit of output rose even more rapidly than hourly compensation.

The *Employment Cost Index*, a relatively new series, provides a more refined measure of change in the "price" of labor. Covering both supervisory and non-supervisory workers, this series measures changes in pay rates of a standardized mix of labor services. It is, therefore, unaffected by shifts of workers among occupations, firms, and industries. Data currently available pertain to wage and salary rates in the private nonfarm economy, excluding households, as approximated by straight-time hourly earnings.

In 1979, overall pay increases, as measured by the index, averaged 8.7 percent, up from 7.7 percent in 1978. (See table 2.) Pay in manufacturing was up 8.6 percent, nearly the same as in nonmanufacturing (8.8 percent). Among industries, pay increases ranged from 7.2 percent in construction to 13.2 percent in finance, insurance, and real estate—where compensation is largely influenced by fluctuations in commission earnings for sales workers. Among occupational classifications blue-collar workers received the highest 1979 pay increase, averaging 9.0 percent, followed by white-collar workers (8.6 percent), and service workers (7.2 percent). As in previous years, union workers received larger increases than nonunion workers. The differential can be attributed largely to wage increases in manufacturing where pay advanced 9.4 percent for union workers, compared with a 7.9-percent increase for nonunion workers.

Wage changes under major labor contracts

Data on wage changes in major collective bargaining units are restricted to bargaining units covering 1,000 workers or more in the private nonfarm sector. About 1 worker in 10 in the civilian labor force is covered by a major bargaining agreement. The agreements are usually in key industries and often set wage patterns for other establishments. Two basic types of data are available—data limited to contract settlements negotiated in the current period and all general wage changes put into effect in the period.

Negotiated wage settlements affect a limited number of workers each year, but generally are reflective of current economic conditions and, because they usually cover 2 or 3 year periods, tend to influence wage increases in the following years. New contracts negotiated during

Table 2. Rate of wage and salary changes in Employment Cost Index, 1979

(In percent)

Characteristics	3 months ended				12 months ended Dec.	
	Mar. 1979	June 1979	Sept. 1979	Dec. 1979	1978	1979
All private nonfarm workers	2.0	1.9	2.1	2.4	7.7	8.7
Occupation:						
White-collar	1.9	1.7	2.3	2.4	7.2	8.6
Blue-collar	1.9	2.3	2.0	2.5	8.2	9.0
Service	3.2	.9	1.1	1.8	8.7	7.2
Industry:						
Manufacturing	1.7	1.8	1.8	3.1	8.3	8.6
Nonmanufacturing	2.2	2.0	2.3	2.0	7.4	8.8
Construction	1.3	2.6	2.0	1.1	7.8	7.2
Transportation and public utilities	2.6	1.6	2.9	2.0	7.6	9.4
Wholesale and retail trade	2.1	2.4	1.9	1.3	8.3	7.9
Finance, insurance and real estate	3.1	3.2	1.9	4.3	(¹)	13.2
Services	2.1	1.1	2.6	2.5	6.7	8.5
Region:						
Northeast	1.5	1.7	1.7	2.1	7.1	7.3
South	2.6	1.7	1.7	2.4	9.3	8.5
North Central	1.9	2.5	2.0	2.6	6.9	9.4
West	2.0	2.0	2.5	1.8	7.8	8.5
Bargaining status:						
Covered by collective bargaining agreement	1.8	2.1	2.2	2.6	8.0	9.0
Not covered by collective bargaining agreement	2.1	1.9	1.9	2.3	7.6	8.5
Area:						
Metropolitan areas	2.0	2.0	2.2	2.5	7.5	8.9
Other areas	2.1	2.1	1.6	1.9	9.0	7.9

¹ Not available.

NOTE: The statistics are percent changes in straight-time average hourly earnings over the period indicated. They are not annualized, nor are they adjusted for seasonal influences.

1979 provided for average first-year wage gains of 7.4 percent, the lowest since 1973. Annual wage adjustments over the life of the contracts averaged 6.0 percent, less than in any year since 1973, except 1977. (See table 3.)

In bargaining units with 5,000 workers or more, 1979 wage and benefit adjustments averaged 9.0 percent in the first contract year and 6.6 percent annually over the life of the agreement, compared with 8.3 and 6.3 percent in 1978.

About 58 percent of the workers covered by contracts negotiated in 1979 had cost-of-living adjustment (COLA) provisions in their agreements (37 percent in 1978), and most of these workers also had escalator provisions in their prior agreements. The existence of COLA clauses influences the size and the duration of settlements. (However, actual COLA increases are not included in the data presented here.) Agreements without automatic escalator provisions usually specify higher annual rates of change over the contract life. In units with 1,000 workers or more, 1979 contracts without COLA clauses specified an average annual wage increase of 8.0 percent; those with COLA's averaged 4.6 percent.

Agreements with COLA provisions are generally for a longer duration than those without escalator clauses. In 1979, the average duration for settlements with COLA

Table 3. Percent change in wages and wages and benefits in major collective bargaining agreements, 1974-79

Measure	1974	1975	1976	1977	1978	1979
Settlements:¹						
Wage rate settlements (1,000 workers or more):						
First-year adjustment	9.8	10.2	8.4	7.8	7.6	7.4
Annual rate over life of contract	7.3	7.8	6.4	5.8	6.4	6.0
Contracts with COLA clauses						
Contracts with COLA clauses	6.1	7.1	5.7	5.0	5.3	4.6
Contracts without COLA clauses						
Contracts without COLA clauses	9.1	8.3	7.3	6.9	7.1	8.0
Wage and benefit settlements (5,000 workers or more):						
First-year adjustment	10.7	11.4	8.5	9.6	8.3	9.0
Annual rate over life of contract	7.8	8.1	6.6	6.2	6.3	6.6
Contracts with COLA clauses						
Contracts with COLA clauses	7.1	7.5	6.2	5.9	5.3	5.9
Contracts without COLA clauses						
Contracts without COLA clauses	9.4	8.5	7.6	7.0	7.2	8.0
Effective wage-rate changes:						
Total effective wage-rate adjustment	9.4	8.7	8.1	8.0	8.2	9.1
Adjustment resulting from:						
Current settlement	4.8	2.8	3.2	3.0	2.0	3.0
Prior settlement	2.6	3.7	3.2	3.2	3.7	3.0
Escalator provision	1.9	2.2	1.6	1.7	2.4	3.1

¹ Data exclude possible increases under escalator provisions, except for minimum increases guaranteed by the contract.

NOTE: Data relate to private nonfarm agreements.

was 35.9 months, 6 months longer than those without such clauses.

Effective wage-rate changes are more comprehensive than the settlement data and are more comparable to the earnings measures. This measure comprises all changes put into effect in a given period, including gains won in current settlements, increases negotiated in earlier years (deferred changes), and payments triggered by automatic cost-of-living escalator clauses. The size of each type of increase and the number of workers affected determine the total effective adjustment. Although the 9.1-percent average adjustment in 1979 for 9.3 million production and nonsupervisory workers was the highest since the 9.4-percent increase in 1974, it was considerably less than the 13.4-percent rise in prices (as measured by the Consumer Price Index for Urban Wage Earners and Clerical Workers—CPI-W). This is the second consecutive year in which wage changes in bargaining units averaged less than the change in prices.

The following tabulation compares the percent increase in the Consumer Price Index for Urban Wage Earners and Clerical Workers with wage changes in major collective bargaining units:

	CPI	Total effective adjustment	Average escalator increase
1975	7.0	8.7	4.8
1976	4.8	8.1	3.5
1977	6.8	8.0	3.9
1978	9.0	8.2	5.0
1979	13.4	9.1	6.8

The current settlement component of the effective-change measure is normally the largest of the three components in terms of the size of increase. During 1979, 3.5 million workers received increases averaging 7.9 percent as a result of settlements during the year. When prorated over the 9.3 million workers in the bargaining universe, this accounted for 3.0 percentage points of the total adjustment. (See table 3.)

The deferred component is more influential in light bargaining years, when fewer workers are covered by settlements and more receive deferred wage increases. In 1979, 5.5 million workers had deferred increases averaging 5.1 percent, accounting for 3.0 percentage points of the total effective adjustments.

Although a smaller portion of workers under major agreements received increases from COLA (44 percent, compared with 48 percent in 1978), the average size of their increases was larger (6.8 percent compared with 5.0). Prorated over all workers in major bargaining units, the average escalator adjustment was 3.1 percent. Interestingly, both the size of the average escalator adjustment and its share of the total adjustment were higher in 1979 than in any year since data became available in 1968.

The size of cost-of-living adjustments reflects the type of COLA formula, the timing of COLA reviews, and possible "caps" or limits on increases. In 1979, workers receiving COLA increases under major agreements recovered an average 51 percent of the rise in consumer prices. The most common formula, calling for a 1-cent an-hour increase for each 0.3-point rise in the CPI, affected about 2.1 million workers.³

In 1979, a heavy bargaining year, 3.5 million workers negotiated new contracts. The transportation equipment manufacturing industry accounted for about one-fifth of the total; the transportation industry accounted for another one-fifth; and many of the remaining workers were in the apparel, construction, electrical equipment, food manufacturing, and retail food store industries. More than 3.7 million workers are covered by contracts either expiring or permitting wage reopenings in 1980, another heavy bargaining year.⁴ Key agreements to be negotiated are in the petroleum refining, construction, steel, telephone, and aerospace industries. Although the size of new settlements and the effective adjustments to be implemented cannot be predicted, it is known that 4.9 million workers are scheduled to receive deferred increases averaging 5.1 percent and that cost-of-living reviews are scheduled for 3.6 million workers.⁵ □

— FOOTNOTES —

¹ For an overall description of the programs, see *BLS Measures of Compensation*, Bulletin 1941 (Bureau of Labor Statistics, 1977).

² Except for nonfinancial corporations in which there are no self-

employed, data also include an estimate of wages, salaries, and supplemental payments for the self-employed.

³For additional analysis of current escalator coverage and provisions, see Edward Wasilewski, "Scheduled wage increases and escalator provisions in 1980," *Monthly Labor Review*, January 1980, pp. 9-13.

⁴For a more detailed discussion of the collective bargaining schedule for 1980, see Mary A. Andrews and Winston Tillery, "Heavy bargaining again in 1980," *Monthly Labor Review*, December 1979, pp. 20-28.

⁵The remaining 1.1 million workers are under clauses that do not provide for a review in 1980, primarily in contracts scheduled to expire during the year.

Working wives reduce inequality in distribution of family earnings

FRANCIS W. HORVATH

Past studies have shown that working wives move the aggregate family earnings distribution towards greater equality.¹ That is, the distribution of *family* earnings has shown more relative equality than the distribution of *husbands'* earnings. This effect occurred, in part, because the wives entered the labor force in greater numbers from families with lower than average earnings. Labor force participation of wives had been found to be negatively related to the earnings of their husbands.²

In recent years, more wives from higher income families have been entering the labor force.³ In the absence of other changes that would affect the earnings distribution of families (for example, changes in the participation rate or earnings of wives of low earners), an increase in the labor force participation rate of wives of high earners would increase family earnings inequality *regardless* of the level of wives' earnings. This occurs because families already near the top of the earnings distribution with only the husband working will move farther up the distribution with any additional earnings of the wife. In addition, if these wives display earnings which are higher than average for women, the increase in inequality would even be greater.⁴ Such a positive relationship between earnings of husbands and wives can be expected, given the observed tendency of men and women to marry persons with socioeconomic characteristics and hence earnings capacities similar to their own. While the extent to which earnings capacities are translated into current earnings is tempered by a variety of institutional and personal factors, including the individual's lifetime labor force participation and the degree of discrimination in the labor market, an emerging positive relationship between observed earnings of husbands and

wives will tend to increase inequality in the family earnings distribution.

The question is: is the distribution of the combined earnings of husbands and wives still more equal than the distribution of earnings of husbands alone? Ideally, the appropriate test would involve a comparison of standardized inequality measures over time. The test here involves a single point in time. Nevertheless, it is possible to highlight the increasing influence of working wives on earnings inequality by contrasting two work experience groupings: all husband-wife families and families with both spouses working year round, full time. If two-earner families continue to increase as a proportion of husband and wife families, a comparison of earnings inequality between couples who each work full time and overall families may provide some indication of future trends.

The difference between the distribution of husbands' earnings and the distribution of the combined earnings of husbands and wives can be accounted for completely by three factors: the distributions of wives' earnings, husbands' earnings, and the interrelationship between husbands' and wives' earnings. The impact of working wives' earnings will be reflected by a difference in the measures of inequality between the earnings distributions for husbands and the combined husband-wife earnings distribution.

To examine inequality, we employ a method similar to that used by Jacob Mincer in *Schooling, Experience, and Earnings*.⁵ Simply stated, inequality is measured by the size of the standard deviation of the natural logarithm of earnings. The lower this measure is, the more equal is the distribution of earnings. (See appendix.)

The data used here are for 1977 and are based on a subsample of the Current Population Survey of March 1978. The sample included only husband-wife families who were living together during March 1978. Excluded were families with husbands who were self employed, farmers, students, or over 64 years of age—persons whose earnings are known to vary widely. Because the log of zero is undefined, husbands with no earnings and families with zero total earnings also were omitted.

Table 1 shows the mean values for husbands' earnings, husbands' and wives' earnings, the respective standard deviations and the standard deviations of the natural logarithms of earnings. The data are displayed by age of the husband and two work experience classifications. The first set of data shows all families in the sample regardless of work experience; the second grouping contains only families in which both husband and wife worked year round, full time.

The difference in inequality between husbands and husbands and wives in the first set is related to both the labor force participation of wives and earnings levels. The second grouping, however, contains no variation in

Francis W. Horvath is an economist in the Office of Current Employment Analysis, Bureau of Labor Statistics.

Table 1. Earnings of husbands and combined earnings of husbands and wives by age of husbands and work experience, 1977

Age	Earnings		Standard deviations			
	Husbands	Husbands and wives	Absolute		Logarithms	
			Husbands	Husbands and wives	Husbands	Husbands and wives
Husband-wife families:						
16-24	\$ 9,234	\$12,309	\$ 4,467	\$ 5,810	.668	.606
25-34	14,260	17,988	7,113	8,306	.570	.522
35-44	17,787	21,301	9,465	10,317	.599	.554
45-54	17,918	21,621	9,966	10,851	.772	.600
55-64	15,241	18,362	9,747	11,031	.916	.828
Families with working spouses: ¹						
16-24	\$10,878	\$18,258	\$ 3,783	\$ 5,534	.370	.288
25-34	14,256	23,720	5,416	7,730	.366	.326
35-44	16,705	25,987	8,328	10,437	.456	.388
45-54	16,929	26,148	8,006	10,334	.565	.388
55-64	15,641	25,039	8,328	11,332	.767	.573

¹ Both spouses employed year round, full time.

labor force participation. Here, the impact of the presumed positive correlation of husbands' and wives' earnings may contribute to inequality of earnings because there is no participation-income relationship as in the first set.

The main issue is the comparison of the standard deviations of the logarithms of earnings of the husbands and the combined earnings of husbands and wives. (Smaller values indicate lesser relative inequality.) In all age groups, the combined earnings distribution shows greater relative equality than the husbands' earnings distribution alone. This was true even for families in which both husbands and wives worked year round in full-time jobs. In fact, the drop in relative inequality appears to be greater for working families than for the overall groups. That is, in families with both spouses working full time, where observed earnings more closely approximate potentials, the equalizing effect of working wives was more apparent.

APPENDIX: Variance of the natural logarithm as a measure of inequality

The variance (or standard deviation) of the natural logarithm (s^2) is one of the most frequently used measures of inequality. The larger the variance, the greater the inequality evidenced in the data. If each of the observations on earnings in a data set is increased by the same percentage, the value of the variance of the logs remains the same. However, if each of the observations is increased by a constant amount, the variance of the logs will diminish. This occurs because a fixed amount will represent a greater percentage increase for those at the

This finding becomes more intuitive after consideration of some of the facts which underlie the data. The earnings distribution of full-time, year-round working wives tends to be highly concentrated about its mean. Until this earnings distribution of wives begins to spread out, the impact on the family earnings distribution is roughly equivalent to the addition of a constant amount to each husband's earnings, which causes relative inequality to fall.

Despite larger numbers of wives from higher income families in the labor force, working wives still tend to be an equalizing force on the distribution of family earnings. The combined earnings distribution, whether for all husband-wife families or husband-wife families in which both spouses work full time year round, shows more equality than the husbands' earnings distribution. □

FOOTNOTES

¹ Works include Jacob Mincer, *Schooling, Experience and Earnings* (New York, National Bureau of Economic Research, 1974), Herman P. Miller, *Income Distribution in the United States* (Washington, Government Printing Office, 1966), and James Sweet, "The employment of wives and the inequality of family income", *Proceedings of the American Statistical Association*, 1971. A more complete discussion of some of the issues presented here appeared in James P. Smith, "The Distribution of Family Earnings", *Journal of Political Economy*, 1979, Vol. 87, No. 5, pp. S163-92. That study, which used the Census Public Use Samples and the Michigan Income Dynamics Survey Panel, comes to conclusions analogous to those here.

² Glen Cain, *Married Women in the Labor Force* (Chicago, University of Chicago Press, 1966).

³ Paul Ryscavage, "More wives in the labor force have husbands with 'above-average' incomes", *Monthly Labor Review*, June 1979, pp. 40-42.

⁴ David Ignatius, "Women at Work The Rich Get Richer As Well-to-Do Wives Enter the Labor Force," *The Wall Street Journal*, Sept. 8, 1978, pp. 1, 33 and Alice Rivlin, "Income Distribution—Can Economists Help?" *American Economic Review*, May 1975, pp. 1-19.

⁵ Mincer compared the inequality of the husbands' earnings distribution to the inequality of the total family income distribution. The use of the combined distributions of husbands' and wives' earnings differs slightly from Mincer's method. We chose this procedure because the possibility exists that family income may include other incomes besides those of the earnings of husbands and wives.

bottom of the earnings distribution than those at the top. While the absolute spread between the bottom and the top of the distribution remains the same size, inequality has lessened since the spread is around a higher mean.

The relationship between husbands' earnings and combined earnings of husbands and wives is not completely obvious, and in moving from the absolute standard deviations to the log measures, some pitfalls in interpretation can arise. In absolute terms, the relation-

ship between husbands' earnings and combined earnings follows the general form of the variance of a sum. If

$$E_T = E_H + E_W$$

where E_T is combined earnings, E_H earnings of the husband, and E_W earnings of the wife, then

$$\text{Var}(E_T) = \text{Var}(E_H) + \text{Var}(E_W) + 2 \text{Cov}(E_H, E_W).$$

The variance of the total must be greater than the variance of the husbands' and wives' earnings unless the covariance between husband and wife earnings is negative and large enough to overwhelm the variance of wives' earnings.

The relationship between the relative values is not as simple. Consider the following:

$$E_T = E_H + E_W$$

which we may write as:

$$E_T = E_H(1 + E_W/E_H) = E_H(1 + R_F)$$

where R_F is the ratio of wife's to husband's earnings. Taking the logarithm of this product yields:

$$\ln E_T = \ln E_H + \ln(1 + R_F)$$

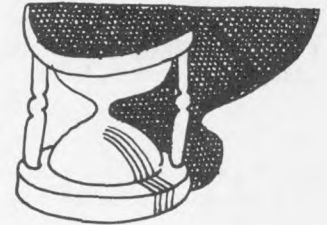
on which we may apply the variance operator as above:

$$\begin{aligned} \text{Var}(\ln E_T) &= \text{Var}(\ln E_H) + \text{Var}(\ln(1 + R_F)) \\ &\quad + 2 \text{Cov}(\ln E_H, \ln(1 + R_F)) \end{aligned}$$

It should be noted that it is possible for absolute earnings of husbands and wives to be positively related ($\text{Cov}(E_H, E_W) > 0$), and yet to observe a drop in relative inequality ($\text{Var} \ln E_T < \text{Var} \ln E_H$).

Indeed, among families in which both husband and wife work full time year round, a positive relationship was found between husband and wife earnings (not shown here) together with a large drop in relative inequality. While a positive relation between husbands' and wives' earnings will tend to reduce the equalizing effect of working women on inequality, it is only one part of the total effect. The other consequence is to reduce the variation in $\ln(1 + R_F)$, which may be closely identified with the ratio of wives' to husbands' earnings. As wives enter the full-time labor force, the bottom end of the distribution (those with a ratio of zero) drops in size, and the total variation of $\ln(1 + R_F)$ diminishes.

Major Agreements Expiring Next Month



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

Employer and location	Industry	Union ¹	Number of workers
Air Conditioning and Refrigeration Contractors Association of Southern California (California)	Construction	Plumbers	1,200
Al Tech Specialty Steel Corp. (Dunkirk & Watervliet, N.Y.)	Primary metals	Steelworkers	2,000
Alabama Power Co. (Alabama)	Utilities	Electrical Workers (IBEW)	3,500
Allegheny Ludlum Industries, Inc. (Interstate)	Primary metals	Steelworkers	5,800
American Telephone and Telegraph Co., Long Lines Department (Interstate)	Communication	Communications Workers	22,600
Armco, Inc. (Interstate)	Primary metals	Steelworkers	12,100
Babcock & Wilcock Co., Tubular Products Division (Beaver Falls, Pa.)	Primary metals	Steelworkers	5,050
Bell Telephone Co. of Pennsylvania:			
Commercial and Marketing Departments	Communication	Pennsylvania Telephone Guild (Ind.)	2,700
Comptrollers and Treasurers Department	Communication	Federation of Telephone Workers of Pennsylvania (Ind.)	1,300
Plant Department	Communication	Federation of Telephone Workers of Pennsylvania (Ind.)	12,150
Traffic Department	Communication	Electrical Workers (IBEW)	5,250
Bell Telephone Laboratories, Inc. (Illinois and New Jersey)	Electrical products	Communications Workers	1,450
Bethlehem Steel Corp. (Interstate)	Primary metals	Steelworkers	50,000
Cameron Iron Works, Inc. (Texas)	Machinery	Machinists	3,300
CF&I Steel Corp. (Pueblo, Colo.)	Primary metals	Steelworkers	6,000
Chesapeake and Potomac Telephone Co. (Interstate)	Communication	Communications Workers	31,750
Cincinnati Bell, Inc. (Ohio and Kentucky)	Communication	Communications Workers	3,500
Cleveland Cliffs Iron Co. (Interstate)	Mining	Steelworkers	3,800
Cleveland Food Industry Committee, 2 Agreements (Interstate)	Retail trade	Food and Commercial Workers	11,900
Consumers Power Co. (Michigan)	Utilities	Utility Workers	4,500
Cooper Industries, Inc., Cooper Energy Services Division (Grove City, Pa.)	Machinery	Steelworkers	1,100
Copperweld Steel Co. (Warren, Ohio)	Primary metals	Steelworkers	1,950
Crucible, Inc. (New York and Pennsylvania)	Primary metals	Steelworkers	6,300
Diamond State Telephone Co. (Pennsylvania)	Communication	United Telephone Workers of Delaware (Ind.)	1,300
Fisher Controls Co. (Marshalltown, Ia.)	Fabricated metal products	Auto Workers (Ind.)	1,700
Fluid Milk-Ice Cream Agreement (California) ²	Food products	Teamsters (Ind.)	1,350
Fry's Food Stores of Arizona, Inc. (Arizona)	Retail trade	Food and Commercial Workers	1,000
General Telephone Co. of Pennsylvania (Pennsylvania)	Communication	Electrical Workers (IBEW)	2,400
Glass Packaging Institute (Interstate)	Stone, clay, and glass products	Flint Glass Workers	3,500
Great Atlantic & Pacific Tea Co., Inc. (New York)	Retail trade	Food and Commercial Workers	1,700
Gulf Resources and Chemical Corp., Bunker Hill Co. subsidiary (Kellogg, Idaho)	Mining	Steelworkers	1,400
Harnischfeger Corp. (Milwaukee, Wis.)	Machinery	Steelworkers	2,350
Illinois Bell Telephone Co.:			
Commercial and Marketing Departments	Communication	Telephone Commercial Employees Union (Ind.)	1,800
Commercial Operations & others	Communication	Telephone Commercial Employees Union (Ind.)	2,000
Comptrollers Department & 3 others (Illinois and Indiana)	Communication	Electrical Workers (IBEW)	1,100
Military Agreement (Illinois & Indiana)	Communication	Communications Workers	13,500
Traffic Department (Illinois & Indiana)	Communication	Electrical Workers (IBEW)	6,350
Indiana Bell Telephone Co., Inc. (Indiana)	Communication	Communications Workers	7,600
Industry Food Agreement (Arizona) ²	Retail trade	Food and Commercial Workers	2,800
Inland Steel Co. (Interstate)	Primary metals	Steelworkers	18,000
Interlake, Inc., 2 Agreements (Kentucky & Illinois)	Primary metals	Steelworkers	3,200

See footnotes at end of table.

Continued—Major Agreements Expiring Next Month

Employer and location	Industry	Union ¹	Number of workers
Jones & Laughlin Steel Corp. (Interstate)	Primary metals	Steelworkers	18,900
Joy Manufacturing Co. (Franklin, Pa.)	Machinery	Machinists	1,850
Kaiser Steel Corp., Steel Manufacturing Division (Fontana, Calif.)	Primary metals	Steelworkers	6,300
Latrobe Steel Co. (Latrobe, Pa.)	Primary metals	Steelworkers	1,100
Lukens Steel Co. (Coatesville, Pa.)	Primary metals	Steelworkers	2,700
Master Plumbers' Association of Boston and Vicinity, Inc. (Massachusetts)	Construction	Plumbers	1,100
McGraw-Edison Co., Power Systems Division (Canonsburg, Pa.)	Electrical products	Steelworkers	1,500
Michigan Bell Telephone Co. (Michigan)	Communication	Communications Workers	19,850
Microdot, Inc., Valley Mould and Iron Co. Division (Ohio and Illinois)	Primary metals	Steelworkers	1,200
Mountain States Telephone and Telegraph Co. (Interstate)	Communication	Communications Workers	27,050
National Electrical Contractors Association and 1 other association (Boston, Mass.)	Construction	Electrical Workers (IBEW)	2,300
National Steel Corp.:			
Granite City Steel Division (Granite City, Ill.)	Primary metals	Steelworkers	2,500
Great Lakes Steel Division (Ecorse and River Rouge, Mich.)	Primary metals	Steelworkers	9,000
Midwest Steel Division (Portage, Ind.)	Primary metals	Steelworkers	1,300
Weirton Steel Division (Weirton, W. Va.)	Primary metals	Independent Steelworkers Union	15,000
New England Telephone and Telegraph Co. (Interstate):			
Accounting Department	Communication	Electrical Workers (IBEW)	1,500
Plant Department	Communication	Electrical Workers (IBEW)	16,000
Traffic Department	Communication	Electrical Workers (IBEW)	7,500
New England Mechanical Contractors Association, Inc. (Boston, Mass.)	Construction	Plumbers	1,350
New Jersey Bell Telephone Co.:			
Commercial and Marketing Departments	Communication	Communications Workers	3,450
Plant and Engineering Departments	Communication	Electrical Workers (IBEW)	11,200
Traffic Department	Communication	Communications Workers	4,700
Vice President and Comptroller and General Departments	Communication	Electrical Workers (IBEW)	1,300
New York Telephone Co.:			
Accounting Department (New York City area)	Communication	Telephone Employees' Organization (Ind.)	2,850
Commercial, Directory, Public Telephone, Sales and Headquarters Departments (Downstate)	Communication	Union of Telephone Workers (Ind.)	8,050
Customer Services, Directory, Accounting, Network Operations (New York)	Communication	Telephone Commercial Union (Ind.)	2,000
Empire City Subway Co. (New York City area)	Communication	Communications Workers	30,800
Traffic Department (Downstate)	Communication	Telephone Traffic Union (New York) (Ind.)	10,000
Traffic Department (Upstate)	Communication	Telephone Traffic Union (Ind.)	3,700
Northwestern Bell Telephone Co. (Interstate)	Communication	Communications Workers	20,900
Northeastern Ohio Food Industry Employers (Ohio)	Retail trade	Food and Commercial Workers	1,200
Northwestern Steel and Wire Co. (Sterling, Ill.)	Primary metals	Steelworkers	4,000
Ohio Bell Telephone Co. (Ohio)	Communication	Communications Workers	17,250
Pacific Northwest Bell Telephone Co. (Interstate)	Communication	Communications Workers	17,800
Pacific Telephone and Telegraph Company and 1 other, 3 agreements (California and Nevada)	Communication	Communications Workers and Electrical Workers (IBEW)	59,450
Phoenix Steel Corp. (Claymont, Del.)	Primary metals	Steelworkers	1,050
Quester Corp., Spalding Division (Chicopee, Mass.)	Miscellaneous manufacturing	Boilermakers	1,300
Republic Steel Corp. (Interstate)	Primary metals	Steelworkers	27,900
Reserve Mining Co. (Silver Bay and Babbitt, Minn.)	Mining	Steelworkers	2,300
Roofing Contractors Association of Southern California, Inc. (California)	Construction	Roofers	1,650
South Central Bell Telephone Co. (Interstate)	Communication	Communications Workers	60,650
Southern Bell Telephone and Telegraph Co. (Interstate)	Communication	Communications Workers	50,000
Southern New England Telephone Co. (Connecticut)	Communication	Telecommunications (Ind.)	9,000
Southwestern Bell Telephone Co. (Interstate)	Communication	Communications Workers	62,000
Teletype Corp., 2 agreements (Illinois and Arkansas)	Electrical products	Electrical Workers (IBEW) and Teletype Employees' Industrial Union (Ind.)	3,300
Timken Co. (Canton, Ohio)	Machinery	Steelworkers	8,400
U and I, Inc., Sugar Division (Interstate)	Food products	Grain Millers	3,000
United States Steel Corp.:			
American Bridge Division (Interstate)	Fabricated metal products	Steelworkers	2,300
Master Nation-wide agreement (Interstate)	Primary metals	Steelworkers	90,000
Minnesota Ore Operations (Minnesota)	Mining	Steelworkers	4,000
Salaried Employees (Interstate)	Primary metals	Steelworkers	5,800

See footnotes at end of table.

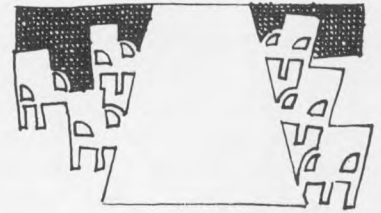
Continued—Major Agreements Expiring Next Month

Employer and location	Industry	Union ¹	Number of workers
Western Electric Co.:			
Allentown Works (Allentown, Pa.)	Electrical products	Electrical Workers (IBEW)	3,250
Atlanta Works (Norcross, Ga.)	Electrical products	Communications Workers	1,350
Baltimore Works (Maryland)	Electrical products	Communications Workers	2,200
Denver Works (Colorado)	Electrical products	Electrical Workers (IBEW)	1,850
Hawthorne Works, 2 agreements (Illinois)	Electrical products	Electrical Workers (IBEW)	6,800
Indianapolis Works (Indianapolis, Ind.)	Electrical products	Electrical Workers (IBEW)	6,250
Installation Department (Interstate)	Communication	Communications Workers	17,300
Kansas City Works (Jackson County, Mo.)	Electrical products	Communications Workers	3,350
Kearny Works (New Jersey)	Electrical products	Electrical Workers (IBEW)	5,150
Montgomery Works (Interstate)	Electrical products	Electrical Workers (IBEW)	1,550
Merrimack Valley Works (Massachusetts)	Electrical products	Communications Workers	5,250
North Carolina Works	Electrical products	Communications Workers	3,750
Oklahoma City Works (Oklahoma)	Electrical products	Electrical Workers (IBEW)	4,200
Omaha Works (Omaha, Neb.)	Electrical products	Electrical Workers (IBEW)	3,400
Phoenix Works (Arizona)	Primary metals	Communications Workers	1,150
Reading Works (Pennsylvania)	Electrical products	Electrical Workers (IBEW)	1,650
Service Division (Interstate)	Communication	Communications Workers	14,200
Shreveport Works (Shreveport, La.)	Electrical products	Electrical Workers (IBEW)	5,700
Wheeling Pittsburgh Steel Corp., 2 agreements (Ohio and Pennsylvania)	Primary metals	Steelworkers	14,400
Wisconsin Electric Power Co. (Wisconsin)	Utilities	Electrical Workers (IBEW)	1,050
Wisconsin Telephone Co. (Wisconsin)	Communication	Communications Workers	6,500
Youngstown Sheet & Tube Co. (Ohio and Pennsylvania)	Primary metals	Steelworkers	13,000

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

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

Developments in Industrial Relations



AFL-CIO remains committed to 'national accord'

At its spring meeting, the Executive Council of the AFL-CIO contended that President Carter's efforts to counter inflation by cutting the Federal budget had resulted in a "budget that was 'balanced' in dollars, but which was unbalanced in human terms, creating increased joblessness and needless suffering and hardship for millions." The Council asserted that the President's actions amounted to abandonment of some of the principles and commitments of the "national accord" between organized labor and the Administration on stemming inflation. However, the 35-member Council reaffirmed the AFL-CIO's commitment to the accord; the only dissenting vote was cast by Rubber Workers president Peter Bommarito.

Federation President Lane Kirkland said there was no other choice because "we're here to maintain representational relations with the institutions of policy and of power and of government in this country. . . . The game may be rigged, but it's the only game in town."

Turning to the issue of wage negotiations, Kirkland said he would "advise our members to engage in vigorous collective bargaining in representing their members as forcefully as they can." Asked if this meant ignoring the current 7.5- to 9.5-percent annual pay guideline first advocated by himself and the other members of the Pay Advisory Committee established in conjunction with the national accord, Kirkland replied that the voluntary pay program hadn't "repealed" Federal labor laws requiring union leaders to represent their members' best interests. However, he later softened his stance, saying that the pay standard is flexible enough to generally permit union negotiators to negotiate economic gains approaching those that could be won if there was no pay standard.

Master agreement covers Atlantic and Gulf ports

The International Longshoremen's Association and shipping associations along the Atlantic and Gulf Coasts tentatively agreed on the first master contract for all major ports, except New Orleans. In the past, a master agreement was reached for the major North Atlantic Coast ports which set the pattern for agreements

in other Atlantic and Gulf Coast ports.

The agreement, subject to worker ratification after local port agreements have been reached, covers 45,000 workers. The agreement will be effective on the October 1, 1980, termination date of existing contracts. The early settlement on master terms was part of the parties' plan to permit the maximum possible time for settlement of difficult local port issues, such as guaranteed annual income plans, which vary from port to port and guarantee eligible ILA members specified numbers of hours of pay per year.

The new 3-year agreement provided for increases in the basic wage rate of \$1.20 an hour on October 1, 1980 (the previous rate was \$10.40) and on October 1, of 1981 and 1982. The current employer contribution to the pension funds of \$2.25 an hour will increase by 25 cents in each year of the contract and the current contribution to the health and welfare funds of \$1.50 an hour will increase by 17 cents in each of the first 2 contract years and 16 cents in the third year. Also, the contract permits the union to refuse to load and unload ships of ocean carriers which refuse to subscribe to the Job Security Program, which requires ocean carriers to pay uniform assessments, regardless of the port, into a common pool to meet shortfalls in local guaranteed annual income, pension, and health and welfare funds.

During the first bargaining sessions, which began in February, the parties reviewed the legal status of the Rules on Containers—a key contract item—which have been in litigation before the National Labor Relations Board and the Federal courts for nearly 7 years. The rules were developed over the years to preserve specified container cargo handling work for ILA members. In 1977, an adverse ruling on the legality of the container clause precipitated strikes aimed at container-ships. No such problem was expected in 1980 because the Supreme Court is scheduled to review the rules. However, the union can cancel the agreement on 60 days' notice after December 1, 1980, if the Supreme Court strikes down the Rules on Containers.

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

Harvester employees end 172-day strike

One of the longest strikes in the history of the Auto Workers ended when employees of International Harvester Co. ratified a 3-year contract. Throughout the 172-day walkout, which involved 35,000 workers in nine States, the chief issues were demands for changes in overtime work and job transfer provisions the company said were needed to reduce a labor cost imbalance with its competitors in the farm and construction equipment industry.

International Harvester did not gain its demand for the right to require employees to work overtime, but there were some changes in the voluntary approach to overtime. The company will be permitted to establish a pool of volunteers who will work the overtime, if enough regular employees refuse the work. If this pool is not adequate, additional volunteers will be available from a pool of laid-off employees who are not eligible for Supplemental Unemployment Benefits or have exhausted their benefits. The final source will be a pool of retirees who have volunteered to perform overtime work.

The company's demand that employee-initiated job transfers be limited to two a year was shifted from the national bargaining table to the local bargainers for resolution, resulting in some variation in the final provisions. Reportedly, most of the local agreements continue to permit employees to make an unlimited number of upward transfers in a year but limit the number of lateral and downward moves.

According to the union, the economic terms of the national contract meet or exceed the pattern established by the union with the International Harvester's competitors, such as Deere and Co.

Continued cutbacks in steel and auto industries

The depressed state of the steel industry was reflected in U.S. Steel Corp.'s announcement that its management employees will not receive a general salary increase in 1980. In the letter to the employees, distributed after U.S. Steel and other major basic producers settled with the Steelworkers for production and related workers (see *Monthly Labor Review*, June 1980, p. 57), the company indicated that funds had been allocated for merit increases. The management employees are not represented by a union. U.S. Steel, like other steel producers, also was cutting back output and employment to counter the industry's problems, which, it says, stemmed from continuing increases in steel imports and production cuts by steel-using industries, such as construction and automobile manufacturing.

The continuing decline in sales of domestically manu-

factured automobiles and trucks was evident, as steel manufacturers announced some permanent plant closings as well as some short-term closings. About 300,000 workers were affected by layoffs or permanent job losses, and about 40,000 salaried jobs were expected to be eliminated by June. During the last sales slump, in 1974-75, fewer salaried employees were affected and virtually all of them were recalled when the slump ended. The latest announcement of white-collar job terminations came at the end of April, when General Motors Corp. said that it was reducing its worldwide staff of 180,000 salaried workers about 10 percent, on top of some 2,000 jobs it had eliminated earlier. Cuts in salaried jobs at Ford Motor Co. had reportedly totaled more than 6,000 in recent months and, at Chrysler Corp., more than 15,000 white-collar employees have been terminated since last fall.

The manufacturers also were making other moves to reduce labor costs. Ford Motor Co. ceased granting merit increases to its 70,000 salaried workers for at least the balance of 1980 and also ceased contributing to the workers' investment plan for an indefinite period. The 56,000 participants in the investment plan were permitted to invest a portion of their salary in Ford stock, with the company contributing 60 cents for each dollar. For 1979, Ford's contribution totaled \$78 million.

New contract for General Telephone employees

More than 20,000 employees of General Telephone Co. of California are covered by a 3-year contract negotiated by the Communications Workers. It provides for a wage increase of 7 percent, retroactive to the March 5 termination date of the prior contract, and for increases of 2.5 percent in October 1980, 3 percent in March 1981, and 2.5 percent in March 1982. The agreement also establishes a wage escalator clause providing for increases of up to 6 percent in October 1981 and 6.5 percent in October 1982, calculated at the rate of 0.7 percent for each 1-percent rise in the BLS Consumer Price Index for Urban Wage Earners and Clerical Workers for the Los Angeles area during the preceding 12 months.

Benefit improvements included a fifth week of paid vacation after 25 years of service (beginning in 1982), a 12th annual paid holiday, and an increase in the annual pension rate to 1.35 (formerly 1.3 percent) percent of average annual preretirement earnings for each year of credited service.

Union president Glenn E. Watts said that the agreement was within the 7.5- to 9.5-percent guidelines for increases in employee compensation specified in President Carter's anti-inflation program. Watts, an alternate member of the President's Pay Advisory Committee,

earlier had said that the Communications Workers would stay within the pay guidelines in its negotiations with the Bell telephone system companies to replace contracts expiring in August 1980 for more than 500,000 workers. General Telephone Co. of California is not part of the Bell system.

Workers gain access to medical records

Another development in the continuing effort to improve job safety and health occurred when the Department of Labor announced a new rule giving employees access to their on-the-job medical records. Effective August 21, employers must furnish medical records within 15 days after an employee requests them. The only information that can be withheld is that regarding a terminal illness or mental problems; such information will be furnished to a person chosen by the employee, who will decide if it is in the employee's best interest to see it.

Employers are also required to furnish medical records to unions representing the workers, if the workers give their consent. However, OSHA investigators can obtain the records without the prior consent of the employees. Another provision of the rule requires that medical records be kept for up to 30 years after an employee stops working.

OSHA officials indicated that the new rule will not require additional recordkeeping by employers. Eula Bingham, Assistant Secretary of Labor for Occupational Safety and Health, said that the regulation fulfills a basic right of workers—the right to know “what they are working with and its effect on them,” vital information which previously has been “locked away in employers’ files.”

Jewelry Workers to merge with Service Workers

Delegates to the Jewelry Workers triennial convention voted to merge their 10,000-member union into the Service Employees union, which currently has about 625,000 members. Jewelry Workers President Leon Sverdlove said that the move will help in efforts to organize unrepresented workers in the industry. Under the merger, Jewelry Workers locals will retain their identity in a new jewelry division of the Service Employees union that will be headed by Sverdlove, who will also become a member of the Service Employees executive board.

In welcoming the Jewelry Workers, Service Employees President George Hardy assured them that there would be no change in the basic structure of their union, that his union had added 50,000 members in the past 10 years through mergers and affiliations and the incoming groups have been strengthened while uphold-

ing their autonomy and contracts.

Pattern-setting contract for Las Vegas hotels

More than 12,000 employees of resort hotels on “The Strip” in Las Vegas were affected by a 4-year settlement between the Nevada Resort Association and the Hotel and Restaurant Employees Union. The accord also was expected to influence settlements for a similar number of employees the union represents at other hotels in the city.

Skilled workers, who previously earned about \$55 a shift, received a 75-cent-an-hour wage increase, retroactive to April 2, 70 cents in the second year, 60 cents in the third, and 55 cents in the fourth year. Semi-skilled employees, who earned about \$40 a shift, received increases of 60, 50, 40, and 40 cents an hour on the corresponding dates. Tipped employees, who are paid about \$25 a shift by the hotels, received 40, 35, 35 and 30 cents increases. In addition, their guaranteed tip was increased to 16 percent from 15 percent, in the first contract year and to 17 percent in the second year.

Other wage provisions included a requirement that bell captains either have at least two of the three concessions they formerly operated returned to them or be paid an additional \$30 a shift. The concessions are for show reservations, tours, and car rentals.

The association agreed to permit the international union to take over as the administrative agency for the health and welfare fund, which the union claimed could reduce operating costs and, thus, permit improved benefits.

Other changes included a 5-cent-an-hour increase (to 45 cents) in the employers’ payment into the pension fund; a new provision permitting employees of either sex to take a leave of absence of 90 days to 1 year to rear an infant child; extension of sickness and accident benefits to cover childbearing; and a ban on using lie detectors for screening job applicants, except those who will be bonded.

Kansas City bakery workers get new contract

The Bakery, Confectionery and Tobacco Workers negotiated 2-year contracts with four Kansas City bakeries that the union said would set a pattern for 25,000 other bakery employees in eight midwestern States.

The accords provided for a 75-cent-an-hour wage increase in the first year, 70 cents in the second, and 3 cents to be used for special wage adjustments or benefit improvements.

Other provisions included accelerated progression to top pay rates for new employees; increased employer pension funding to permit an increase in the normal

pension to \$550 a month; a 2-year reduction in the service required for 4 weeks' vacation; and an increased employer contribution to maintain the level of health benefits for pensioners.

The four companies involved were ITT Continental Baking Co., Campbell-Taggart, Inc., Interstate Brands, and American Bakeries Co.

GPO female bookbinders awarded back pay

Federal District Judge Charles R. Richey awarded an estimated \$6 million in back pay and \$10 million in increased future earnings to 324 female bindery workers at the Government Printing Office to settle a class action job discrimination suit initiated in 1974. Richey, who had found the Federal facility guilty of the job discrimination in October 1979, held that 28 of the women had been paid only about 70 percent of the amount received by male bookbinders, despite the fact that they performed essentially the same operations. An attorney for the women said that they earned about \$15,000 a year, compared with \$25,000 for men. The women will receive the difference between the amounts for each year back to 1971.

The remaining 296 women will share an estimated \$3 million that they would have earned had they not been denied an equal opportunity to be promoted to bookbinders.

Richey also awarded so-called "forward pay" to compensate the women for the continuing inequities in salaries, pensions, and other benefits that resulted from the unfair job policies. This pay will continue until 50 percent of all bookbinders positions are filled by women. Currently, only one of GPO's 106 bookbinders is a woman.

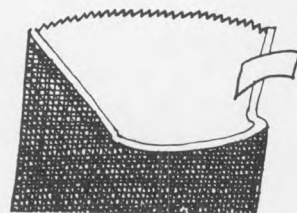
Residency requirement struck down

New York City's efforts to require its employees to live in the city suffered a blow when the State's highest court struck down the residency ordinance the city had enacted in 1978. The Court of Appeals ruling immediately applied only to the uniformed employees represented by the unions that had initiated the suit but city officials were studying the possibility that the principle might extend to nonuniformed employees. There was no immediate impact on the city's employees because the city had agreed not to enforce the ordinance pending the outcome of the court tests.

In a unanimous ruling, the court held, "While the structure and control of the municipal service departments in issue here may be considered of local concern within the meaning of municipal home rule, the residence of their members, unrelated to job performance or departmental organization, is a matter of statewide concern not subject to municipal home rule." More specifically, the court said that the ordinance was inconsistent with parts of the State's Public Officers Law, which prohibits residency requirements for firefighters and corrections officers in cities of a million or more population, of police officers in departments of 200 officers or more, and sanitation workers in cities of any size.

Mayor Edward Koch indicated that he would ask the State Legislature to pass a law allowing such a local requirement. The city had unsuccessfully sought such a State law a number of times before enacting the residency ordinance. No other city in New York State has a residency law. Elsewhere in the Nation, residency requirements have been adopted by a number of cities, including Houston, San Francisco, Chicago, and by Washington, D.C. □

Book Reviews



Nice protection if you can get it

Facing Mechanization: The West Coast Longshore Plan.
By Lincoln Fairley. Los Angeles, University of California, Institute of Industrial Relations, 1979. 447 pp. (Monograph Series, 23.) \$8.50, paper.

Twenty years have passed since the much-heralded mechanization and modernization agreement was negotiated by the Pacific Maritime Association and the independent International Longshoremen's and Warehousemen's Union covering Pacific Coast longshore operations. This was a major cynosure coming as it did in a climate in which work rules were active issues also in east coast longshoring, in railroads, meatpacking, and in steel among other leading bargaining situations. The personalities and backgrounds of the leading protagonists and the history of west coast longshore labor relations added to the attention given to the maritime agreement. There was Harry Bridges, long-time president of the ILWU, with his left-wing background, and his leadership of the union through the initial period of virtual internecine warfare with stevedores over work rules, which culminated in what was touted as the "new look" in the labor-management relationship. It remained for Paul St. Sure, negotiating for almost a decade on behalf of the Pacific Maritime Association, with Bridges, to turn the new look from a standoff relationship, to one which is regarded as innovative and pattern setting.

It is the long, tortuous, and delicate foundation laying for the M and M agreement, together with the metamorphoses of the agreement, that Lincoln Fairley treats in this study. That it is an admirable narrative analysis is due to Fairley's long service, from 1946 to 1967, as research director of the International Longshoremen's and Warehousemen's Union; his analytical abilities and background; and his subsequent service as an area arbitrator under the agreement by appointment of both the association and the union. Fairley had ample association with and understanding of the factors involved in the preparations for and modification of the M and M plan. Fairley does not claim to have been involved in deliberations which took place at the leadership levels, notably involving Bridges and St. Sure directly; rather it is clear that his evaluation is that of an observer.

Fairley takes us through the background and structure of the west coast relationship. Underlying the ability to achieve agreement was the coastwide organization of employers and the International Longshoremen's and Warehousemen's Union as well as the joint control of the longshore labor force through the dispatch halls in each of the ports. The hiring halls assured a balance between labor supply and demand, with relative equality in longshoremen's earnings and equitable labor distribution among ship operators and stevedores, as basic operational features. In the fifties, the prewar legalistic approach to contract enforcement was carefully avoided, and expressed employer dissatisfaction with restrictive work rules in the ports was approached through continuing discussions.

In the union, the periodic coastwide caucuses of delegates representing the union locals played an integral role in the educative process, with full and frank study of the impact of mechanization and of the likely deleterious effect of adhering to the former union policy of refusing to alter work rules. Mutual agreement in 1959 that none of the registered workforce would be laid off made possible the agreement in 1960 for basically a "buy-out" of the restrictive provisions, with reductions in gang size and increased flexibility in worker use. Funds were set up to encourage early retirement and to guarantee 35 hours work or pay per week. The former was effective; the latter was not required and was dropped in 1966. The success of the first contract resulted in renewal with substantial wage increases.

As Fairley points out, it was during the renewal period of the M and M agreement, from 1966 to 1971, that a combination of unanticipated factors led to dissatisfaction. Despite the substantial increase in earnings under the 1966 agreement, these were eroded by the unanticipated rise in living costs from 1968 on. The annual hours worked by the "A" men fell off, with the decline in shipments to Southeast Asia, and the unexpected explosive effect of the container revolution. The work or pay guarantee was restored. An effort to retain some of the lost work opportunities by agreement to have containers loaded at waterfront container freight stations, under jurisdiction of the International Longshoremen's and Warehousemen's Union, proved to be abortive in the face of Teamster jurisdiction and decisions by the National Labor Relations Board.

There is a continuous questing approach throughout Fairley's intensive analysis of this adaptation of the modernization of maritime transport. All of the criticisms leveled against the union acceptance of the change are set out. He cites the great gains made in productivity and labor-cost savings which accrued to shippers, ship operators, and stevedores. The continuing undercurrent of skepticism and actual opposition of secondary union officials and substantial minorities of rank-and-file union members, as expressed in the voting on the agreements, are detailed. Cited are the views of Marxists that the agreement was class collaborationist, betraying the union's apparent left-wing orientation. Cited at several points is the view that the west coast union should have held out for protection of the role of the gang, as had the east coast International Longshoremen's Association. Acceptance of technology, in the view of some critics, has made for alienation in work relationships, through growing routinization of the longshoremen's work, displacement of gangs, and growing "steady" work.

While stress is placed on the contrasting east coast resistance to the manning and work rule concessions, there is insufficient treatment of the contrasting institutional and structural labor-management relations on the two coasts. Rather submerged is explanation of the decentralized bargaining structure on the east coast, the difference in waterfront jurisdiction on the two coasts, and hardly treated at all are the divergent approaches to job security. As this reviewer has pointed out, the International Longshoremen's and Warehousemen's Union apparently did not emphasize the role of the gang because sufficient job security was achieved through the dispatch hall, with equalization of earnings and assurance of employment for registered longshoremen. On the east coast, in the absence of dispatch halls, the regular gangs provided the persistent and basic avenues for job security and earnings. Fairley concludes that institutional differences probably accounted for the apparently divergent policies. ("Longshoremen and the Modernization of Cargo Handling in the United States," *International Labor Review*, March 1973, pp. 272-74.)

Fairley finds the 20-year developments advantageous to the union and its members, although he apparently is unwilling to concede completely that there could not have been a more deliberate and gradual yielding of the work rules. While the registered longshore workforce and man-hours worked have declined by 40 percent since 1960, the longshore hourly rate has increased fourfold with earnings averaging \$26,000 to \$30,000 per year for registered longshoremen. He points out that even the older men tend to welcome the elimination of the former back-breaking work, and enjoy operating the new machines. Even with the work or pay guarantee,

they continue to have the contractual right to work only when they please, and to go hunting and fishing when they want to. The young men in the southern ports, who have not experienced the early issues and battles of the union, are more concerned about wages. Thus, in contrast to the rank-and-file opposition in the thirties to "steady" work for single employees, the younger men are prepared to accept such work now required for the operation of complex and costly machinery. Fairley concludes that: "... though membership has declined, no one has been laid off, earnings have risen, and with a wage guarantee and a good pension plan west coast longshoremen continue to enjoy a unique degree of lifetime security."

In summary, the labor-management adjustments to maritime industry modernization mean that, so long as the volume of cargo handled grows in the United States, the longshoring occupation will continue to be in the forefront of regular and well-paid occupations in sharp contrast to the casual employment offered in this industry hardly 50 years ago.

—JOSEPH P. GOLDBERG

Special Assistant to the Commissioner
Bureau of Labor Statistics

Working women on the rise? Yes and no

The Subtle Revolution: Women At Work. Edited by Ralph E. Smith. Washington, The Urban Institute, 1979. 255 pp. \$7.50, paper.

The rapid growth of the female labor force—and the expectation that this growth will continue to mushroom as we look towards the 1990's—has created the need for a comprehensive analysis of women at work. *The Subtle Revolution*, edited by Ralph E. Smith, appears to be the most ambitious effort so far to provide historical analyses and long-range projections. And because it is the intent of the volume's six authors to make a significant impact on public policy, the ambitiousness of the work is both its strength and its weakness.

Over the past 30 years, 6 out of 10 additions to the workplace have been female and it is estimated one million women will be entering the work force each year in the 1980's. But despite some gains in certain areas, the ratio of women's earnings to men's has actually dropped from about 63 percent in the mid-1950's to below 60 percent in the mid-1960's and 1970's. This alone demonstrates the importance of a volume that analyzes the effects of women's employment on the family structure, the workplace, and the tax and social security systems, and examines the many myths that keep women's pay so far below men's.

For example, studies included in this book indicate clearly that most women work because they have to, al-

though inflation—unfortunately relegated to a lesser role because of the long-range nature of the study—often blurs the line between choice and need. Women's workplace commitment, the authors show, is comparable to men's, although because many women's jobs are dead end and low-paying, women's commitment toward individual jobs may be less. And myths and early studies that indicate damage to marriages or to the children of working women are carefully examined and contradicted.

Also examined closely are what the authors consider the inequities facing the growing army of female second earners from the Federal income tax system and the social security system. Their recommendations are somewhat controversial—measures to ease the marriage tax penalty and earnings-sharing in social security—but they can provide a framework for significant policy debate.

In one major area, however, the authors' analysis and conclusions are likely instead to distort discussion on a fundamental question—the pay gap between men and women and how to narrow it. In her study, Nancy Barrett correctly identifies occupational segregation as the main obstacle to narrowing the pay gap. But her basic conclusion is that the chief way to narrow it is for women to “increase their representation in jobs formerly dominated by men” and to move into “more responsible jobs with good pay.”

This ignores high unemployment in many fields considered “nontraditional” for women and further consigns the jobs held by the majority of women—clerical, service, health—to unimportance. One of the most significant current efforts in relation to women in the workplace is research into comparable worth—analysis of jobs in terms of various factors rather than traditional market value—to determine their worth. Pioneering in these efforts are labor unions that represent women officeworkers, particularly in the public sector. This book contains not one word about upgrading the pay of “women's-type” jobs, and there are only two paragraphs that discuss unions.

Women workers currently constitute 23.5 percent of all union membership, and approximately 17 percent of the female work force is covered by a collective bargaining agreement. This can be a major avenue for upgrading women's pay and other conditions of employment; women in unions make significantly more than nonunion women. Unions such as the American Federation of State, County and Municipal Employees have pioneered comparable worth studies across the Nation. The Amalgamated Clothing Workers of America has instituted child-care centers for employees. A number of unions sponsor training programs to help break down obstacles to promotions many women workers face. By ignoring these developments, the book

obscures a major avenue for improvement of the pay and jobs that are largely held and will continue to be held by women.

However, *The Subtle Revolution* does provide a useful and comprehensive compilation of data and analysis. But because its historical perspective and long-range approach do not take into account a number of current economic trends and situations, some of its conclusions and recommendations should be examined carefully in terms of immediate public policy.

—JUDY BASTON

Public Affairs Coordinator
American Federation of State,
County and Municipal Employees

Economic portrait of China

China's Economy: A Basic Guide. By Christopher Howe.
New York, Basic Books, Inc., 1978. 248 pp., appendix. \$16 cloth; \$4.95, paper.

Recognition of the People's Republic of China last year did for Americans of this generation what Marco Polo did centuries earlier for Europeans—it opened trade, economic exchange, and tourism between the United States and China. It also made Americans increasingly interested in the basic economic facts of one of the largest land masses in the world under a single government and a country with the largest population.

Economic data on the People's Republic of China has been almost nonexistent from 1960 to 1971, and sketchy after 1971. Christopher Howe fills part of this gap by presenting a chronology of events in China, as well as tables and text on the current status of Chinese resources. Among the valuable appendixes are biographical notes on persons frequently referred to in literature on the Chinese economy, Chinese measures and Western equivalents, and how to find out about and keep up with economic developments in China.

The author makes the point that Chinese leaders have had a continuous struggle with problems of food and population. At the international level, China now shares with other developing countries a growing preoccupation with raw material prices, the working of international economic institutions, and the general problems of world economic order.

Howe writes that in 1949 the Chinese economy reflected two fundamental developments: a crisis in the long-term relationship between the growth of population and the growth of the food supply and the beginning of industrialization that started during the First World War. Much of the economic dislocation and lack of investment in China was due to war. From 1927, the Chinese were fighting a civil war and from 1937, they

were fighting the Japanese, according to Howe.

China's development since 1949 has been uneven. The first phase lasted from 1949 to 1952. The Communist Party took control of the monetary, fiscal, and trade systems and implemented a land reform. The latter was a traumatic event which eliminated the political and economic power of the landlords and distributed land and other assets to the rural population.

Howe labels the four phases of development since 1952 as (1) the periods of fastest growth (1952-59); (2) the Great Depression (1959-61); (3) readjustment and the Cultural Revolution (1961-70); and (4) the revival of growth with trade (1970-77).

The First Five-Year Plan (1953-57) raised by about 20 percent the share of the nation's resources to be invested and proposed that these resources be used for the development of heavy industry.

The Plan's impact on agricultural collectivism was dramatic. By March 1956, more than 90 percent of all the Chinese peasants were in cooperatives and by 1957, virtually all were in the 680,000 more sophisticated cooperatives. Thus, a revolution planned to take 15 years was over in little more than 1 year, says Howe.

But the results were not satisfactory. Growth of agriculture was still too slow. Growth of urban employment was slow. Relations with the Soviet Union (upon which industrial assistance depended) were worsening. This crisis led Chairman Mao (who dominated China's political life from the 1930's to his death) to launch the most extraordinary economic adventure the world has ever seen—the Great Leap Forward of 1958. It embodied changes in ownership and organization combined with a radical psychological transformation that would stimulate people to work more intensively, more creatively, more selflessly.

As the Leap went on into 1959, administrative confusion deepened and the consequences of strain, of the misuse of resources, and of sheer human exhaustion became increasingly serious. When the end came, it coincided with the withdrawal of Soviet assistance and a succession of natural disasters.

From 1962 to 1965, China's economic position improved. However, Howe points out that the political situation remained difficult. Mao believed the retreat from the Leap had led to corruption—to selfish, anti-Socialist economic behavior, and to the entrenchment of his enemies in the bureaucracy. By mid-1966, the revival of the economy finally made it possible for Mao to launch a campaign against his enemies. Thus, unlike his Leap, Mao's Cultural Revolution was not launched to remedy economic problems. It was mainly a political struggle.

In the 1970's, claims Howe, the Chinese economy awoke after years of isolation. Chou En-lai, prime minister and a power in economic matters, died in April 1976. Mao died in September 1976, and his death was

followed immediately by signs of a decisive new phase of economic policy. The critics of Chou's program were identified as the "Gang of Four" and included Mao's widow. Howe says that the disgrace of the Gang has been very important because it has been possible to blame them for many of China's economic troubles.

Howe indicates that the 1953 census was the first count in China to approach modern standards of enumeration. It was undertaken because information about the population was needed for preparation of the First Five Year Plan. The Chinese population is a young one, Howe points out. The bulk of it is of working age (15 to 64). The number of trained or educated workers grew very rapidly between the 1950's and the early 1960's.

The basic sectors of the Chinese economic system are producers, consumers, and the government. The "producers" are mainly industrial enterprises, people's communes, and other collectively organized units. The State owns nearly all industrial organizations with significant capital equipment. A collective sector (collective units are owned by their workers) employs over a third of all industrial workers and produces 14 percent of total output. In agriculture, approximately 90 percent of cultivated land and irrigation equipment is collectively owned, mainly by "teams" which often correspond to villages.

China's Economy draws on standard Chinese, Japanese, U.S., and English sources and on documents as well as on firsthand observations and interviews. It is the best up-to-date survey of the Chinese economy now in print with an analysis of agriculture, industry, foreign trade, population, and incomes for the nonspecialist reader.

—MARY ELLEN AYRES
Office of Publications
Bureau of Labor Statistics

Publications received

Agriculture and natural resources

Brown, Michael H., *Laying Waste: The Poisoning of America by Toxic Chemicals*. New York, Pantheon Books, 1980, 351 pp. \$11.95.

Burt, Oscar R., Won W. Koo, Norman J. Dudley, "Optimal Stochastic Control of U.S. Wheat Stocks and Exports," *American Journal of Agricultural Economics*, May 1980, pp. 172-87.

Sant, Roger W., "Coming Markets for Energy Services," *Harvard Business Review*, May-June 1980, beginning on p. 6.

Economic and social statistics

Duncan, Joseph W., "Recent Developments in Reorganization of Statistical Policy," *Statistical Reporter*, April 1980, pp. 157-67.

- Fellegi, Ivan P., "Data, Statistics, Information—Some Issues of the Canadian Statistics Scene," *Statistical Reporter*, April 1980, pp. 168–81.
- Greenhut, John, M. L. Greenhut, Sheng-yung Li, "Spatial Pricing Patterns in the United States," *The Quarterly Journal of Economics*, March 1980, pp. 329–50.
- Konda, Suresh L. and Shelby Stewman, "An Opportunity Labor Demand Model and Markovian Labor Supply Models: Comparative Tests in an Organization," *American Sociological Review*, April 1980, pp. 276–301.
- Kushner, Harvey W. and Gerald De Maio, *Understanding Basic Statistics*. San Francisco, Holden-Day, Inc., 1980, 381 pp. \$12.95.

Economic growth and development

- Castells, Manuel, *The Economic Crisis and American Society*. Princeton, N.J., Princeton University Press, 1980, 285 pp. \$20, cloth; \$7.50, paper.
- McGranahan, David A., "The Spatial Structure of Income Distribution in Rural Regions," *American Sociological Review*, April 1980, pp. 313–24.
- Ratner, Sidney, James H. Soltow, Richard Sylla, *The Evolution of the American Economy: Growth, Welfare, and Decision Making*. New York, Basic Books, Inc., Publishers, 1979, 548 pp. \$18.50.
- Tolbert, Charles, Patrick M. Horan, E. M. Beck, "The Structure of Economic Segmentation: A Dual Economy Approach," *American Journal of Sociology*, March 1980, pp. 1095–1116.

Industrial relations

- Anton, Frank R., *Worker Participation: Prescription for Industrial Change*. Calgary, Alberta, Canada, Detselig Enterprises Limited, 1980, 135 pp., bibliography. \$5.95, paper.
- Bohlander, George W., "Fair Representation: Not Just a Union Problem," *The Personnel Administrator*, March 1980, beginning on p. 36.
- Great Britain, Department of Employment, "Strikers' Occupations: An Analysis," by Stephen Creigh and Peter Makeham, *Employment Gazette*, March 1980, pp. 237–39.
- Kamer, Gregory J., "Employee Participation in Settlement Negotiations and Proceedings Before the OSHRC," *Labor Law Journal*, April 1980, pp. 208–22.
- Marmo, Michael, "Arbitrating Sex Harassment Cases," *The Arbitration Journal*, March 1980, pp. 35–40.
- Marovich, Joseph M., "The Applicability of the Attorney-Witness Rule to Labor Arbitration," *The Arbitration Journal*, March 1980, pp. 41–51.
- Martin, James E., "A Framework for Analyzing Public-Sector Union-Management Relations: An Exploration with Six Cases," *Quarterly Review of Economics and Business*, Spring 1980, pp. 49–62.
- Minarcini, Joanne G., "Illegal Aliens: Employment Restrictions and Responses," *The Personnel Administrator*, March 1980, pp. 71–78.
- Rand, James E., "Creative Problem-Solving Applied to Grievance/Arbitration Procedures," *The Personnel Administrator*, March 1980, pp. 50–52.

Reynaud, Jean-Daniel, "Industrial Relations and Political Systems: Some Reflections on the Crisis in Industrial Relations in Western Europe," *British Journal of Industrial Relations*, March 1980, pp. 1–13.

- Rosen, Gerald E., "Labor Law Reform: Dead or Alive?" *Journal of Urban Law*, University of Detroit, Fall 1979, pp. 1–40.
- Shalev, Michael, "Industrial Relations Theory and the Comparative Study of Industrial Relations and Industrial Conflict," *British Journal of Industrial Relations*, March 1980, pp. 26–43.
- The Rockefeller Foundation, *Bakke, Weber, and Affirmative Action: A Rockefeller Foundation Conference Held July 12–13, 1979*. New York, The Rockefeller Foundation, 1979, 251 pp.

"U.S. Workers and Their Unions, 1959–1979," *The AFL-CIO American Federationist*, March 1980, pp. 5–8.

Wagner, David and Marcia B. Cohen, "Labor's Political Action in the 1930's and 1940's," *Labor Center Review*, Fall-Winter 1980, pp. 8–23.

Westin, Alan F., "What Should Be Done About Employee Privacy?" *The Personnel Administrator*, March 1980, pp. 27–30.

Industry and government organization

- America, Richard F., "How Minority Business Can Build on Its Strength," *Harvard Business Review*, May–June 1980, pp. 116–21.
- American Enterprise Institute for Public Policy Research, *Major Regulatory Initiatives During 1979: The Agencies, the Courts, the Congress*. Washington, 1980, 46 pp. (AEI Special Analysis, 80–2.) \$3.75, paper.
- Holtz, Herman, *The \$100 Billion Market: How to Do Business With the U.S. Government*. New York, AMACOM, A division of American Management Associations, 1980, 272 pp.
- Toffler, Alvin, "The Third Wave: The Corporate Identity Crisis," *Management Review*, May 1980, pp. 8–17.
- "Twenty-Five Years of Change in the Fortune 500," by Linda Snyder Hayes; "The Year There Was No Inflation," by Daniel Seligman; "Veterans Who Make the 500 Run," by Andrew C. Brown, *Fortune*, May 5, 1980, beginning on p. 88.

International economics

- Adkins, Lynn, "Recycling OPEC's Surplus," *Dun's Review*, May 1980, pp. 100–02.
- Burton, David, "Expectations and a Small Open Economy with a Flexible Exchange Rate," *The Canadian Journal of Economics*, February 1980, pp. 1–15.
- Driskill, Robert and Stephen McCafferty, "Speculation, Rational Expectations, and Stability of the Foreign Exchange Market," *Journal of International Economics*, February 1980, pp. 91–102.
- Fapohunda, Olanrewaju J., "Urbanisation and Employment in Developing Countries: The Role of the Informal Sector," *Labor and Society*, Quarterly Journal of The Institute for Labour Studies, January 1980, pp. 31–48.
- Gladstone, Alan, "Trade Unions, Growth and Development," *Labor and Society*, Quarterly Journal of the International

- al Institute for Labour Studies, January 1980, pp. 49-68.
- Great Britain, National Institute of Economic and Social Research, "The Economic Situation," *National Institute Economic Review*, February 1980, pp. 8-77.
- Jabara, Cathy L. and Robert L. Thompson, "Agricultural Comparative Advantage Under International Price Uncertainty: The Case of Senegal," *American Journal of Agricultural Economics*, May 1980, pp. 188-98.
- Koizumi, Tetsunori and Kenneth J. Kopecky, "Foreign Direct Investment, Technology Transfer and Domestic Employment Effects," *Journal of International Economics*, February 1980, pp. 1-20.
- Soffan, Linda U., "The Role of Women in the Economy of the United Arab Emirates," *Labour and Society*, Quarterly Journal of the International Institute for Labour Studies, January 1980, pp. 3-17.
- "Special Report, World Economic Outlook: Pt. I, Synchronous Slump in the West; Pt. II, Socialist Nations Have Economic Troubles, Too," *Business Week*, beginning on p. 70.
- "The World of Islam," *Current History*, April 1980, pp. 145-86.
- Thursby, Marie C., "The Resource Reallocation Costs of Fixed and Flexible Exchange Rates," *Journal of International Economics*, February 1980, pp. 79-90.
- U.S. Bureau of International Labor Affairs, *Country Labor Profile: Canada* (by Franz Groemping, 8 pp.); *Kenya* (by Ronald A. Watts, 8 pp.); *Malaysia* (by Donald S. Harris, 6 pp.); *Nigeria* (by Donald S. Harris and Badru I. O. Rabi, 8 pp.), Washington, U.S. Department of Labor, Bureau of International Labor Affairs, 1980, 60 cents each, Superintendent of Documents, Washington 20402.
- *The World's Exploited Children: Growing Up Sadly*. By William James Knight. Washington, U.S. Department of Labor, Bureau of International Labor Affairs, 1980, 36 pp. (Monograph, 4.) Stock No. 029-000-00395-5. \$2.50, Superintendent of Documents, Washington 20402.
- Labor force**
- Berman, Eleanor, *Re-entering: Successful Back-to-Work Strategies for Women Seeking a Fresh Start*. New York, Crown Publishers, Inc., 1980, 179 pp. \$8.95.
- Carliner, Geoffrey, Christopher Robinson, Nigel Tomes, "Female Labour Supply and Fertility in Canada," *The Canadian Journal of Economics*, February 1980, pp. 46-64.
- Coelho, Richard J., "A Severe Employment Handicap: A Criminal Record," *Journal of Employment Counseling*, March 1980, pp. 75-80.
- Fogel, Walter, ed., "Immigration Issues in an Era of Unsanctioned Migration: A Symposium," *Industrial and Labor Relations Review*, April 1980, pp. 295-354.
- Freeman, Richard B. and David A. Wise, *Youth Unemployment: NBER Summary Report*. Cambridge, Mass., National Bureau of Economic Research, Inc., 1980, 24 pp.
- Great Britain, Department of Employment, "The Anatomy of Youth Unemployment," by Peter Makeham, *Employment Gazette*, March 1980, pp. 234-36.
- Greenberg, Edward S., "Participation in Industrial Decision Making and Work Satisfaction: The Case of Producer Cooperatives," *Social Science Quarterly*, March 1980, pp. 551-69.
- Jacobson, Carolyn J., "New Challenges for Women Workers," *The AFL-CIO American Federationist*, April 1980, pp. 1-8.
- James, Dilmus D., James H. Street, Allen D. Jedlicka, "Issues in Indigenous Research and Development in Third World Countries," *Social Science Quarterly*, March 1980, pp. 588-603.
- Presser, Harriet B. and Wendy Baldwin, "Child Care as a Constraint on Employment: Prevalence, Correlates, and Bearing on the Work and Fertility Nexus," *American Journal of Sociology*, March 1980, pp. 1202-13.
- Sandell, Steven H., "Job Search by Unemployed Women: Determinants of the Asking Wage," *Industrial and Labor Relations Review*, April 1980, pp. 368-78.
- Scharf, Lois, *To Work and to Wed: Female Employment, Feminism, and the Great Depression*. Westport, Conn., Greenwood Press, 1980, 240 pp. (Contributions in Women's Studies, 15.) \$18.95.
- U.S. Bureau of Labor Statistics, *Measuring Labor Force Movements: A New Approach*. By Alan Eck. Washington, 1980, 24 pp. (Report 581.)
- Warner, John T., J. Carl Poindexter, Jr., Robert M. Fearn, "Employer-Employee Interaction and the Duration of Unemployment," *The Quarterly Journal of Economics*, March 1980, pp. 211-33.
- Management and organization theory**
- Baskin, Otis W. and Craig E. Arnoff, *Interpersonal Communication in Organizations*. Santa Monica, Calif., Goodyear Publishing Co., Inc., 1980, 173 pp.
- Dailey, Charles A. and Ann M. Madsen, *How to Evaluate People in Business: The Track-Record Method of Making Correct Judgments*. New York, McGraw-Hill Book Co., 1980, 225 pp., bibliography. \$12.95.
- Gardner, James E., *Training the New Supervisor*. New York, AMACOM, A division of American Management Associations, 1980, 192 pp. \$14.95.
- Griffith, Albert R., "Career Development: What Organizations Are Doing About It," *Personnel*, March-April 1980, pp. 63-69.
- Hunt, Bridgford, "Managers of Change: Why They Are in Demand," *S.A.M. Advanced Management Journal*, Winter 1980, pp. 40-44.
- Jackson, Lauren Hite and Mark C. Mindell, "Motivating the New Breed," *Personnel*, March-April 1980, pp. 53-61.
- Jain, Hem C., "Worker Participation: Lessons from the European Experience," *Management Review*, May 1980, pp. 46-52.
- Koehn, Hank, "Conference Report: Work, Aging and Retirement," *Personnel Journal*, May 1980, pp. 359-62.
- Koontz, Harold, "The Management Theory Jungle Revisited," *Academy of Management Review*, April 1980, pp. 175-87.
- Kuzmits, Frank E., "How Good Is Your Absenteeism Control System?" *S.A.M. Advanced Management Journal*, Winter 1980, pp. 4-15.

- Larson, Steven H., "The Behavioral Side of Productive Meetings," *Personnel Journal*, April 1980, pp. 292-95.
- Mode, V. Alan, "System Dynamics: A Tool for Management," *Management Review*, May 1980, pp. 18-22.
- Munson, Lawrence S., "Performance Standards: Do Training Directors Practice What They Teach?" *Personnel Journal*, May 1980, pp. 365-67.
- Nieva, Veronica F. and Barbara A. Gutek, "Sex Effects on Evaluation," *Academy of Management Review*, April 1980, pp. 267-76.
- Osgood, William R., *Basics of Successful Business Planning*. New York, AMACOM, A division of American Management Associations, 1980, 252 pp. \$21.95.
- Pfeffer, Jeffrey and John Lawler, "Effects of Job Alternatives, Extrinsic Rewards, and Behavioral Commitment on Attitude toward the Organization: A Field Test of the Insufficient Justification Paradigm," *Administrative Science Quarterly*, March 1980, pp. 38-56.
- Potter, Beverly A., *Turning Around: The Behavioral Approach to Managing People*. New York, AMACOM, A division of American Management Associations, 1980, 266 pp. \$15.95.
- Poza, Ernesto J. and M. Lynn Markus, "Success Story: The Team Approach to Work Restructuring," *Organizational Dynamics*, Winter 1980, pp. 2-25.
- Ranson, Stewart, Bob Hinings, Royston Greenwood, "The Structuring of Organizational Structures," *Administrative Science Quarterly*, March 1980, pp. 1-17.
- Rostain, Hana, Peter Allan, Stephen Rosenberg, "New York City's Approach to Problem-Employee Counseling," *Personnel Journal*, April 1980, beginning on p. 305.
- Runcie, John F., "By Days I Make the Cars," *Harvard Business Review*, May-June 1980, pp. 106-15.
- Sassman, Thomas C., "Postretirement Increase Plans: Why You Need Them and How to Pick the Right One," *Personnel Journal*, April 1980, pp. 285-91.
- Sheldon, Alan, "Organizational Paradigms: A Theory of Organizational Change," *Organizational Dynamics*, Winter 1980, pp. 61-80.
- Siegel, Irving H., *Company Productivity: Measurement for Improvement*. Kalamazoo, Mich., The W. E. Upjohn Institute for Employment Research, 1980, 88 pp. \$3.50, paper.
- Stockard, James G., *Rethinking People Management: A New Look at the Human Resources Function*. New York, AMACOM, A division of American Management Associations, 1980, 225 pp. \$14.95.
- Sundstrom, Eric, Robert E. Burt, Douglas Kamp, "Privacy at Work: Architectural Correlates of Job Satisfaction and Job Performance," *Academy of Management Journal*, March 1980, pp. 101-17.
- Teel, Kenneth S., "Performance Appraisal: Current Trends, Persistent Progress," *Personnel Journal*, April 1980, beginning on p. 296.
- Thomas, William C., "A Career Development Program That Works," *Management Review*, May 1980, pp. 38-40.
- University of Chicago, *Annual Report, 1979*. Chicago, University of Chicago, Human Resources Center, 1980, 20 pp.
- Unni, V. K., "Action Learning: On-the-Job Training for the Top Manager of the Future," *S.A.M. Advanced Management Journal*, Winter 1980, pp. 28-34.
- Weed, Stanley E. and Terence R. Mitchell, "The Role of Environmental and Behavioral Uncertainty as a Mediator of Situation-Performance Relationships," *Academy of Management Journal*, March 1980, pp. 38-60.
- Wolf, William B., ed., *Top Management of the Personnel Function: Current Issues and Practices*. Ithaca, N.Y., Cornell University, New York State School of Industrial and Labor Relations, 1980, 76 pp. \$8.95, cloth; \$5.95, paper.
- Zeldman, Maurice I., "How Management Can Develop and Sustain a Creative Environment," *S.A.M. Advanced Management Journal*, Winter 1980, pp. 23-27.

Monetary and fiscal policy

- Ballentine, J. Gregory and Charles E. McLure, Jr., "Taxation and Corporate Financial Policy," *The Quarterly Journal of Economics*, March 1980, pp. 351-72.
- Great Britain, National Institute of Economic and Social Research, "Some Issues of Monetary Policy," by David Savage, *National Institute Economic Review*, February 1980, pp. 78-85.
- McLure, Charles E., Jr., *Must Corporate Income Be Taxed Twice?* Washington, The Brookings Institution, 1979, 262 pp. \$11.95, cloth; \$4.95, paper.
- Tsiang, S. C., "Keynes's 'Finance' Demand for Liquidity, Robertson's Loanable Funds Theory, and Friedman's Monetarism," *The Quarterly Journal of Economics*, May 1980, pp. 467-91.

Prices and living conditions

- Foss, Murray, "Measuring the Rate of Inflation," *The AEI Economist*, April 1980, pp. 4-8.
- Philips, Louis, "Intertemporal Price Discrimination and Sticky Prices," *The Quarterly Journal of Economics*, May 1980, pp. 525-42.
- Rosen, Gerald R., "The CPI Controversy," *Dun's Review*, May 1980, beginning on p. 54.
- U.S. Bureau of Labor Statistics, *CPI Issues*. By Janet L. Norwood. Washington, 1980, 12 pp. (Report 593.)

Productivity and technological change

- Hatry, Harry P. and others, *Efficiency Measurement for Local Government Services—Some Initial Suggestions*. Washington, The Urban Institute, 1979, 204 pp. (URI, 27700.) \$6.50.
- Kendrick, John W. and Elliot S. Grossman, *Productivity in the United States: Trends and Cycles*. Baltimore, The Johns Hopkins University Press, 1980, 172 pp., bibliography. \$14.95.
- Rosenberg, Richard D. and Eliezer Rosenstein, "Participation and Productivity: An Empirical Study," *Industrial and Labor Relations Review*, April 1980, pp. 355-67.

Social institutions and social change

- Sandmaier, Marian, *The Invisible Alcoholics: Women and Alcohol Abuse in America*. New York, McGraw-Hill Book Co., 1980, 298 pp. \$12.95.
- Shields, Dorothy, "The American Family: Children in Trou-

ble," *The AFL-CIO American Federationist*, April 1980, pp. 15-18.

"The American Family: Labor's View," *The AFL-CIO American Federationist*, April 1980, pp. 9-14.

The Canadian Journey: Rivers of Memory, River of Dreams. Montreal, Quebec, Canada, The Seagram Co., Ltd., 1980, 34 pp.

Williams, James D., ed., *The State of Black America 1980*. New York, National Urban League, Inc., 1980, 279 pp. \$12.50.

Wynne, Edward A., "Youth Attitudes: Some Disturbing Trends," *The AFL-CIO American Federationist*, April 1980, pp. 19-22.

Wages and compensation

Bosworth, D. L. and P. J. Dawkins, "Compensation for Workers' Disutility: Time of Day, Length of Shift and Other Features of Work Patterns," *Scottish Journal of Political Economy*, February 1980, pp. 80-96.

Parsley, C. J., "Labor Union Effects on Wage Gains: A Survey of Recent Literature," *Journal of Economic Literature*, March 1980, pp. 1-31.

Scarth, William M. and Anthony Myatt, "The Real Wage-Employment Relationship," *The Economic Journal*, March 1980, pp. 85-94.

U.S. Bureau of Labor Statistics, *Wage Chronology: Dan River Inc., and the Textile Workers (UTWA), 1943-79*. Washington, 1980, 14 pp. (Bulletin 2048.) Stock No. 029-001-02439-8. \$1.50, Superintendent of Documents, Washington 20402.

— *Wage Differences Among Large City Governments and Comparisons with Industry and Federal Pay, 1977-78*. Washington, 1980, 10 pp. (Report 596.)

U.S. Employment and Training Administration, *Financing America's Unemployment Compensation Program*. (Prepared by Donald L. Diefenbach.) Washington, U.S. Department of Labor, Employment and Training Administration, 1979, 115 pp. (Unemployment Insurance Technical Staff Paper 4.)

Welfare programs and social insurance

Krogman, Robert, "Help for Small Pension-Plan Sponsors," *Management Review*, March 1980, pp. 25-28.

Leman, Christopher, *The Collapse of Welfare Reform: Political Institutions, Policy, and the Poor in Canada and the United States*. Cambridge, The Massachusetts Institute of Technology, 1980, 292 pp. \$19.95, The MIT Press, Cambridge, Mass.

Macarov, David, *Work and Welfare: The Unholy Alliance*. Beverly Hills, Calif., Sage Publications, Inc., 1980, 232 pp. (Sage Library of Social Research, Vol. 99.) \$18, cloth; \$8.95, paper.

Munnell, Alicia H. and Ann M. Connolly, "Financing Public

Pensions," *New England Economic Review*, Federal Reserve Bank of Boston, January-February 1980, pp. 30-44.

van den Haag, Ernest, "Realistic Steps for 'Reforming' Welfare," *The Journal/The Institute for Socioeconomic Studies*, Winter 1979, pp. 73-79.

Worker training and development

Burns, John L., "Benefits of Training the Hard-to-Employ," *Harvard Business Review*, May-June 1980, pp. 141-51.

Hughes, James J. and Ian Brinkley, "The Measurement of Secondary Labour Market Effects Associated with Government Training," *Scottish Journal of Political Economy*, February 1980, pp. 63-79.

U.S. Bureau of Labor Statistics, *Exploring Careers*. Washington, 1979, 547 pp. (Bulletin 20001.) \$10, Superintendent of Documents, Washington 20402.

— *Occupational Employment in Manufacturing Industries, 1977*. Washington, 1980, 91 pp. (Bulletin 2057.) Stock No. 029-001-02451-7. \$4, Superintendent of Documents, Washington 20402.

U.S. Employment and Training Administration, *A Guide for Communities Facing Major Layoffs or Plant Shutdowns*. Washington, U.S. Department of Labor, Employment and Training Administration, 1980, 32 pp. Stock No. 029-000-00391-2. \$2, Superintendent of Documents, Washington 20402.

— *Areawide Planning in CETA*. Washington, U.S. Department of Labor, Employment and Training Administration, 1979, 128 pp. (R&D Monograph, 74.) Stock No. 029-000-00388-4. \$4.50, Superintendent of Documents, Washington 20402.

— *Dateline: CETA: A Selection of Programs*, Washington, U.S. Department of Labor, Employment and Training Administration, 1980, 24 pp.

— *The Socioeconomic Status of Households Headed by Women: Results from the National Longitudinal Surveys*. Washington, U.S. Department of Labor, Employment and Training Administration, 1979, 68 pp. (R&D Monograph, 72.) Stock No. 029-000-00390-4. \$3.50, Superintendent of Documents, Washington 20402.

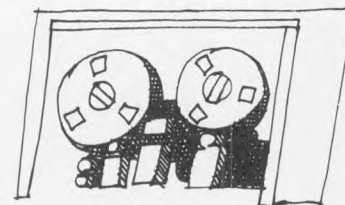
— *Training Information for Policy Guidance*. Washington, U.S. Department of Labor, Employment and Training Administration, 1980, 209 pp., bibliography. (R&D Monograph 76.) \$6, Superintendent of Documents, Washington 20402.

Vandergoot, David and John D. Worrall, eds., *Placement in Rehabilitation: A Career Development Perspective*. Baltimore, Md., University Park Press, 1979, 236 pp.

Verheyen, Leland G., and Louis Olivas, "Attitude Survey Supports Training Needs," *Public Personnel Management*, January-February 1980, pp. 31-35.

Wyant, Dennis R., "Employment Services for Veterans," *Labor Law Journal*, April 1980, pp. 195-99.

Current Labor Statistics



Notes on Current Labor Statistics	70
Schedule of release dates for major BLS statistical series	70
Employment data from household survey. Definitions and notes	71
1. Employment status of noninstitutional population, selected years, 1950-79	71
2. Employment status by sex, age, and race, seasonally adjusted	72
3. Selected employment indicators, seasonally adjusted	73
4. Selected unemployment indicators, seasonally adjusted	74
5. Unemployment rates, by sex and age, seasonally adjusted	75
6. Unemployed persons, by reason for unemployment, seasonally adjusted	75
7. Duration of unemployment, seasonally adjusted	75
Employment, hours, and earnings data from establishment surveys. Definitions and notes	76
8. Employment by industry, 1950-79	77
9. Employment by State	77
10. Employment by industry division and major manufacturing group	78
11. Employment by industry division and major manufacturing group, seasonally adjusted	79
12. Labor turnover rates in manufacturing, 1977 to date	80
13. Labor turnover rates in manufacturing, by major industry group	80
14. Hours and earnings, by industry division, 1949-79	81
15. Weekly hours, by industry division and major manufacturing group	82
16. Weekly hours, by industry division and major manufacturing group, seasonally adjusted	83
17. Hourly earnings, by industry division and major manufacturing group	84
18. Hourly Earnings Index, by industry division, seasonally adjusted	84
19. Weekly earnings, by industry division and major manufacturing group	85
20. Gross and spendable weekly earnings, in current and 1967 dollars, 1960 to date	86
Unemployment insurance data. Definitions and notes	87
21. Unemployment insurance and employment service operations	87
Price data. Definitions and notes	88
22. Consumer Price Index, 1967-79	89
23. Consumer Price Index, U.S. city average, general summary and selected items	89
24. Consumer Price Index, cross classification of region and population size class	95
25. Consumer Price Index, selected areas	96
26. Producer Price Indexes, by stage of processing	97
27. Producer Price Indexes, by commodity groupings	98
28. Producer Price Indexes, for special commodity groupings	100
29. Producer Price Indexes, by durability of product	100
30. Producer Price Indexes for the output of selected SIC industries	100
Productivity data. Definitions and notes	103
31. Indexes of productivity and related data, selected years, 1950-79	103
32. Annual percent change in productivity and related data, 1969-79	104
33. Indexes of productivity, hourly compensation, and unit costs	104
34. Percent change in productivity, hourly compensation, and unit costs	105
Labor-management data. Definitions and notes	106
35. Wage and benefit settlements in major collective bargaining units, 1975 to date	106
36. Effective wage rate adjustments going into effect in major collective bargaining units, 1975 to date	107
37. Work stoppages, 1947 to date	107

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. For a technical discussion of the method used to make seasonal adjustments, see "Appendix A. The BLS Seasonal Factor Method," *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976), pp. 272-78, and *X-11 Variant of the Census Method II Seasonal Adjustment Program*, Technical Paper No. 15 (Bureau of the Census, 1967). Seasonally adjusted labor force data in tables 2-7 were last revised in the February 1980 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, September 1979).

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 was last introduced in the November 1979 issue of the *Review*. 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 *Handbook of Labor Statistics 1978*, Bulletin 2000, 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

Title and frequency (monthly except where indicated)	Release date	Period covered	Release date	Period covered	MLR table number
Employment situation	July 3	June	August 1	July	1-11
Producer Price Index	July 8	June	August 15	July	26-30
Consumer Price Index	July 23	June	August 22	July	22-25
Real earnings	July 23	June	August 22	July	14-20
Major collective bargaining settlements (quarterly)	July 25	1st half	.....	.....	35-36
Productivity and costs (quarterly):					
Nonfarm business and manufacturing	July 28	2nd quarter	.....	.....	31-34
Nonfinancial corporations .....	.....	.....	August 27	2nd quarter	31-34
Work stoppages	July 29	June	August 28	July	37
Labor turnover in manufacturing	July 30	June	August 29	July	12-13

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 65,000 households beginning in January 1980, 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 longterm 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 1979.

1. Employment status of the noninstitutional population, 16 years and over, selected years, 1950-79

[Numbers in thousands]

Year	Total non-institutional population	Total labor force		Civilian labor force					Not in labor force	
		Number	Percent of population	Total	Employed			Unemployed		
					Total	Agriculture	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	79,120	3,387	75,732	4,993	5.9	55,666
1972	145,775	88,991	61.0	86,542	81,702	3,472	78,230	4,840	5.6	56,785
1973	148,263	91,040	61.4	88,714	84,409	3,452	80,957	4,304	4.9	57,222
1974	150,827	93,240	61.8	91,011	83,935	3,492	82,443	5,076	5.6	57,587
1975	153,449	94,793	61.8	92,613	84,783	3,380	81,403	7,830	8.5	58,655
1976	156,048	96,917	62.1	94,773	87,485	3,297	84,188	7,288	7.7	59,130
1977	158,559	99,534	62.8	97,401	90,546	3,244	87,302	6,855	7.0	59,025
1978	161,058	102,537	63.7	100,420	94,373	3,342	91,031	6,047	6.0	58,521
1979	163,620	104,996	64.2	102,908	96,945	3,297	93,648	5,963	5.8	58,623

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

[Numbers in thousands]

Employment status	Annual Average		1979								1980				
	1978	1979	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
TOTAL															
Total noninstitutional population ¹	161,058	163,620	163,260	163,469	163,685	163,891	164,106	164,468	164,682	164,898	165,101	165,298	165,506	165,693	165,886
Total labor force	102,537	104,996	104,476	104,552	105,475	105,218	105,586	105,688	105,744	106,088	106,310	106,346	106,184	106,511	107,230
Civilian noninstitutional population ¹	158,941	161,532	161,182	161,393	161,604	161,801	162,013	162,375	162,589	162,809	163,020	163,211	163,416	163,601	163,799
Civilian labor force	100,420	102,908	102,398	102,476	103,093	103,128	103,494	103,595	103,652	103,999	104,229	104,260	104,094	104,419	105,142
Employed	94,373	96,945	96,495	96,652	97,184	97,004	97,504	97,474	97,608	97,912	97,804	97,953	97,656	97,154	96,988
Agriculture	3,342	3,297	3,246	3,243	3,267	3,315	3,364	3,294	3,385	3,359	3,270	3,326	3,358	3,242	3,379
Nonagricultural industries	91,031	93,648	93,249	93,409	93,917	93,689	94,140	94,180	94,223	94,553	94,534	94,626	94,298	93,912	93,609
Unemployed	6,047	5,963	5,903	5,824	5,909	6,124	5,990	6,121	6,044	6,087	6,425	6,307	6,438	7,265	8,154
Unemployment rate	6.0	5.8	5.8	5.7	5.7	5.9	5.8	5.9	5.8	5.9	6.2	6.0	6.2	7.0	7.8
Not in labor force	58,521	58,623	58,784	58,917	58,511	58,673	58,519	58,780	58,937	58,810	58,791	58,951	59,322	59,182	58,657
Men, 20 years and over															
Civilian noninstitutional population ¹	67,006	68,293	68,123	68,227	68,319	68,417	68,522	68,697	68,804	68,940	69,047	69,140	69,238	69,329	69,428
Civilian labor force	53,464	54,486	54,288	54,370	54,579	54,597	54,735	54,760	54,709	54,781	54,855	55,038	54,996	55,114	55,467
Employed	51,212	52,264	52,158	52,201	52,325	52,311	52,453	52,443	52,374	52,478	52,279	52,531	52,300	51,868	51,796
Agriculture	2,361	2,350	2,301	2,305	2,327	2,375	2,377	2,371	2,438	2,427	2,387	2,435	2,394	2,320	2,384
Nonagricultural industries	48,852	49,913	49,857	49,896	49,998	49,936	50,076	50,072	49,936	50,051	49,892	50,096	49,906	49,548	49,412
Unemployed	2,252	2,223	2,130	2,169	2,254	2,286	2,282	2,317	2,335	2,303	2,577	2,507	2,696	3,246	3,671
Unemployment rate	4.2	4.1	3.9	4.0	4.1	4.2	4.2	4.3	4.2	4.3	4.7	4.6	4.9	5.9	6.6
Not in labor force	13,541	13,807	13,835	13,857	13,740	13,820	13,787	13,937	14,095	14,159	14,192	14,102	14,242	14,215	13,961
Women, 20 years and over															
Civilian noninstitutional population ¹	75,489	76,860	76,670	76,784	76,897	77,006	77,124	77,308	77,426	77,542	77,656	77,766	77,876	77,981	78,090
Civilian labor force	37,416	38,910	38,619	38,653	39,033	39,304	39,239	39,362	39,445	39,659	39,878	39,857	39,751	40,137	40,246
Employed	35,180	36,698	36,411	36,457	36,873	37,000	37,075	37,112	37,248	37,402	37,574	37,604	37,496	37,602	37,576
Agriculture	586	591	577	583	585	600	628	572	612	582	540	567	582	552	616
Nonagricultural industries	34,593	36,107	35,834	35,874	36,288	36,400	36,447	36,540	36,636	36,820	37,034	37,037	36,914	37,051	36,960
Unemployed	2,236	2,213	2,208	2,196	2,160	2,304	2,164	2,250	2,197	2,257	2,304	2,254	2,255	2,534	2,670
Unemployment rate	6.0	5.7	5.7	5.7	5.5	5.9	5.5	5.7	5.6	5.7	5.8	5.7	5.7	6.3	6.6
Not in labor force	38,073	37,949	38,051	38,131	37,864	37,702	37,885	37,946	37,981	37,883	37,778	37,909	38,125	37,844	37,844
Both sexes, 16 - 19 years															
Civilian noninstitutional population ¹	16,447	16,379	16,389	16,381	16,387	16,377	16,367	16,370	16,360	16,326	16,317	16,305	16,302	16,291	16,281
Civilian labor force	9,540	9,512	9,491	9,453	9,481	9,227	9,520	9,473	9,498	9,559	9,497	9,365	9,346	9,168	9,429
Employed	7,981	7,984	7,926	7,994	7,986	7,693	7,976	7,919	7,986	8,032	7,952	7,818	7,859	7,683	7,616
Agriculture	395	356	368	355	355	340	359	351	335	350	344	325	381	370	379
Nonagricultural industries	7,586	7,628	7,558	7,639	7,631	7,353	7,617	7,568	7,651	7,682	7,608	7,493	7,478	7,313	7,237
Unemployed	1,559	1,528	1,565	1,459	1,495	1,534	1,544	1,554	1,512	1,527	1,545	1,547	1,487	1,485	1,813
Unemployment rate	16.3	16.1	16.5	15.4	15.8	16.6	16.2	16.4	15.9	16.0	16.3	16.5	15.9	16.2	19.2
Not in labor force	6,907	6,867	6,898	6,928	6,906	7,150	6,847	6,897	6,862	6,767	6,820	6,940	6,956	7,123	6,852
White															
Civilian noninstitutional population ¹	139,580	141,614	141,331	141,492	141,661	141,822	141,981	142,296	142,461	142,645	142,806	142,951	143,115	143,254	143,403
Civilian labor force	88,456	90,602	90,120	90,215	90,659	90,759	91,082	91,147	91,242	91,579	91,852	91,977	91,821	92,083	92,535
Employed	83,836	86,025	85,632	85,775	86,120	85,976	86,425	86,454	86,571	86,894	86,895	87,081	86,822	86,385	86,148
Unemployed	4,620	4,577	4,488	4,440	4,539	4,783	4,657	4,693	4,671	4,685	4,957	4,896	4,999	5,698	6,386
Unemployment rate	5.2	5.1	5.0	4.9	5.0	5.3	5.1	5.1	5.1	5.1	5.4	5.3	5.4	6.2	6.9
Not in labor force	51,124	51,011	51,313	51,213	51,107	51,161	50,900	51,149	51,219	51,066	50,954	50,975	51,294	51,171	50,868
Black and other															
Civilian noninstitutional population ¹	19,361	19,918	19,850	19,901	19,943	19,979	20,032	20,079	20,128	20,163	20,214	20,261	20,301	20,346	20,395
Civilian labor force	11,964	12,306	12,219	12,260	12,386	12,343	12,404	12,512	12,391	12,432	12,453	12,362	12,266	12,319	12,559
Employed	10,537	10,920	10,816	10,887	11,023	10,982	11,063	11,076	11,044	11,024	10,979	10,937	10,823	10,771	10,813
Unemployed	1,427	1,386	1,403	1,373	1,363	1,361	1,341	1,436	1,347	1,408	1,474	1,424	1,443	1,549	1,746
Unemployment rate	11.9	11.3	11.5	11.2	11.0	11.0	10.8	11.5	10.9	11.3	11.8	11.5	11.8	12.6	13.9
Not in labor force	7,397	7,612	7,674	7,629	7,579	7,639	7,264	7,567	7,737	7,731	7,761	7,899	8,035	8,027	7,836

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

NOTE: The monthly data in this table have been revised to reflect seasonal experience through 1979.

3. Selected employment indicators, seasonally adjusted

[In thousands]

Selected categories	Annual average		1979								1980				
	1978	1979	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
CHARACTERISTIC															
Total employed, 16 years and over	94,373	96,945	96,495	96,652	97,184	97,004	97,504	97,474	97,608	97,912	97,804	97,953	97,656	97,154	96,988
Men	55,491	56,499	56,372	56,477	56,570	56,408	56,714	56,629	56,580	56,734	56,486	56,732	56,601	55,998	55,823
Women	38,882	40,446	40,123	40,175	40,614	40,596	40,790	40,845	41,028	41,178	41,318	41,221	41,051	41,156	41,165
Married men, spouse present	38,688	39,090	39,045	39,079	39,176	39,180	39,198	39,124	38,845	38,924	38,749	38,955	38,745	38,342	38,147
Married women, spouse present	21,881	22,724	22,547	22,664	22,908	22,869	22,937	22,919	22,940	23,027	23,111	23,178	23,202	23,080	23,155
OCCUPATION															
White-collar workers	47,205	49,342	49,136	49,192	49,536	49,663	49,816	49,738	49,912	49,911	50,313	50,448	50,302	50,405	50,606
Professional and technical	14,245	15,050	15,100	15,010	15,057	15,068	15,141	15,057	15,131	15,272	15,337	15,444	15,397	15,542	15,551
Managers and administrators, except farm	10,105	10,516	10,427	10,534	10,612	10,698	10,659	10,639	10,617	10,535	10,608	10,971	10,755	10,745	10,882
Salesworkers	5,951	6,163	6,101	6,103	6,163	6,145	6,181	6,261	6,362	6,346	6,452	6,185	6,113	5,988	6,022
Clerical workers	16,904	17,613	17,508	17,545	17,704	17,752	17,835	17,781	17,802	17,758	17,915	17,848	18,037	18,129	18,152
Blue-collar workers	31,531	32,066	31,904	31,992	32,051	31,849	32,209	32,205	32,110	32,302	31,882	31,754	31,670	31,127	30,681
Craft and kindred workers	12,386	12,880	12,820	12,944	12,876	12,761	12,993	13,001	12,925	13,041	12,814	12,728	12,767	12,773	12,523
Operatives, except transport	10,875	10,909	10,755	10,804	10,884	10,909	10,964	10,967	10,963	11,042	10,678	10,661	10,579	10,408	10,336
Transport equipment operatives	3,541	3,612	3,644	3,605	3,627	3,604	3,617	3,593	3,628	3,635	3,616	3,571	3,558	3,483	3,421
Nonfarm laborers	4,729	4,665	4,685	4,639	4,664	4,575	4,635	4,644	4,594	4,584	4,774	4,795	4,767	4,463	4,402
Service workers	12,839	12,834	12,772	12,805	12,766	12,621	12,859	12,937	12,899	12,970	12,979	13,080	12,981	13,034	12,932
Farmworkers	2,798	2,703	2,628	2,679	2,678	2,707	2,722	2,695	2,718	2,694	2,660	2,764	2,733	2,658	2,745
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture:															
Wage and salary workers	1,419	1,413	1,424	1,423	1,419	1,384	1,399	1,381	1,475	1,451	1,428	1,417	1,449	1,370	1,405
Self-employed workers	1,607	1,580	1,519	1,539	1,558	1,614	1,642	1,602	1,622	1,596	1,554	1,648	1,600	1,591	1,662
Unpaid family workers	316	304	283	291	291	310	325	313	310	310	293	283	300	281	289
Nonagricultural industries:															
Wage and salary workers	84,253	86,540	86,232	86,309	86,454	86,421	86,912	86,982	87,020	87,384	87,578	87,419	87,221	86,741	86,631
Government	15,289	15,369	15,616	15,318	15,393	15,279	15,407	15,423	15,358	15,397	15,414	15,540	15,622	15,668	15,799
Private industries	68,966	71,171	70,616	70,991	71,061	71,142	71,505	71,559	71,662	71,987	72,163	71,879	71,599	71,072	70,832
Private households	1,363	1,240	1,195	1,235	1,219	1,211	1,313	1,261	1,211	1,228	1,132	1,178	1,115	1,123	1,206
Other industries	67,603	69,931	69,421	69,756	69,842	69,931	70,192	70,298	70,451	70,759	71,031	70,702	70,484	69,949	69,625
Self-employed workers	6,305	6,652	6,608	6,629	6,752	6,689	6,731	6,812	6,781	6,737	6,752	6,899	6,825	6,813	6,648
Unpaid family workers	472	455	460	474	519	450	449	430	417	409	379	397	376	363	411
PERSONS AT WORK ¹															
Nonagricultural industries	85,693	88,133	87,785	87,749	88,769	88,855	88,723	88,638	88,617	89,180	89,454	88,985	88,585	87,660	87,680
Full-time schedules	70,543	72,647	72,496	72,243	72,915	73,053	73,159	73,204	72,997	73,137	73,223	73,110	72,749	71,807	71,224
Part time for economic reasons	3,216	3,281	3,283	3,284	3,274	3,298	3,167	3,315	3,392	3,519	3,513	3,406	3,418	3,816	4,349
Usually work full time	1,249	1,325	1,273	1,322	1,334	1,401	1,273	1,354	1,413	1,491	1,549	1,380	1,463	1,709	2,064
Usually work part time	1,967	1,956	2,010	1,962	1,940	1,897	1,894	1,961	1,979	2,028	1,964	2,026	1,955	2,107	2,285
Part time for noneconomic reasons	11,934	12,205	12,006	12,222	12,580	12,504	12,397	12,119	12,228	12,524	12,718	12,469	12,418	12,037	12,106

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

NOTE: The monthly data in this table have been revised to reflect seasonal experience through 1979.

4. Selected unemployment indicators, seasonally adjusted

[Unemployment rates]

Selected categories	Annual average		1979								1980				
	1978	1979	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
CHARACTERISTIC															
Total, 16 years and over	6.0	5.8	5.8	5.7	5.7	5.9	5.8	5.9	5.8	5.9	6.2	6.0	6.2	7.0	7.8
Men, 20 years and over	4.2	4.1	3.9	4.0	4.1	4.2	4.2	4.2	4.3	4.2	4.7	4.6	4.9	5.9	6.6
Women, 20 years and over	6.0	5.7	5.7	5.7	5.5	5.9	5.5	5.7	5.6	5.7	5.8	5.7	5.7	6.3	6.6
Both sexes, 16-19 years	16.3	16.1	16.5	15.4	15.8	16.6	16.2	16.4	15.9	16.0	16.3	16.5	15.9	16.2	19.2
White, total	5.2	5.1	5.0	4.9	5.0	5.3	5.1	5.1	5.1	5.1	5.4	5.3	5.4	6.2	6.9
Men, 20 years and over	3.7	3.6	3.4	3.5	3.6	3.7	3.7	3.7	3.7	3.7	4.1	4.0	4.4	5.3	5.9
Women, 20 years and over	5.2	5.0	5.0	4.9	4.8	5.2	4.8	5.0	4.9	5.0	5.1	5.2	4.9	5.5	5.8
Both sexes, 16-19 years	13.9	13.9	14.2	13.2	13.8	14.8	14.3	14.1	13.9	13.9	14.0	13.8	13.8	14.6	17.4
Black and other, total	11.9	11.3	11.5	11.2	11.0	11.0	10.8	11.5	10.9	11.3	11.8	11.5	11.8	12.6	13.9
Men, 20 years and over	8.6	8.4	8.4	8.1	8.4	8.1	8.0	8.6	8.4	8.6	9.6	9.2	9.3	10.9	12.0
Women, 20 years and over	10.6	10.1	10.0	10.4	10.0	10.3	9.8	10.2	9.5	10.0	10.0	9.0	10.5	11.4	11.9
Both sexes, 16-19 years	36.3	33.5	36.1	33.5	31.5	32.6	32.3	35.1	32.8	34.3	34.6	37.9	33.0	29.8	35.2
Married men, spouse present	2.8	2.7	2.5	2.7	2.8	2.9	2.9	2.9	2.9	2.8	3.4	3.1	3.4	4.1	4.7
Married women, spouse present	5.5	5.1	5.2	5.1	4.9	5.3	4.8	5.2	4.8	5.0	5.2	5.4	5.3	5.7	6.3
Women who head families	8.5	8.3	8.6	9.0	8.1	7.9	7.7	8.4	8.4	8.4	9.2	8.5	8.7	9.3	8.3
Full-time workers	5.5	5.3	5.2	5.2	5.3	5.4	5.3	5.4	5.4	5.4	5.7	5.6	5.8	6.6	7.5
Part-time workers	9.0	8.7	9.3	8.6	8.3	8.8	8.4	8.9	8.3	8.5	8.7	8.9	8.3	8.9	9.3
Unemployed 15 weeks and over	1.4	1.2	1.2	1.1	1.0	1.1	1.1	1.2	1.1	1.2	1.3	1.2	1.3	1.6	1.6
Labor force time lost ¹	6.5	6.3	6.3	6.3	6.4	6.4	6.2	6.4	6.4	6.4	6.7	6.6	6.8	7.5	8.8
OCCUPATION															
White-collar workers	3.5	3.3	3.2	3.4	3.3	3.5	3.3	3.4	3.2	3.3	3.4	3.4	3.3	3.7	3.9
Professional and technical	2.6	2.4	2.1	2.5	2.5	2.5	2.4	2.7	2.4	2.3	2.2	2.3	2.3	2.4	2.7
Managers and administrators, except farm	2.1	2.1	2.2	2.1	2.0	2.3	2.2	2.2	1.9	2.0	1.9	2.2	2.4	2.6	2.7
Salesworkers	4.1	3.9	4.0	4.4	3.5	4.0	3.8	3.8	3.7	3.8	4.4	4.5	4.0	4.7	4.5
Clerical workers	4.9	4.6	4.5	4.6	4.5	4.9	4.5	4.7	4.4	4.6	4.8	4.7	4.5	5.1	5.4
Blue-collar workers	6.9	6.9	6.8	6.6	6.8	7.3	7.1	7.2	7.5	7.2	8.0	7.7	8.0	9.7	11.3
Craft and kindred workers	4.6	4.5	4.2	4.3	4.4	4.7	4.3	4.6	4.9	4.4	4.9	4.8	5.4	6.7	8.1
Operatives, except transport	8.1	8.4	8.2	7.7	8.3	8.9	9.0	9.1	9.0	9.0	9.9	9.2	9.3	11.6	14.0
Transport equipment operatives	5.2	5.4	5.4	5.7	5.1	6.2	6.1	5.6	5.2	5.0	6.9	6.7	6.6	8.9	9.0
Nonfarm laborers	10.7	10.8	11.1	10.6	11.0	11.3	11.0	10.7	12.2	12.2	12.3	12.0	13.0	14.1	15.4
Service workers	7.4	7.1	7.2	7.2	7.1	7.1	6.7	6.8	6.6	6.6	6.9	6.9	7.1	8.0	8.5
Farmworkers	3.8	3.8	3.6	3.2	4.2	3.9	4.1	4.3	4.5	4.3	4.4	3.9	4.0	5.0	4.8
INDUSTRY															
Nonagricultural private wage and salary workers ²	5.9	5.7	5.7	5.6	5.7	6.0	5.8	5.9	5.8	5.8	6.2	6.0	6.2	7.1	8.2
Construction	10.6	10.2	10.0	10.0	10.0	10.1	9.6	9.9	10.2	10.3	10.8	10.5	13.0	15.1	17.5
Manufacturing	5.5	5.5	5.4	5.4	5.7	5.9	6.0	6.0	5.9	5.9	6.7	6.4	6.5	7.9	9.9
Durable goods	4.9	5.0	4.4	4.9	5.4	5.4	5.3	5.5	5.6	5.5	6.7	6.3	6.4	8.3	10.5
Nondurable goods	6.3	6.4	6.9	6.3	6.2	6.8	7.1	6.8	6.3	6.4	6.8	6.7	6.7	7.4	8.8
Transportation and public utilities	3.7	3.7	3.6	3.1	3.8	3.7	4.0	3.8	4.2	4.1	4.4	4.4	3.8	4.6	5.1
Wholesale and retail trade	6.9	6.5	6.4	6.7	6.3	6.5	6.4	6.4	6.5	6.4	6.6	6.4	6.3	7.0	7.6
Finance and service industries	5.1	4.9	4.9	4.7	4.9	5.2	4.7	4.9	4.6	4.7	4.6	4.6	4.9	5.1	5.7
Government workers	3.9	3.7	3.6	3.6	3.6	3.7	3.3	4.0	3.6	3.6	3.8	4.0	4.2	4.4	4.2
Agricultural wage and salary workers	8.8	9.1	9.3	7.8	9.7	9.9	10.0	9.9	10.1	9.4	10.3	9.2	10.2	11.9	11.7

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

² Includes mining, not shown separately.

NOTE: The monthly data in this table have been revised to reflect seasonal experience through 1979.

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

Sex and age	Annual average		1979									1980				
	1978	1979	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	
Total, 16 years and over	6.0	5.8	5.8	5.7	5.7	5.9	5.8	5.9	5.8	5.9	6.2	6.0	6.2	7.0	7.8	
16 to 19 years	16.3	16.1	16.5	15.4	15.8	16.6	16.2	16.4	15.9	16.0	16.3	16.5	15.9	16.2	19.2	
16 to 17 years	19.3	18.1	18.9	17.5	17.3	18.5	16.9	18.4	17.3	18.0	19.0	18.7	17.4	18.7	21.7	
18 to 19 years	14.2	14.6	15.0	14.4	14.5	15.4	15.6	15.0	14.7	14.5	14.0	15.1	14.7	14.4	17.7	
20 to 24 years	9.5	9.0	8.9	8.9	9.1	9.3	9.2	9.6	8.8	9.8	10.1	9.5	9.7	11.4	12.7	
25 years and over	4.0	3.9	3.9	3.9	3.9	4.0	3.9	4.0	3.8	4.2	4.1	4.4	4.4	5.0	5.5	
25 to 54 years	4.2	4.1	4.0	4.1	4.0	4.2	4.1	4.2	4.3	4.1	4.4	4.5	4.7	5.4	5.9	
55 years and over	3.2	3.0	3.1	2.9	3.2	3.1	2.9	3.0	2.7	2.7	3.5	2.8	2.8	3.4	3.6	
Men, 16 years and over	5.2	5.1	5.0	4.9	5.1	5.2	5.2	5.2	5.2	5.2	5.7	5.5	5.7	6.7	7.7	
16 to 19 years	15.7	15.8	16.1	14.5	15.4	16.3	16.1	15.7	15.8	15.6	16.2	15.6	14.8	16.1	19.7	
16 to 17 years	19.2	17.9	18.9	16.8	16.1	18.0	16.7	17.1	17.8	17.9	19.0	18.0	15.9	18.3	22.0	
18 to 19 years	13.2	14.2	14.0	14.0	14.8	15.1	15.3	14.4	14.0	13.6	13.9	14.1	14.0	14.2	17.9	
20 to 24 years	9.1	8.6	8.2	8.3	8.8	8.8	8.8	9.5	8.4	9.4	10.4	9.9	10.4	12.3	13.7	
25 years and over	3.3	3.3	3.1	3.2	3.3	3.4	3.3	3.4	3.5	3.2	3.7	3.6	3.9	4.7	5.3	
25 to 54 years	3.4	3.4	3.2	3.2	3.4	3.5	3.6	3.5	3.8	3.4	3.8	3.8	4.2	5.0	5.7	
55 years and over	3.1	2.9	2.8	3.1	3.3	3.1	2.8	2.8	2.6	2.6	3.5	2.6	2.7	3.4	3.5	
Women, 16 years and over	7.2	6.8	6.9	6.8	6.6	7.0	6.6	6.9	6.6	6.8	6.8	6.8	6.8	7.3	7.8	
16 to 19 years	17.0	16.4	16.9	16.5	16.2	17.0	16.4	17.2	16.1	16.4	16.3	17.6	17.3	16.3	18.7	
16 to 17 years	19.5	18.3	18.8	18.3	18.6	19.0	17.2	19.8	16.7	18.0	19.1	19.5	19.2	19.1	21.4	
18 to 19 years	15.3	15.0	16.0	14.9	14.2	15.7	15.9	15.6	15.5	15.5	14.2	16.2	15.6	14.6	17.5	
20 to 24 years	10.1	9.6	9.7	9.7	9.4	9.8	9.6	9.7	9.3	10.2	9.8	9.1	9.0	10.2	11.6	
25 years and over	5.1	4.8	4.9	4.8	4.7	4.9	4.6	4.9	4.7	4.7	4.9	4.9	5.0	5.5	5.7	
25 to 54 years	5.4	5.2	5.2	5.0	5.0	5.3	5.0	5.2	5.0	5.1	5.2	5.4	5.5	6.0	6.1	
55 years and over	3.3	3.2	3.6	2.8	3.1	3.2	2.9	3.4	2.9	2.9	3.4	3.0	2.9	3.4	3.6	

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

[Numbers in thousands]

Reason for unemployment	1979										1980				
	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May		
NUMBER OF UNEMPLOYED															
Lost last job	2,356	2,449	2,526	2,680	2,632	2,731	2,729	2,728	2,988	2,907	3,047	3,611	4,301	4,301	
On layoff	725	816	797	915	855	929	987	944	1,019	1,031	1,129	1,424	1,944	1,944	
Other job losers	1,631	1,633	1,729	1,765	1,777	1,802	1,742	1,784	1,969	1,876	1,918	2,188	2,357	2,357	
Left last job	940	857	846	875	825	835	845	800	779	813	788	926	992	992	
Reentered labor force	1,767	1,753	1,762	1,788	1,760	1,762	1,698	1,771	1,797	1,784	1,803	1,967	2,015	2,015	
Seeking first job	824	781	726	745	801	804	736	858	811	827	805	743	884	884	
PERCENT DISTRIBUTION															
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Job losers	40.0	41.9	43.1	44.0	43.7	44.5	45.4	44.3	46.9	45.9	47.3	49.8	52.5	52.5	
On layoff	12.3	14.0	13.6	15.0	14.2	15.2	16.4	15.3	16.0	16.3	17.5	19.6	23.7	23.7	
Other job losers	27.7	28.0	29.5	29.0	29.5	29.4	29.0	30.9	29.6	29.8	30.2	30.2	28.8	28.8	
Job leavers	16.0	14.7	14.4	14.4	13.7	13.6	14.1	13.0	12.2	12.8	12.2	12.8	12.1	12.1	
Reentrants	30.0	30.0	30.1	29.4	29.2	28.7	28.3	28.8	28.2	28.2	28.0	27.1	24.6	24.6	
New entrants	14.0	13.4	12.4	12.2	13.3	13.1	12.3	13.9	12.7	13.1	12.5	10.3	10.8	10.8	
UNEMPLOYED AS A PERCENT OF THE CIVILIAN LABOR FORCE															
Job losers	2.3	2.4	2.5	2.6	2.5	2.6	2.6	2.6	2.9	2.8	2.9	3.5	4.1	4.1	
Job leavers .....	.9	.8	.8	.8	.8	.8	.8	.8	.7	.8	.8	.9	.9	.9
Reentrants	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.7	1.7	1.7	1.7	1.9	1.9	1.9	
New entrants .....	.8	.8	.7	.7	.8	.8	.7	.8	.8	.8	.8	.7	.8	.8

7. Duration of unemployment, seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average		1979									1980				
	1978	1979	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	
Less than 5 weeks	2,793	2,869	2,823	2,880	2,820	3,168	2,778	2,955	2,919	2,916	3,184	2,995	2,995	3,309	3,872	
5 to 14 weeks	1,875	1,892	1,919	1,808	1,934	1,738	2,035	1,963	1,869	1,966	1,907	2,081	2,169	2,391	2,697	
15 weeks and over	1,379	1,202	1,212	1,152	1,067	1,185	1,152	1,195	1,191	1,230	1,334	1,286	1,363	1,629	1,722	
15 to 26 weeks	746	684	705	656	615	658	644	678	660	711	795	790	776	953	1,014	
27 weeks and over	633	518	507	496	452	527	508	517	531	519	539	496	587	676	709	
Average (mean) duration, in weeks	11.9	10.8	10.9	10.5	10.1	10.7	10.7	10.5	10.6	10.5	10.5	10.7	11.0	11.3	10.5	

NOTE: The monthly data in these tables have been revised to reflect seasonal experience through 1979.

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 162,000 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 service 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 September 1979 data, published in the November 1979 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 June 1979 and seasonally adjusted data from January 1974 through June 1979) 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 1978-80, see *Employment and Earnings*, March 1980, 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, 1950-79

[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
1950	45,197	901	2,364	15,241	4,034	9,386	2,635	6,751	1,888	5,357	6,026	1,928	4,098
1951	47,819	929	2,637	16,393	4,226	9,742	2,727	7,015	1,956	5,547	6,389	2,302	4,087
1952	48,793	898	2,668	16,632	4,248	10,004	2,812	7,192	2,035	5,699	6,609	2,420	4,188
1953	50,202	866	2,659	17,549	4,290	10,247	2,854	7,393	2,111	5,835	6,645	2,305	4,340
1954	48,990	791	2,646	16,314	4,084	10,235	2,867	7,368	2,200	5,969	6,751	2,188	4,563
1955	50,641	792	2,839	16,882	4,141	10,535	2,926	7,610	2,298	6,240	6,914	2,187	4,727
1956	52,369	822	3,039	17,243	4,244	10,858	3,018	7,840	2,389	6,497	7,278	2,209	5,069
1957	52,853	828	2,962	17,174	4,241	10,886	3,028	7,858	2,438	6,708	7,616	2,217	5,399
1958	51,324	751	2,817	15,945	3,976	10,750	2,980	7,770	2,481	6,765	7,839	2,191	5,648
1959 ¹	53,268	732	3,004	16,675	4,011	11,127	3,082	8,045	2,549	7,087	8,083	2,233	5,850
1960	54,189	712	2,926	16,796	4,004	11,391	3,143	8,248	2,629	7,378	8,353	2,270	6,083
1961	53,999	672	2,859	16,326	3,903	11,337	3,133	8,204	2,688	7,620	8,594	2,279	6,315
1962	55,549	650	2,948	16,853	3,906	11,566	3,198	8,368	2,754	7,982	8,890	2,340	6,550
1963	56,653	635	3,010	16,995	3,903	11,778	3,248	8,530	2,830	8,277	9,225	2,358	6,868
1964	58,283	634	3,097	17,274	3,951	12,160	3,337	8,823	2,911	8,660	9,596	2,348	7,248
1965	60,765	632	3,232	18,062	4,036	12,716	3,466	9,250	2,977	9,036	10,074	2,378	7,696
1966	63,901	627	3,317	19,214	4,158	13,245	3,597	9,648	3,058	9,498	10,784	2,564	8,220
1967	65,803	613	3,248	19,447	4,268	13,606	3,689	9,917	3,185	10,045	11,391	2,719	8,672
1968	67,897	606	3,350	19,781	4,318	14,099	3,779	10,320	3,337	10,567	11,839	2,737	9,102
1969	70,384	619	3,575	20,167	4,442	14,705	3,907	10,798	3,512	11,169	12,195	2,758	9,437
1970	70,880	623	3,588	19,367	4,515	15,040	3,993	11,047	3,645	11,548	12,554	2,731	9,823
1971	71,214	609	3,704	18,623	4,476	15,352	4,001	11,351	3,772	11,797	12,881	2,696	10,185
1972	73,675	628	3,889	19,151	4,541	15,949	4,113	11,836	3,908	12,276	13,334	2,684	10,649
1973	76,790	642	4,097	20,154	4,656	16,607	4,277	12,329	4,046	12,857	13,732	2,663	11,068
1974	78,265	697	4,020	20,077	4,725	16,987	4,433	12,554	4,148	13,441	14,170	2,724	11,446
1975	76,945	752	3,525	18,323	4,542	17,060	4,415	12,645	4,165	13,892	14,686	2,748	11,937
1976	79,382	779	3,576	18,997	4,582	17,755	4,546	13,209	4,271	14,551	14,871	2,733	12,138
1977	82,423	813	3,851	19,682	4,713	18,516	4,708	13,808	4,467	15,303	15,079	2,727	12,352
1978	86,446	851	4,271	20,476	4,927	19,499	4,957	14,542	4,727	16,220	15,476	2,753	12,723
1979	89,482	957	4,644	20,972	5,154	20,137	5,170	14,966	4,963	17,043	15,612	2,773	12,839

¹Data include Alaska and Hawaii beginning in 1959.

9. Employment by State

[Nonagricultural payroll data, in thousands]

State	Apr. 1979	Mar. 1980	Apr. 1980 ^P	State	Apr. 1979	Mar. 1980	Apr. 1980 ^P
Alabama	1,358.2	1,362.8	1,364.2	Montana	277.4	279.9	279.3
Alaska				Nebraska	622.5	624.3	628.5
Arizona	973.0	1,008.4	1,008.7	Nevada	374.5	394.7	396.9
Arkansas	749.8	754.0	754.2	New Hampshire	369.2	379.5	373.8
California	9,541.7	9,788.6	9,804.2	New Jersey	2,994.4	3,014.0	3,030.7
Colorado	1,197.6	1,248.1	1,246.0	New Mexico	455.9	469.7	473.5
Connecticut	1,394.7	1,404.7	1,411.1	New York	7,122.3	7,140.3	7,096.5
Delaware	254.4	256.0	254.1	North Carolina	2,362.0	2,410.2	2,420.6
District of Columbia	612.8	614.0	615.8	North Dakota	236.8	243.1	245.5
Florida	3,365.0	3,548.5	3,533.1	Ohio	4,473.4	4,438.2	4,445.6
Georgia	2,109.3	2,137.9	2,136.8	Oklahoma	1,075.3	1,120.0	1,128.4
Hawaii	393.4	411.3	410.5	Oregon	1,036.7	1,051.9	1,040.6
Idaho	333.1	327.7	325.9	Pennsylvania	4,819.4	4,773.2	4,805.5
Illinois	4,762.5	4,712.3	4,712.5	Rhode Island	396.5	392.5	393.9
Indiana	2,251.7	2,206.5	2,219.3	South Carolina	1,174.7	1,194.4	1,200.7
Iowa	1,130.2	1,124.7	1,131.7	South Dakota	237.3	234.5	236.4
Kansas	946.0	953.3	955.0	Tennessee	1,776.2	1,789.1	1,789.3
Kentucky	1,247.1	1,223.3	1,227.2	Texas	5,543.1	5,742.8	5,754.3
Louisiana	1,490.8	1,520.9	1,525.6	Utah	540.0	562.9	566.6
Maine	409.3	406.9	412.0	Vermont	192.1	201.1	196.0
Maryland				Virginia	2,082.8	2,097.5	2,106.5
Massachusetts	2,589.5	2,634.5	2,665.7	Washington			
Michigan	3,621.1	3,505.2	3,439.1	West Virginia	639.9	629.9	633.4
Minnesota	1,743.3	1,770.0	1,781.8	Wisconsin	1,931.6	1,962.6	1,973.0
Mississippi	834.1	836.6	835.7	Wyoming	193.8	211.3	213.5
Missouri	2,003.0	1,985.2	1,997.5	Virgin Islands	36.0	37.8	37.3

10. Employment by industry division and major manufacturing group

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual average		1979									1980				
	1978	1979	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. P	May P	
TOTAL	86,446	89,482	89,671	90,541	89,618	89,673	90,211	90,678	90,902	91,009	89,285	89,417	89,960	90,295	90,606	
MINING	851	957	944	968	976	986	980	982	984	984	982	986	996	1,007	1,034	
CONSTRUCTION	4,271	4,644	4,662	4,881	4,993	5,048	4,984	4,976	4,879	4,711	4,350	4,261	4,305	4,444	4,615	
MANUFACTURING	20,476	20,972	20,988	21,234	20,965	20,996	21,192	21,094	20,966	20,902	20,699	20,648	20,709	20,448	20,256	
Production workers	14,714	15,010	15,061	15,240	14,946	14,960	15,172	15,082	14,954	14,891	14,674	14,615	14,662	14,398	14,175	
Durable goods	12,246	12,690	12,739	12,877	12,712	12,598	12,805	12,737	12,661	12,649	12,525	12,523	12,569	12,344	12,149	
Production workers	8,786	9,053	9,129	9,223	9,031	8,907	9,116	9,058	8,983	8,971	8,825	8,813	8,850	8,620	8,399	
Lumber and wood products	752.4	758.4	763.8	783.2	776.8	780.0	776.3	771.3	748.9	729.2	709.2	710.6	708.5	671.1	659.1	
Furniture and fixtures	491.1	487.3	483.9	484.2	475.5	483.5	485.3	487.6	488.7	486.9	484.4	480.7	480.7	475.1	461.3	
Stone, clay, and glass products	698.0	710.8	718.6	733.1	727.1	728.2	723.6	721.0	712.9	699.6	680.8	677.5	682.5	679.8	669.4	
Primary metal industries	1,212.7	1,243.9	1,258.6	1,274.3	1,260.7	1,244.5	1,244.3	1,225.1	1,216.7	1,204.4	1,201.6	1,199.4	1,197.9	1,187.7	1,162.0	
Fabricated metal products	1,673.4	1,727.2	1,727.8	1,749.0	1,715.7	1,716.1	1,735.3	1,738.3	1,738.2	1,730.4	1,703.8	1,706.5	1,711.0	1,678.8	1,624.3	
Machinery, except electrical	2,319.2	2,462.5	2,463.6	2,491.2	2,485.1	2,467.1	2,496.4	2,447.2	2,440.9	2,455.8	2,522.5	2,520.8	2,522.9	2,505.2	2,499.0	
Electric and electronic equipment	1,999.5	2,108.7	2,095.2	2,128.2	2,111.7	2,089.5	2,136.1	2,143.7	2,146.3	2,153.1	2,144.5	2,138.3	2,147.4	2,133.9	2,110.9	
Transportation equipment	1,991.7	2,048.3	2,091.8	2,077.9	2,027.7	1,933.2	2,051.0	2,040.9	2,009.7	2,043.4	1,943.6	1,950.4	1,972.1	1,866.9	1,823.0	
Instruments and related products	653.5	690.4	686.5	698.8	692.9	695.3	692.7	695.4	695.9	699.8	698.9	701.2	704.4	704.3	704.2	
Miscellaneous manufacturing	454.0	452.4	448.9	457.4	438.6	460.6	463.8	466.9	462.8	446.4	435.9	437.2	441.4	440.7	435.8	
Nondurable goods	8,230	8,283	8,249	8,357	8,253	8,398	8,387	8,357	8,305	8,253	8,174	8,125	8,140	8,104	8,107	
Production workers	5,928	5,957	5,932	6,017	5,915	6,053	6,056	6,024	5,971	5,920	5,849	5,802	5,812	5,778	5,776	
Food and kindred products	1,721.2	1,716.3	1,669.6	1,716.6	1,737.8	1,810.0	1,814.1	1,766.8	1,725.0	1,695.9	1,650.5	1,634.9	1,632.5	1,615.7	1,633.8	
Tobacco manufactures	69.6	66.2	61.9	62.1	62.1	69.0	72.2	71.9	64.8	66.7	65.1	63.4	61.1	59.9	59.3	
Textile mill products	900.2	891.9	892.5	900.4	875.5	890.4	888.9	889.8	893.9	893.5	887.4	887.9	890.6	887.1	877.1	
Apparel and other textile products	1,332.5	1,313.1	1,327.5	1,333.1	1,278.7	1,308.9	1,309.1	1,317.0	1,306.2	1,292.0	1,284.4	1,305.9	1,317.0	1,304.4	1,301.0	
Paper and allied products	700.9	714.1	712.7	724.6	719.6	723.3	718.5	717.7	715.9	714.0	711.8	710.0	710.7	707.8	702.6	
Printing and publishing	1,193.1	1,242.9	1,234.7	1,243.4	1,245.8	1,245.4	1,246.1	1,254.5	1,265.6	1,272.0	1,269.5	1,274.0	1,275.8	1,273.2	1,270.1	
Chemicals and allied products	1,096.3	1,112.7	1,110.9	1,126.6	1,123.0	1,121.2	1,114.9	1,115.0	1,115.2	1,115.6	1,113.9	1,113.0	1,118.5	1,121.0	1,121.2	
Petroleum and coal products	208.7	213.8	212.9	216.8	218.0	218.3	218.1	218.1	217.2	214.9	213.1	159.1	156.3	168.2	204.9	
Rubber and miscellaneous plastics products	751.9	767.5	777.0	779.4	767.4	765.8	762.0	762.6	757.6	747.5	742.2	738.3	738.7	727.9	696.4	
Leather and leather products	255.6	243.8	249.2	253.7	224.7	245.8	243.1	243.1	243.2	240.7	236.1	238.3	238.8	239.2	240.9	
TRANSPORTATION AND PUBLIC UTILITIES	4,927	5,154	5,125	5,231	5,200	5,210	5,242	5,244	5,255	5,254	5,149	5,142	5,156	5,153	5,182	
WHOLESALE AND RETAIL TRADE	19,499	20,137	20,119	20,222	20,118	20,137	20,260	20,314	20,580	20,932	20,224	20,041	20,112	20,217	20,361	
WHOLESALE TRADE	4,957	5,170	5,146	5,211	5,208	5,211	5,206	5,235	5,251	5,234	5,211	5,221	5,241	5,212	5,217	
RETAIL TRADE	14,542	14,966	14,973	15,011	14,910	14,926	15,054	15,079	15,329	15,698	15,013	14,820	14,871	15,005	15,144	
FINANCE, INSURANCE, AND REAL ESTATE	4,727	4,963	4,936	5,003	5,032	5,053	5,002	5,013	5,029	5,041	5,040	5,051	5,076	5,092	5,131	
SERVICES	16,220	17,043	17,039	17,239	17,314	17,312	17,225	17,292	17,281	17,270	17,111	17,294	17,460	17,596	17,738	
GOVERNMENT	15,476	15,612	15,858	15,763	15,020	14,931	15,326	15,763	15,928	15,915	15,730	15,994	16,146	16,338	16,289	
Federal	2,753	2,773	2,773	2,824	2,838	2,844	2,751	2,756	2,760	2,770	2,763	2,803	2,869	3,103	3,029	
State and local	12,723	12,839	13,085	12,939	12,182	12,087	12,575	13,007	13,168	13,145	12,967	13,191	13,277	13,235	13,260	

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

[Nonagricultural payroll data, in thousands]

Industry division and group	1979								1980				
	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. ^P	May ^P
TOTAL	89,398	89,626	89,713	89,762	89,803	89,982	90,100	90,241	90,652	90,845	90,819	90,508	90,328
MINING	944	949	956	968	973	979	983	991	1,000	1,009	1,011	1,016	1,034
CONSTRUCTION	4,648	4,662	4,688	4,674	4,671	4,694	4,714	4,783	4,893	4,831	4,700	4,591	4,601
MANUFACTURING	21,059	21,063	21,079	20,957	20,949	20,899	20,836	20,881	20,890	20,892	20,889	20,603	20,328
Production workers	15,112	15,096	15,090	14,956	14,957	14,894	14,829	14,865	14,848	14,826	14,815	14,522	14,226
Durable goods	12,739	12,760	12,786	12,714	12,737	12,650	12,587	12,615	12,601	12,655	12,653	12,396	12,153
Production workers	9,119	9,123	9,124	9,044	9,066	8,972	8,908	8,931	8,894	8,926	8,924	8,658	8,393
Lumber and wood products	762	757	753	752	758	760	751	740	737	740	730	682	658
Furniture and fixtures	487	485	488	484	480	482	483	483	484	481	482	477	465
Stone, clay, and glass products	715	715	711	710	708	709	704	706	708	709	703	687	666
Primary metal industries	1,254	1,257	1,256	1,245	1,236	1,226	1,223	1,208	1,208	1,210	1,205	1,189	1,157
Fabricated metal products	1,730	1,737	1,730	1,714	1,716	1,723	1,726	1,725	1,712	1,724	1,723	1,687	1,626
Machinery, except electrical	2,471	2,484	2,500	2,492	2,496	2,455	2,438	2,444	2,512	2,511	2,513	2,503	2,507
Electric and electronic equipment	2,106	2,124	2,131	2,092	2,117	2,125	2,125	2,140	2,149	2,147	2,158	2,149	2,122
Transportation equipment	2,077	2,057	2,073	2,079	2,086	2,025	1,994	2,019	1,938	1,980	1,982	1,869	1,810
Instruments and related products	688	693	694	695	692	696	694	698	700	703	707	706	706
Miscellaneous manufacturing	449	451	450	451	448	449	449	452	453	450	450	447	436
Nondurable goods	8,320	8,303	8,293	8,243	8,212	8,249	8,249	8,266	8,289	8,237	8,236	8,207	8,175
Production workers	5,993	5,973	5,966	5,912	5,891	5,922	5,921	5,934	5,954	5,900	5,891	5,864	5,833
Food and kindred products	1,725	1,720	1,707	1,696	1,691	1,707	1,710	1,715	1,707	1,705	1,701	1,685	1,688
Tobacco manufactures	70	69	68	64	65	65	60	62	64	65	65	66	67
Textile mill products	893	892	892	886	884	887	889	893	891	891	893	889	877
Apparel and other textile products	1,324	1,312	1,324	1,302	1,294	1,299	1,292	1,297	1,309	1,312	1,314	1,306	1,297
Paper and allied products	714	715	718	717	714	715	714	713	718	717	718	714	704
Printing and publishing	1,236	1,242	1,250	1,247	1,245	1,252	1,262	1,263	1,273	1,278	1,278	1,276	1,271
Chemicals and allied products	1,114	1,119	1,116	1,111	1,110	1,113	1,114	1,119	1,123	1,121	1,123	1,126	1,125
Petroleum and coal products	213	212	212	213	215	217	217	217	219	163	160	170	205
Rubber and miscellaneous plastics products	784	775	777	764	751	751	749	745	744	744	744	737	703
Leather and leather products	247	247	229	243	243	243	242	242	240	241	240	238	238
TRANSPORTATION AND PUBLIC UTILITIES	5,130	5,190	5,169	5,194	5,180	5,218	5,229	5,223	5,212	5,210	5,213	5,189	5,187
WHOLESALE AND RETAIL TRADE	20,129	20,116	20,122	20,126	20,169	20,243	20,308	20,254	20,428	20,521	20,499	20,349	20,371
WHOLESALE TRADE	5,156	5,180	5,182	5,185	5,190	5,209	5,235	5,218	5,248	5,274	5,278	5,238	5,227
RETAIL TRADE	14,973	14,936	14,940	14,941	14,979	15,034	15,073	15,036	15,180	15,247	15,221	15,111	15,144
FINANCE, INSURANCE, AND REAL ESTATE	4,936	4,958	4,972	5,003	4,997	5,018	5,039	5,056	5,081	5,092	5,107	5,107	5,131
SERVICES	16,954	17,051	17,092	17,141	17,191	17,257	17,298	17,357	17,442	17,522	17,548	17,578	17,650
GOVERNMENT	15,598	15,637	15,635	15,699	15,673	15,674	15,693	15,696	15,706	15,768	15,852	16,075	16,026
Federal	2,770	2,788	2,785	2,813	2,762	2,770	2,771	2,771	2,791	2,823	2,886	3,112	3,026
State and local	12,828	12,849	12,850	12,886	12,911	12,904	12,922	12,925	12,915	12,945	12,966	12,963	13,000

12. Labor turnover rates in manufacturing, 1977 to date

[Per 100 employees]

Year	Annual average	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Total accessions													
1977	4.0	3.7	3.7	4.0	3.8	4.6	4.9	4.3	5.3	4.6	3.9	3.1	2.4
1978	4.1	3.8	3.2	3.8	4.0	4.7	4.9	4.4	5.4	4.9	4.3	3.3	2.4
1979	3.9	4.0	3.4	3.8	3.9	4.7	4.8	4.3	4.9	4.4	4.1	2.9	2.2
1980	...	3.8	3.3	3.5	P3.1	...	...	...	...	...	...	...	...
New hires													
1977	2.8	2.2	2.1	2.6	2.7	3.5	3.7	3.0	4.0	3.5	3.0	2.2	1.6
1978	3.1	2.5	2.2	2.7	2.9	3.6	3.9	3.3	4.2	3.9	3.5	2.6	1.7
1979	2.9	2.8	2.5	2.8	2.9	3.6	3.8	3.1	3.7	3.4	3.1	2.2	1.5
1980	...	2.4	2.2	2.3	P2.0	...	...	...	...	...	...	...	...
Recalls													
1977	.9	1.2	1.3	1.1	.9	.8	.8	.9	1.0	.8	.6	.6	.6
1978	.7	1.0	.7	.8	.8	.8	.7	.8	.9	.7	.6	.5	.5
1979	.7	.9	.7	.7	.7	.8	.7	.9	.9	.8	.7	.5	.5
1980	...	1.1	.9	.9	P.8	...	...	...	...	...	...	...	...
Total separations													
1977	3.8	3.9	3.4	3.4	3.4	3.5	3.5	4.3	5.1	4.9	3.8	3.4	3.4
1978	3.9	3.6	3.1	3.5	3.6	3.7	3.8	4.1	5.3	4.8	4.1	3.5	3.4
1979	4.0	3.8	3.2	3.6	3.6	3.8	3.9	4.3	5.7	4.7	4.2	3.8	3.5
1980	...	4.1	3.5	3.7	P4.6	...	...	...	...	...	...	...	...
Quits													
1977	1.8	1.4	1.3	1.6	1.7	1.9	1.9	1.9	3.1	2.8	1.9	1.5	1.2
1978	2.1	1.5	1.4	1.8	2.0	2.1	2.2	2.1	3.5	3.1	2.3	1.7	1.3
1979	2.0	1.8	1.6	1.9	2.0	2.1	2.1	2.0	3.3	2.7	2.1	1.6	1.1
1980	...	1.6	1.5	1.6	P1.5	...	...	...	...	...	...	...	...
Layoffs													
1977	1.1	1.7	1.4	1.0	.9	.8	.8	1.5	1.0	1.1	1.1	1.1	1.5
1978	.9	1.2	.9	.9	.8	.7	.7	1.0	.8	.8	.9	1.0	1.4
1979	1.1	1.1	.8	.8	.9	.7	.8	1.4	1.3	1.1	1.2	1.5	1.7
1980	...	1.6	.12	1.3	P2.3	...	...	...	...	...	...	...	...

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			
	Apr. 1979	Mar. 1980	Apr. 1980 ^P	Apr. 1979	Mar. 1980	Apr. 1980 ^P	Apr. 1979	Mar. 1980	Apr. 1980 ^P	Apr. 1979	Mar. 1980	Apr. 1980 ^P	Apr. 1979	Mar. 1980	Apr. 1980 ^P	Apr. 1979	Mar. 1980	Apr. 1980 ^P	
MANUFACTURING																			
Seasonally adjusted	3.9	3.5	3.1	2.9	2.3	2.0	0.7	0.9	0.8	3.6	3.7	4.6	2.0	1.6	1.5	0.9	1.3	2.3	
Durable goods	3.6	3.1	2.6	2.7	2.0	1.7	.6	.8	.7	3.2	3.5	4.7	1.7	1.3	1.2	.7	1.3	2.6	
Lumber and wood products	6.6	4.4	4.1	5.1	2.9	2.3	1.3	1.3	1.6	5.7	6.5	10.0	3.7	2.3	2.5	.9	3.2	6.4	
Furniture and fixtures	5.0	4.0	3.4	4.3	3.2	2.8	.6	.6	.4	5.4	4.5	5.1	3.3	2.5	2.3	.9	.9	1.8	
Stone, clay, and glass products	5.1	3.9	3.6	3.4	2.0	1.8	1.5	1.7	1.6	3.6	3.7	4.5	2.0	1.3	1.3	.7	1.6	2.3	
Primary metal industries	2.6	2.7	2.0	1.9	1.2	.9	.5	1.2	.8	2.2	2.7	3.8	.9	.6	.6	.4	1.2	2.4	
Fabricated metal products	3.9	3.6	3.0	3.0	2.3	1.9	.7	1.0	.9	3.9	4.0	6.0	2.0	1.5	1.5	.9	1.6	3.6	
Machinery, except electrical	2.8	2.5	2.0	2.3	1.8	1.6	.2	.4	.3	2.5	2.6	3.6	1.4	1.1	1.1	.3	.8	1.8	
Electric and electronic equipment	3.1	2.9	2.6	2.4	2.1	1.8	.4	.4	.5	3.0	2.9	3.5	1.5	1.3	1.2	.6	.6	1.4	
Transportation equipment	3.3	3.0	...	2.1	1.4	...	.8	1.2	...	2.9	4.1	...	1.2	.9	...	.9	2.3	...
Instruments and related products	2.8	2.8	2.4	2.4	2.3	2.0	.2	.2	.2	2.4	2.2	3.0	1.4	1.2	1.3	.3	.4	.9	
Miscellaneous manufacturing	5.0	4.6	4.4	3.8	2.9	3.1	1.0	1.4	1.1	4.7	4.8	5.2	2.5	2.0	1.9	1.2	1.8	2.2	
Nondurable goods	4.3	4.0	3.7	3.1	2.8	2.6	1.0	.9	.4	3.9	4.5	2.3	2.0	1.9	1.1	1.2	1.2	1.7	
Food and kindred products	5.9	5.2	5.4	4.0	3.1	3.3	.9	1.8	1.8	5.9	5.2	5.9	2.9	2.2	2.3	2.2	2.1	2.8	
Tobacco manufacturers	2.2	1.8	...	.8	.7	...	1.7	.4	...	3.8	4.8	...	.6	.4	...	2.3	3.2	...
Textile mill products	4.9	4.3	4.0	3.8	3.4	3.2	.7	.6	.5	4.8	4.0	4.8	3.2	2.5	2.7	.6	.5	1.1	
Apparel and other products	5.2	5.4	5.2	3.4	3.9	3.5	.6	1.3	1.5	5.6	5.1	5.6	3.0	3.0	2.8	1.7	1.4	2.0	
Paper and allied products	2.9	2.5	2.2	2.1	1.6	1.4	1.5	.7	.7	2.7	2.8	2.9	1.4	1.0	.9	.6	1.1	1.3	
Printing and publishing	3.3	3.1	2.8	2.8	2.6	2.4	.6	.4	.3	3.3	3.1	3.1	2.0	1.8	1.8	.6	.6	.7	
Chemicals and allied products	1.9	1.7	1.5	1.4	1.3	1.2	.4	.3	.2	1.6	1.5	1.7	.7	.7	.6	.3	.3	.6	
Petroleum and coal products	2.6	2.2	2.6	1.9	1.5	1.8	.4	.6	.8	1.9	2.0	2.8	.8	.8	.7	.5	.6	1.5	
Rubber and miscellaneous plastics products	5.0	4.1	3.1	4.0	2.9	2.1	.7	.9	.7	4.8	4.8	6.7	2.8	2.2	1.9	1.0	1.6	3.6	
Leather and leather products	7.0	7.1	6.5	5.0	4.6	4.8	1.6	2.1	1.3	6.9	6.5	6.7	4.1	3.3	3.6	1.8	2.1	2.0	

14. Hours and earnings, by industry division, 1949-79

[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		
1949	\$50.24	39.4	\$1.275	\$62.33	36.3	\$1.717	\$67.56	37.7	\$1.792	\$53.88	39.1	\$1.378
1950	53.13	39.8	1.335	67.16	37.9	1.772	69.68	37.4	1.863	58.32	40.5	1.440
1951	57.86	39.9	1.45	74.11	38.4	1.93	76.96	38.1	2.02	63.34	40.6	1.56
1952	60.65	39.9	1.52	77.59	38.6	2.01	82.86	38.9	2.13	66.75	40.7	1.64
1953	63.76	39.6	1.61	83.03	38.8	2.14	86.41	37.9	2.28	70.47	40.5	1.74
1954	64.52	39.1	1.65	82.60	38.6	2.14	88.91	37.2	2.39	70.49	39.6	1.78
1955	67.72	39.6	1.71	89.54	40.7	2.20	90.90	37.1	2.45	75.30	40.7	1.85
1956	70.74	39.3	1.80	95.06	40.8	2.33	96.38	37.5	2.57	78.78	40.4	1.95
1957	73.33	38.8	1.89	98.25	40.1	2.45	100.27	37.0	2.71	81.19	39.8	2.04
1958	75.08	38.5	1.95	96.08	38.9	2.47	103.78	36.8	2.82	82.32	39.2	2.10
1959 ¹	78.78	39.0	2.02	103.68	40.5	2.56	108.41	37.0	2.93	88.26	40.3	2.19
1960	80.67	38.6	2.09	105.04	40.4	2.60	112.67	36.7	3.07	89.72	39.7	2.26
1961	82.60	38.6	2.14	106.92	40.5	2.64	118.08	36.9	3.20	92.34	39.8	2.32
1962	85.91	38.7	2.22	110.70	41.0	2.70	122.47	37.0	3.31	96.56	40.4	2.39
1963	88.46	38.8	2.28	114.40	41.6	2.75	127.19	37.3	3.41	99.23	40.5	2.45
1964	91.33	38.7	2.36	117.74	41.9	2.81	132.06	37.2	3.55	102.97	40.7	2.53
1965	95.45	38.8	2.46	123.52	42.3	2.92	138.38	37.4	3.70	107.53	41.2	2.61
1966	98.82	38.6	2.56	130.24	42.7	3.05	146.26	37.6	3.89	112.19	41.4	2.71
1967	101.84	38.0	2.68	135.89	42.6	3.19	154.95	37.7	4.11	114.49	40.6	2.82
1968	107.73	37.8	2.85	142.71	42.6	3.35	164.49	37.3	4.41	122.51	40.7	3.01
1969	114.61	37.7	3.04	154.80	43.0	3.60	181.54	37.9	4.79	129.51	40.6	3.19
1970	119.83	37.1	3.23	164.40	42.7	3.85	195.45	37.3	5.24	133.33	39.8	3.35
1971	127.31	36.9	3.45	172.14	42.4	4.06	211.67	37.2	5.69	142.44	39.9	3.57
1972	136.90	37.0	3.70	189.14	42.6	4.44	221.19	36.5	6.06	154.71	40.5	3.82
1973	145.39	36.9	3.94	201.40	42.4	4.75	235.89	36.8	6.41	166.46	40.7	4.09
1974	154.76	36.5	4.24	219.14	41.9	5.23	249.25	36.6	6.81	176.80	40.0	4.42
1975	163.53	36.1	4.53	249.31	41.9	5.95	266.08	36.4	7.31	190.79	39.5	4.83
1976	175.45	36.1	4.86	273.90	42.4	6.46	283.73	36.8	7.71	209.32	40.1	5.22
1977	189.00	36.0	5.25	301.20	43.4	6.94	295.65	36.5	8.10	228.90	40.3	5.68
1978	203.70	35.8	5.69	332.11	43.3	7.67	318.32	36.8	8.65	249.27	40.4	6.17
1979	219.91	35.7	6.16	364.64	43.0	8.48	341.69	36.9	9.26	268.94	40.2	6.69
	Transportation and public utilities			Wholesale and retail trade			Finance, insurance, and real estate			Services		
1949				\$42.93	40.5	\$1.060	\$47.63	37.8	\$1.260			
1950				44.55	40.5	1.100	50.52	37.7	1.340			
1951				47.79	40.5	1.18	54.67	37.7	1.45			
1952				49.20	40.0	1.23	57.08	37.8	1.51			
1953				51.35	39.5	1.30	59.57	37.7	1.58			
1954				53.33	39.5	1.35	62.04	37.6	1.65			
1955				55.16	39.4	1.40	63.92	37.6	1.70			
1956				57.48	39.1	1.47	65.68	36.9	1.78			
1957				59.60	38.7	1.54	67.53	36.7	1.84			
1958				61.76	38.6	1.60	70.12	37.1	1.89			
1959 ¹				64.41	38.8	1.66	72.74	37.3	1.95			
1960				66.01	38.6	1.71	75.14	37.2	2.02			
1961				67.41	38.3	1.76	77.12	36.9	2.09			
1962				69.91	38.2	1.83	80.94	37.3	2.17			
1963				72.01	38.1	1.89	84.38	37.5	2.25			
1964	\$118.78	41.1	\$2.89	74.66	37.9	1.97	85.79	37.3	2.30	\$70.03	36.1	\$1.94
1965	125.14	41.3	3.03	76.91	37.7	2.04	88.91	37.2	2.39	73.60	35.9	2.05
1966	128.13	41.2	3.11	79.39	37.1	2.14	92.13	37.3	2.47	77.04	35.5	2.17
1967	130.82	40.5	3.23	82.35	36.6	2.25	95.72	37.1	2.58	80.38	35.1	2.29
1968	138.85	40.6	3.42	87.00	36.1	2.41	101.75	37.0	2.75	83.97	34.7	2.42
1969	147.74	40.7	3.63	91.39	35.7	2.56	108.70	37.1	2.93	90.57	34.7	2.61
1970	155.93	40.5	3.85	96.02	35.3	2.72	112.67	36.7	3.07	96.66	34.4	2.81
1971	168.82	40.1	4.21	101.09	35.1	2.88	117.85	36.6	3.22	103.06	33.9	3.04
1972	187.86	40.4	4.65	106.45	34.9	3.05	122.98	36.6	3.36	110.85	33.9	3.27
1973	203.31	40.5	5.02	111.76	34.6	3.23	129.20	36.6	3.53	117.29	33.8	3.47
1974	217.48	40.2	5.41	119.02	34.2	3.48	137.61	36.5	3.77	126.00	33.6	3.75
1975	233.44	39.7	5.88	126.45	33.9	3.73	148.19	36.5	4.06	134.67	33.5	4.02
1976	256.71	39.8	6.45	133.79	33.7	3.97	155.43	36.4	4.27	143.52	33.3	4.31
1977	278.90	39.9	6.99	142.52	33.3	4.28	165.26	36.4	4.54	153.45	33.0	4.65
1978	302.80	40.0	7.57	153.64	32.9	4.67	178.36	36.4	4.90	163.67	32.8	4.99
1979	326.38	39.9	8.18	164.96	32.6	5.06	191.66	36.3	5.28	175.27	32.7	5.36

¹ Data include Alaska and Hawaii beginning in 1959.

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

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

Industry division and group	Annual Average		1979								1980				
	1978	1979	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. P	May P
TOTAL PRIVATE	35.8	35.7	35.5	35.9	36.0	36.0	35.8	35.7	35.6	35.9	35.1	35.1	35.2	35.0	35.0
MINING	43.3	43.0	42.8	43.3	41.7	43.1	43.5	43.7	43.7	43.9	43.4	43.2	43.3	42.9	42.8
CONSTRUCTION	36.8	36.9	37.2	37.9	37.7	38.0	37.9	37.6	36.5	37.1	35.1	35.5	36.0	36.5	36.9
MANUFACTURING	40.4	40.2	40.1	40.4	39.9	40.0	40.3	40.3	40.4	40.9	39.8	39.8	39.8	39.4	39.4
Overtime hours	3.6	3.3	3.3	3.4	3.2	3.3	3.6	3.4	3.4	3.4	3.0	2.9	3.0	2.7	2.5
Durable goods	41.1	40.8	40.8	41.0	40.4	40.4	40.8	40.8	40.8	41.6	40.3	40.3	40.4	39.9	39.8
Overtime hours	3.8	3.5	3.6	3.6	3.4	3.4	3.6	3.5	3.5	3.5	3.1	3.0	3.1	2.7	2.5
Lumber and wood products	39.8	39.5	39.6	40.2	39.4	39.9	40.1	39.8	38.8	39.2	38.1	38.5	38.3	37.1	37.3
Furniture and fixtures	39.3	38.6	38.2	38.8	38.0	38.6	39.0	39.3	39.2	39.9	38.4	38.3	38.5	38.0	37.2
Stone, clay, and glass products	41.6	41.5	41.9	42.1	41.5	41.7	41.7	41.7	41.7	41.8	40.1	40.1	40.7	40.4	40.9
Primary metal industries	41.8	41.4	41.4	41.6	41.3	40.8	41.3	40.9	40.7	40.9	40.7	40.7	40.7	40.6	39.8
Fabricated metal products	41.0	40.8	40.7	41.0	40.3	40.5	40.8	41.0	41.0	41.9	40.6	40.4	40.6	40.2	39.9
Machinery except electrical	42.0	41.8	41.7	42.0	41.2	41.3	41.9	41.6	41.9	42.8	41.5	41.5	41.6	41.1	41.0
Electric and electronic equipment	40.3	40.3	40.2	40.5	39.6	39.7	40.5	40.3	40.9	41.3	40.2	40.2	40.0	39.6	39.5
Transportation equipment	42.2	41.2	41.6	41.3	40.9	40.5	40.7	41.3	40.8	42.6	40.1	40.4	40.4	39.7	39.7
Instruments and related products	40.9	40.8	40.8	40.7	40.3	40.3	40.7	40.8	41.4	41.6	41.0	40.7	40.6	40.4	40.5
Miscellaneous manufacturing	38.8	38.9	38.5	39.0	38.7	38.9	39.3	39.3	39.6	39.7	39.1	38.8	38.9	38.6	38.4
Nondurable goods	39.4	39.3	39.1	39.4	39.2	39.4	39.6	39.4	39.6	39.9	39.0	38.9	38.9	38.7	38.8
Overtime hours	3.2	3.1	2.9	3.0	3.0	3.2	3.5	3.2	3.3	3.2	2.9	2.8	2.9	2.7	2.6
Food and kindred products	39.7	39.9	39.6	39.8	40.1	40.3	40.6	40.0	40.2	40.3	39.5	39.0	39.0	38.9	39.7
Tobacco manufactures	38.1	38.0	38.9	39.0	36.1	37.6	39.1	38.8	39.0	39.5	37.4	36.9	37.7	38.1	37.9
Textile mill products	40.4	40.3	40.1	40.6	39.9	40.3	40.8	40.8	41.3	41.5	40.9	40.8	40.9	39.8	40.1
Apparel and other textile products	35.6	35.2	35.1	35.6	35.4	35.6	35.4	35.5	35.6	35.9	35.2	35.5	35.5	35.3	35.3
Paper and allied products	42.9	42.6	42.4	42.8	42.5	42.6	42.7	42.6	42.9	43.5	42.6	42.4	42.4	42.2	41.6
Printing and publishing	37.6	37.5	37.3	37.4	37.4	37.9	37.9	37.5	37.9	38.1	37.2	37.0	37.2	36.8	36.7
Chemicals and allied products	41.9	41.8	41.8	41.8	41.7	41.8	41.8	41.7	42.1	42.2	41.7	41.6	41.6	41.6	41.4
Petroleum and coal products	43.6	43.8	43.7	43.4	44.1	43.6	44.7	44.1	44.8	43.4	36.1	39.6	39.4	41.8	42.4
Rubber and miscellaneous plastics products	40.9	40.5	40.5	40.7	40.2	40.0	40.5	40.5	40.3	40.7	40.3	39.9	40.0	39.7	39.1
Leather and leather products	37.1	36.5	36.4	37.1	36.9	36.6	36.8	36.5	36.8	37.3	36.7	36.8	36.4	36.6	36.9
TRANSPORTATION AND PUBLIC UTILITIES	40.0	39.9	39.6	40.0	40.0	40.3	39.9	39.9	40.2	40.0	39.5	39.4	39.5	39.3	39.1
WHOLESALE AND RETAIL TRADE	32.9	32.6	32.4	32.9	33.3	33.2	32.7	32.5	32.4	32.9	31.9	31.9	32.0	31.8	31.9
WHOLESALE TRADE	38.8	38.8	38.9	39.0	39.0	38.9	38.8	38.9	38.9	39.1	38.5	38.4	38.4	38.4	38.5
RETAIL TRADE	31.0	30.7	30.4	31.0	31.5	31.4	30.7	30.4	30.4	31.0	29.8	29.8	29.9	29.8	29.8
FINANCE, INSURANCE, AND REAL ESTATE	36.4	36.3	36.1	36.2	36.4	36.2	36.3	36.3	36.4	36.4	36.3	36.4	36.4	36.3	36.3
SERVICES	32.8	32.7	32.5	32.9	33.3	33.2	32.7	32.6	32.6	32.8	32.5	32.5	32.5	32.5	32.3

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	1979								1980				
	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. ^P	May ^P
TOTAL PRIVATE	35.7	35.6	35.6	35.6	35.7	35.6	35.7	35.7	35.7	35.5	35.4	35.3	35.1
MINING	42.8	43.0	41.6	43.2	43.1	43.1	43.2	43.9	44.4	43.7	43.5	43.2	42.8
CONSTRUCTION	37.1	37.2	36.8	37.2	37.5	36.6	36.8	37.1	37.6	36.7	36.1	36.5	36.8
MANUFACTURING	40.2	40.1	40.2	40.1	40.2	40.2	40.1	40.2	40.3	40.1	39.8	39.6	39.4
Overtime hours	3.5	3.4	3.3	3.2	3.2	3.2	3.3	3.2	3.2	3.1	3.2	2.9	2.6
Durable goods	40.9	40.7	40.7	40.7	40.7	40.8	40.6	40.7	40.8	40.6	40.4	40.1	39.8
Overtime hours	3.8	3.6	3.5	3.3	3.3	3.3	3.4	3.2	3.3	3.1	3.2	2.8	2.6
Lumber and wood products	39.4	39.4	39.3	39.5	39.7	39.4	38.9	39.0	39.5	39.1	38.6	37.1	37.1
Furniture and fixtures	38.5	38.5	38.4	38.3	38.6	38.8	38.9	39.0	39.0	39.0	38.6	38.6	37.5
Stone, clay, and glass products	41.7	41.6	41.4	41.3	41.5	41.3	41.5	41.6	41.3	41.0	40.9	40.5	40.7
Primary metal industries	41.4	41.2	41.3	41.0	41.0	41.1	40.7	40.6	40.8	40.8	40.8	40.7	39.8
Fabricated metal products	40.7	40.7	40.8	40.6	40.7	40.9	40.7	41.0	40.9	40.8	40.6	40.5	39.9
Machinery, except electrical	42.0	42.0	41.9	41.6	41.9	41.6	41.6	41.6	41.7	41.5	41.4	41.3	41.2
Electric and electronic equipment	40.4	40.3	40.2	39.8	40.3	40.3	40.6	40.5	40.4	40.4	40.0	39.8	39.7
Transportation equipment	41.5	40.8	40.9	41.7	40.6	41.3	40.6	41.0	41.0	40.9	40.4	39.7	39.6
Instruments and related products	40.8	40.6	40.7	40.5	40.6	40.7	41.0	40.8	41.5	40.9	40.5	40.7	40.5
Miscellaneous manufacturing	38.6	38.9	39.3	39.1	39.1	39.1	39.1	39.2	39.5	39.2	38.7	38.6	38.5
Nondurable goods	39.2	39.2	39.2	39.2	39.3	39.3	39.4	39.4	39.5	39.4	39.1	39.0	38.9
Overtime hours	3.0	3.0	3.0	3.0	3.1	3.0	3.2	3.1	3.1	3.0	3.1	2.9	2.7
Food and kindred products	39.8	39.8	39.8	39.7	40.0	39.9	40.0	39.9	40.0	39.6	39.4	39.5	39.9
Tobacco manufactures	38.9	37.6	38.5	38.0	38.6	38.3	37.8	38.8	38.5	37.7	37.6	38.1	37.9
Textile mill products	40.0	40.1	40.1	40.1	40.6	40.8	41.1	41.0	41.7	41.1	40.8	40.0	40.0
Apparel and other textile products	35.2	35.2	35.5	35.3	35.3	35.3	35.3	35.6	35.9	36.0	35.5	35.6	35.4
Paper and allied products	42.6	42.5	42.5	42.6	42.4	42.6	42.7	42.9	42.8	42.9	42.6	42.4	41.8
Printing and publishing	37.4	37.4	37.5	37.7	37.5	37.4	37.6	37.4	37.8	37.4	37.2	37.1	36.8
Chemicals and allied products	41.9	41.7	41.9	42.0	41.7	41.7	41.9	41.7	42.0	41.9	41.6	41.4	41.5
Petroleum and coal products	43.7	43.3	43.6	43.7	44.1	43.7	44.4	43.5	36.6	40.4	39.6	41.8	42.4
Rubber and miscellaneous plastics products	40.9	40.7	40.6	40.2	40.3	40.3	40.0	39.9	40.6	39.9	39.9	40.0	39.5
Leather and leather products	36.1	36.4	36.6	36.5	37.0	36.5	36.7	36.9	37.2	37.3	36.8	36.9	36.6
TRANSPORTATION AND PUBLIC UTILITIES	39.8	39.8	39.7	39.9	39.9	39.9	40.2	39.8	39.9	39.5	39.7	39.5	39.3
WHOLESALE AND RETAIL TRADE	32.6	32.6	32.6	32.5	32.6	32.6	32.7	32.6	32.5	32.3	32.3	32.1	32.0
WHOLESALE TRADE	39.0	38.8	38.8	38.7	38.7	38.8	38.9	38.9	38.8	38.7	38.5	38.5	38.6
RETAIL TRADE	30.6	30.6	30.6	30.5	30.7	30.6	30.7	30.6	30.5	30.3	30.3	30.1	29.9
FINANCE, INSURANCE, AND REAL ESTATE	36.1	36.2	36.3	36.1	36.4	36.2	36.5	36.4	36.2	36.4	36.5	36.4	36.3
SERVICES	32.7	32.7	32.8	32.7	32.7	32.6	32.7	32.9	32.7	32.7	32.7	32.7	32.5

c = corrected.

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		1979									1980				
	1978	1979	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. P	May P	
	TOTAL PRIVATE	\$5.69	\$6.16	\$6.09	\$6.12	\$6.16	\$6.19	\$6.31	\$6.32	\$6.35	\$6.39	\$6.42	\$6.46	\$6.51	\$6.53	\$6.57
MINING	7.67	8.48	8.45	8.49	8.52	8.48	8.57	8.57	8.70	8.73	8.85	8.88	8.92	9.05	9.05	
CONSTRUCTION	8.65	9.26	9.14	9.13	9.24	9.32	9.51	9.49	9.50	9.57	9.47	9.60	9.66	9.64	9.68	
MANUFACTURING	6.17	6.69	6.63	6.66	6.71	6.69	6.80	6.82	6.86	6.97	6.96	6.99	7.06	7.08	7.12	
Durable goods	6.58	7.12	7.07	7.11	7.15	7.12	7.24	7.25	7.29	7.41	7.39	7.45	7.54	7.55	7.59	
Lumber and wood products	5.60	6.08	5.97	6.16	6.23	6.23	6.32	6.24	6.23	6.25	6.22	6.34	6.36	6.28	6.39	
Furniture and fixtures	4.68	5.06	4.97	5.05	5.04	5.10	5.18	5.20	5.23	5.27	5.27	5.34	5.38	5.42	5.43	
Stone, clay, and glass products	6.32	6.84	6.78	6.85	6.89	6.90	6.98	7.00	7.07	7.10	7.05	7.13	7.26	7.34	7.42	
Primary metal industries	8.20	8.97	8.83	8.91	9.04	9.10	9.16	9.10	9.26	9.28	9.30	9.44	9.45	9.53	9.52	
Fabricated metal products	6.34	6.82	6.77	6.81	6.80	6.83	6.93	6.96	6.99	7.12	7.06	7.12	7.22	7.25	7.30	
Nondurable goods	5.53	6.00	5.91	5.94	6.03	6.04	6.11	6.14	6.21	6.26	6.28	6.27	6.30	6.37	6.42	
Food and kindred products	5.80	6.27	6.22	6.22	6.28	6.28	6.33	6.36	6.51	6.56	6.62	6.64	6.69	6.77	6.82	
Tobacco manufactures	6.13	6.69	6.83	6.82	6.83	6.59	6.54	6.43	7.01	7.04	7.13	7.41	7.61	7.81	7.70	
Textile mill products	4.30	4.66	4.52	4.54	4.65	4.77	4.82	4.83	4.86	4.87	4.90	4.90	4.93	4.93	4.92	
Apparel and other textile products	3.94	4.24	4.20	4.21	4.23	4.21	4.28	4.32	4.32	4.39	4.45	4.46	4.49	4.47	4.44	
Paper and allied products	6.52	7.12	6.96	7.05	7.17	7.22	7.32	7.34	7.42	7.48	7.48	7.51	7.54	7.62	7.61	
Printing and publishing	6.50	6.91	6.83	6.88	6.90	6.94	7.04	7.06	7.09	7.17	7.20	7.25	7.30	7.30	7.41	
Chemicals and allied products	7.01	7.59	7.47	7.53	7.60	7.65	7.73	7.82	7.87	7.91	7.96	7.99	8.04	8.11	8.15	
Petroleum and coal products	8.63	9.37	9.39	9.32	9.39	9.35	9.51	9.49	9.57	9.49	9.48	9.40	9.32	9.84	10.16	
Rubber and miscellaneous plastics products	5.52	5.96	5.90	5.91	5.95	5.94	6.03	6.12	6.14	6.21	6.25	6.25	6.27	6.31	6.32	
Leather and leather products	3.89	4.23	4.18	4.19	4.19	4.22	4.29	4.31	4.34	4.36	4.46	4.48	4.52	4.53	4.57	
TRANSPORTATION AND PUBLIC UTILITIES	7.57	8.18	7.94	8.03	8.23	8.32	8.45	8.45	8.52	8.55	8.56	8.59	8.64	8.71	8.74	
WHOLESALE AND RETAIL TRADE	4.67	5.06	5.00	5.02	5.05	5.06	5.13	5.15	5.18	5.18	5.34	5.36	5.40	5.40	5.42	
WHOLESALE TRADE	5.88	6.39	6.29	6.34	6.39	6.41	6.51	6.51	6.57	6.68	6.72	6.76	6.82	6.84	6.88	
RETAIL TRADE	4.20	4.53	4.49	4.50	4.51	4.52	4.58	4.59	4.62	4.61	4.78	4.78	4.81	4.81	4.83	
FINANCE, INSURANCE, AND REAL ESTATE	4.90	5.28	5.22	5.22	5.29	5.29	5.38	5.37	5.42	5.49	5.55	5.62	5.69	5.70	5.70	
SERVICES	4.99	5.36	5.27	5.27	5.29	5.30	5.45	5.48	5.54	5.60	5.65	5.70	5.74	5.75	5.78	

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

[Seasonally adjusted data: 1967 = 100]

Industry	1979									1980					Apr. 1980 to May 1980	May 1979 to May 1980
	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. P	May P			
TOTAL PRIVATE (in current dollars) ..	227.5	229.0	230.9	232.2	234.3	234.9	237.3	239.5	240.5	242.6	245.3	246.4	247.9	0.6	-9.0	
Mining	262.7	264.9	266.9	265.6	266.1	268.0	271.6	273.2	274.0	275.5	278.4	283.2	284.1	.3	-8.1	
Construction	220.4	220.4	222.1	223.1	224.4	224.0	225.8	227.6	225.1	229.8	231.9	232.0	232.5	.2	-5.5	
Manufacturing	232.3	233.9	235.4	236.9	238.7	240.0	242.1	244.3	245.3	248.1	250.1	252.3	254.3	.8	-9.5	
Transportation and public utilities ..	243.7	246.4	251.3	252.6	255.6	255.8	258.9	260.7	261.2	262.7	266.2	267.4	268.8	.5	-10.3	
Wholesale and retail trade	221.0	222.6	223.8	225.4	227.0	227.4	229.5	231.3	234.7	235.5	238.0	238.4	239.9	.6	-8.5	
Finance, insurance, and real estate ..	207.0	208.0	210.8	211.5	214.4	213.1	216.2	218.5	218.6	221.2	226.0	226.0	225.8	-.1	-9.1	
Services	224.3	225.7	227.0	228.4	231.5	232.3	234.7	237.7	238.0	239.9	243.1	243.6	245.4	.7	-9.4	
TOTAL PRIVATE (in constant dollars) ..	106.3	105.8	105.6	105.1	104.9	104.1	104.1	103.8	102.8	102.3	102.0	101.5	(¹)	(¹)	(¹)	

¹ Not available.

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		1979								1980				
	1978	1979	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. P	May P
TOTAL PRIVATE	\$203.70	\$219.91	\$216.20	\$219.71	\$221.76	\$222.84	\$225.90	\$225.62	\$226.06	\$229.40	\$225.34	\$226.75	\$229.15	\$228.55	\$229.95
MINING	332.11	364.64	361.66	367.62	355.28	365.49	372.80	374.51	380.19	383.25	384.09	383.62	386.24	388.25	387.34
CONSTRUCTION	318.32	341.69	340.01	346.03	348.35	354.16	360.43	356.82	346.75	355.05	332.40	340.80	347.76	351.86	357.19
MANUFACTURING	249.27	268.94	265.86	269.06	267.73	267.60	274.04	274.85	277.14	285.07	277.01	278.20	280.99	278.95	280.53
Durable goods	270.44	290.50	288.46	291.51	288.86	287.65	295.39	295.80	297.43	308.26	297.82	300.24	304.62	301.25	302.08
Lumber and wood products	222.88	240.16	236.41	247.63	245.46	248.58	253.43	248.35	241.72	245.00	236.98	244.09	243.59	232.99	238.35
Furniture and fixtures	183.92	195.32	189.85	195.94	191.52	196.86	202.02	204.36	205.02	210.27	202.37	204.52	207.13	205.96	202.00
Stone, clay, and glass products	262.91	283.86	284.08	288.39	285.94	287.73	291.07	291.90	294.82	296.78	282.71	285.91	295.48	296.54	303.48
Primary metal industries	342.76	371.36	365.56	370.66	373.35	371.28	378.31	372.19	376.88	379.55	378.51	384.21	384.62	386.92	378.90
Fabricated metal products	259.94	278.26	275.54	279.21	274.04	276.62	282.74	285.36	286.59	298.33	286.64	287.65	293.13	291.45	291.27
Machinery except electrical	284.34	306.39	302.33	308.28	302.82	303.56	313.41	309.92	314.67	327.42	318.31	319.97	323.65	321.81	323.49
Electric and electronic equipment	234.55	254.29	249.64	253.13	248.29	252.49	261.63	261.14	266.26	274.23	268.13	269.74	271.20	268.88	268.60
Transportation equipment	333.80	351.44	356.10	352.29	349.70	341.82	349.61	358.07	354.14	379.14	352.08	357.14	364.00	357.30	358.09
Instruments and related products	233.54	251.74	249.29	248.68	248.25	247.44	252.75	257.86	264.55	269.98	269.37	267.81	268.77	267.85	271.76
Miscellaneous manufacturing	181.97	196.06	192.50	194.61	194.66	196.06	199.25	201.22	203.94	207.23	207.62	206.80	208.50	208.44	210.05
Nondurable goods	217.88	235.80	231.08	234.04	236.38	237.98	241.96	241.92	245.92	249.77	244.92	243.90	245.07	246.52	249.10
Food and kindred products	230.26	250.17	246.31	247.56	251.83	253.08	257.00	254.40	261.70	264.37	261.49	258.96	260.91	263.35	270.75
Tobacco manufactures	233.55	254.22	265.69	265.98	246.56	247.78	255.71	249.48	273.39	278.08	266.66	273.43	286.90	297.56	291.83
Textile mill products	173.72	187.80	181.25	184.32	185.54	192.23	196.66	197.06	200.72	202.11	200.41	199.92	201.64	196.21	197.29
Apparel and other textile products	140.26	149.25	147.42	149.88	149.74	149.88	151.51	153.36	153.79	157.60	156.64	158.33	159.40	157.79	156.73
Paper and allied products	279.71	303.31	295.10	302.74	304.73	307.57	312.56	312.68	318.32	325.38	318.65	318.42	319.70	321.56	316.58
Printing and publishing	244.40	259.13	254.76	257.31	258.06	263.03	266.82	264.75	268.71	273.18	267.84	268.25	271.56	268.64	271.95
Chemicals and allied products	293.72	317.26	312.25	314.75	316.92	319.77	323.11	326.09	331.33	333.80	331.93	332.38	334.46	337.38	337.41
Petroleum and coal products	376.27	410.41	410.34	404.49	414.10	407.66	425.10	418.51	428.74	411.87	342.23	372.24	367.21	411.31	430.78
Rubber and miscellaneous plastics products	225.77	241.38	238.95	240.54	239.19	237.60	244.22	247.86	247.44	252.75	251.88	249.38	250.80	250.51	247.11
Leather and leather products	144.32	154.40	152.15	155.45	154.61	154.45	157.87	157.32	159.71	162.63	163.68	164.86	164.53	165.80	168.63
TRANSPORTATION AND PUBLIC UTILITIES	302.80	326.38	314.42	321.20	329.20	335.30	337.16	337.16	342.50	342.00	338.12	338.45	341.28	342.30	341.73
WHOLESALE AND RETAIL TRADE	153.64	164.96	162.00	165.16	168.17	167.99	167.75	167.38	167.83	170.42	170.35	170.98	172.80	171.72	172.90
WHOLESALE TRADE	228.14	247.93	244.68	247.26	249.21	249.35	252.59	253.24	255.57	261.19	258.72	259.58	261.89	262.66	264.88
RETAIL TRADE	130.20	139.07	136.50	139.50	142.07	141.93	140.61	139.54	140.45	142.91	142.44	142.44	143.82	143.34	143.93
FINANCE, INSURANCE, AND REAL ESTATE	178.36	191.66	188.44	188.96	192.56	191.50	195.29	194.93	197.29	199.84	201.47	204.57	207.12	206.91	206.91
SERVICES	163.67	175.27	171.28	173.38	176.16	175.96	178.22	178.65	180.60	183.68	183.63	185.25	186.55	186.88	186.69

20. Gross and spendable weekly earnings, in current and 1967 dollars, 1960 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	1967 dollars	Current dollars	1967 dollars	Current dollars	1967 dollars	Current dollars	1967 dollars	Current dollars	1967 dollars	Current dollars	1967 dollars
1960	\$80.67	\$90.95	\$65.59	\$73.95	\$72.96	\$82.25	\$89.72	\$101.15	\$72.57	\$81.82	\$80.11	\$90.32
1961	82.60	92.19	67.08	74.87	74.48	83.13	92.34	103.06	74.60	83.26	82.18	91.72
1962	85.91	94.82	69.56	76.78	76.99	84.98	96.56	106.58	77.86	85.94	85.53	94.40
1963	88.46	96.47	71.05	77.48	78.56	85.67	99.23	108.21	79.51	86.71	87.25	95.15
1964	91.33	98.31	75.04	80.78	82.57	88.88	102.97	110.84	84.40	90.85	92.18	99.22
1965	95.45	101.01	79.32	83.94	86.63	91.67	107.53	113.79	89.08	94.26	96.78	102.41
1966	98.82	101.67	81.29	83.63	88.66	91.21	112.19	115.42	91.45	94.08	99.33	102.19
1967	101.84	101.84	83.38	83.38	90.86	90.86	114.49	114.49	92.97	92.97	100.93	100.93
1968	107.73	103.39	86.71	83.21	95.28	91.44	122.51	117.57	97.70	93.76	106.75	102.45
1969	114.61	104.38	90.96	82.84	99.99	91.07	129.51	117.95	101.90	92.81	111.44	101.49
1970	119.83	103.04	96.21	82.73	104.90	90.20	133.33	114.64	106.32	91.42	115.58	99.38
1971	127.31	104.95	103.80	85.57	112.43	92.69	142.44	117.43	114.97	94.78	124.24	102.42
1972	136.90	109.26	112.19	89.54	121.68	97.11	154.71	123.47	125.34	100.03	135.57	108.20
1973	145.39	109.23	117.51	88.29	127.38	95.70	166.46	125.06	132.57	99.60	143.50	107.81
1974	154.76	104.78	124.37	84.20	134.61	91.14	176.80	119.70	140.19	94.92	151.56	102.61
1975	163.53	101.45	132.49	82.19	145.65	90.35	190.79	118.36	151.61	94.05	166.29	103.16
1976	175.45	102.90	143.30	84.05	155.87	91.42	209.32	122.77	167.89	98.43	181.32	106.35
1977	189.00	104.13	155.19	85.50	169.93	93.63	228.90	126.12	183.80	101.27	200.06	110.23
1978	203.70	104.30	165.39	84.69	180.71	92.53	249.27	127.63	197.40	101.08	214.87	110.02
1979	219.91	101.02	178.00	81.76	194.82	89.49	268.94	123.54	212.43	97.58	232.07	106.60
1979: May	216.20	100.89	175.29	81.80	191.93	89.56	265.86	124.06	210.04	98.14	229.74	107.20
June	219.71	101.30	177.85	82.00	194.67	89.75	269.06	124.05	212.51	97.98	232.17	107.04
July	221.76	101.08	179.35	81.75	196.26	89.45	267.73	122.03	211.61	96.45	231.16	105.36
August	222.84	100.60	180.13	81.32	197.11	88.99	267.60	120.81	211.52	95.49	231.06	104.32
September	225.90	100.98	182.36	81.52	199.42	89.15	274.04	122.50	215.89	96.51	235.94	105.47
October	225.62	100.01	182.16	80.74	199.21	88.30	274.85	121.83	216.44	95.94	236.56	104.86
November	226.06	99.32	182.48	80.18	199.54	87.67	277.14	121.77	217.99	95.78	238.30	104.70
December	229.40	99.74	184.84	80.37	202.08	87.86	285.07	123.94	223.38	97.12	244.31	106.22
1980: January	225.34	96.59	181.96	77.99	199.00	85.30	277.01	118.74	217.91	93.40	238.20	102.10
February	226.75	95.88	182.98	77.37	200.07	84.60	278.20	117.63	218.71	92.48	239.10	101.10
March	229.15	95.52	184.67	76.98	201.89	84.16	280.99	117.13	220.61	91.96	241.22	100.55
April ^P	228.55	94.21	184.25	75.95	201.43	83.03	278.95	114.98	219.22	90.36	239.67	98.79
May ^P	229.95	(¹)	185.23	(¹)	202.49	(¹)	280.53	(¹)	220.30	(¹)	240.87	(¹)

¹Not available.

NOTE: The earnings expressed in 1967 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, 1978-80," *Employment and Earnings*, March 1980, 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	1979										1980			
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	
All programs:														
Insured unemployment	2,610	2,230	2,119	2,429	2,377	2,164	2,236	2,559	3,047	3,740	3,730	3,652	3,627	
State unemployment insurance program:¹														
Initial claims ²	1,589	1,309	1,400	1,978	1,545	1,219	1,641	1,827	2,263	2,837	1,818	1,705	.....
Insured unemployment (average weekly volume)	2,440	2,078	1,991	2,300	2,245	2,024	2,057	2,384	2,864	3,537	3,518	3,356	3,278	
Rate of insured unemployment	3.1	2.6	2.5	2.8	2.7	2.4	2.4	2.8	3.4	4.1	4.1	3.9	3.8	
Weeks of unemployment compensated	8,956	8,442	7,197	7,889	8,830	6,993	7,638	8,107	9,171	13,792	12,800	13,170	.....
Average weekly benefit amount for total unemployment	\$89.25	\$88.37	\$87.25	\$86.40	\$88.56	\$89.07	\$90.59	\$92.39	\$94.54	\$96.41	\$98.46	\$99.15	.....
Total benefits paid	\$777,699	\$725,229	\$610,269	\$665,687	\$767,025	\$606,095	\$673,965	\$728,370	\$843,869	\$1,283,946	\$1,229,877	\$1,218,231	.....
Unemployment compensation for ex-servicemen:³														
Initial claims ¹	20	20	24	28	28	23	26	24	24	25	21	21	.....
Insured unemployment (average weekly volume)	48	45	45	51	52	52	52	54	56	60	58	63	52	
Weeks of unemployment compensated	207	214	193	216	234	211	236	232	233	299	255	249	.....
Total benefits paid	\$19,617	\$20,440	\$18,623	\$20,965	\$23,861	\$19,634	\$23,325	\$23,093	\$23,093	\$29,635	\$25,414	\$24,928	.....
Unemployment compensation for Federal civilian employees:⁴														
Initial claims	12	12	13	16	13	13	18	15	15	19	11	12	.....
Insured unemployment (average weekly volume)	27	24	23	2.5	25	25	28	29	31	34	32	30	25	
Weeks of unemployment compensated	112	106	91	96	107	91	109	118	118	150	129	123	.....
Total benefits paid	\$10,345	\$9,330	\$8,341	\$8,802	\$9,829	\$8,453	\$10,093	\$11,063	\$11,047	\$14,118	\$12,387	\$11,901	.....
Railroad unemployment insurance:														
Applications	3	3	9	15	8	13	11	10	11	22	7	5	.....
Insured unemployment (average weekly volume)	18	10	8	11	12	21	18	20	19	40	39	30	.....
Number of payments	40	29	19	20	26	32	51	36	41	80	71	68	.....
Average amount of benefit payment	\$195.55	\$177.39	\$183.13	\$190.10	\$195.61	\$189.08	\$189.61	\$183.38	\$197.22	\$199.01	\$208.73	\$210.79	.....
Total benefits paid	\$7,276	\$5,681	\$3,314	\$3,699	\$3,767	\$5,747	\$8,003	\$6,462	\$8,085	\$14,967	\$14,573	\$13,884	.....
Employment service:⁵														
New applications and renewals	9,180	10,452	11,907	13,186	14,479	15,525	1,855	.....	4,378	.....	.....	8,553	.....
Nonfarm placements	2,291	2,616	3,051	3,482	3,935	4,349	458	.....	1,044	.....	.....	1,816	.....

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

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

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

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

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

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

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, 1967-79

[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

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)						
	1979			1980				1979			1980			
	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
All items	211.5	227.5	229.9	233.2	236.4	239.8	242.5	211.8	227.6	230.0	233.3	236.5	239.9	242.6
Food and beverages	226.3	233.1	235.5	237.5	238.6	241.0	242.8	226.7	233.1	235.7	237.8	239.0	241.2	243.2
Housing	219.8	240.8	243.6	247.3	250.5	254.5	257.9	219.7	240.7	243.6	247.3	250.5	254.4	257.8
Apparel and upkeep	165.4	171.7	172.2	171.0	171.9	176.0	177.3	165.4	171.3	171.4	169.8	171.5	175.1	176.1
Transportation	202.9	224.9	227.7	233.5	239.6	243.7	246.8	203.7	225.7	228.3	234.1	240.2	244.3	247.7
Medical care	235.1	248.0	250.7	253.9	257.9	260.2	262.0	235.2	249.1	251.7	254.9	258.7	260.9	263.1
Entertainment	186.5	192.8	193.4	195.3	197.8	200.6	202.5	185.5	192.0	192.3	193.9	196.2	199.5	201.3
Other goods and services	193.2	202.9	204.0	206.3	208.1	208.9	209.8	193.1	202.0	203.0	206.0	207.7	208.3	209.2
Commodities	203.3	217.4	219.4	222.4	225.2	228.0	229.9	203.6	217.4	219.4	222.3	225.3	228.1	230.1
Commodities less food and beverages	190.1	206.9	208.8	212.0	215.5	218.4	220.4	190.2	206.9	208.7	212.0	215.7	218.7	220.6
Nondurables less food and beverages	191.9	216.6	219.0	224.6	231.8	237.5	239.5	192.7	218.1	220.5	226.3	234.1	239.8	241.7
Durables	187.2	198.4	199.8	201.3	202.1	203.0	204.9	186.8	196.9	198.2	199.6	200.3	201.2	203.3
Services	227.0	246.2	249.3	253.1	256.8	261.3	265.3	227.1	246.7	249.6	253.6	257.3	261.7	265.8
Rent, residential	172.0	182.1	182.9	184.1	185.6	186.6	187.0	171.9	181.9	182.7	183.9	185.5	186.4	186.9
Household services less rent	256.5	284.6	289.2	295.1	300.2	307.3	313.4	257.2	286.3	291.1	297.2	302.4	309.6	315.8
Transportation services	208.2	221.5	224.2	226.8	229.6	233.4	238.1	209.0	221.5	224.0	226.6	229.3	232.7	238.0
Medical care services	253.1	267.6	270.7	274.4	279.0	281.5	283.4	252.9	268.8	271.8	275.6	279.8	282.2	284.5
Other services	196.2	206.5	207.1	209.0	211.1	212.9	214.5	196.4	207.3	207.4	209.3	211.4	213.5	214.6
Special indexes:														
All items less food	206.3	224.1	226.4	229.9	233.5	237.1	239.9	206.3	224.2	226.4	230.0	233.7	237.3	240.2
All items less mortgage interest costs	206.4	219.8	221.7	224.3	227.1	229.8	231.8	206.8	220.1	222.0	224.7	227.6	230.2	232.4
Commodities less food	188.9	205.4	207.2	210.4	213.8	216.7	218.6	189.0	205.4	207.1	210.3	214.0	216.9	218.9
Nondurables less food	189.6	212.9	215.2	220.5	227.3	232.6	234.6	190.2	214.4	216.7	222.1	229.4	234.8	236.7
Nondurables less food and apparel	205.2	236.8	240.1	248.6	258.2	264.1	266.5	205.8	238.2	241.5	250.2	260.1	266.3	268.7
Nondurables	209.9	225.8	228.2	232.0	236.3	240.3	242.2	210.6	226.5	229.0	233.9	237.4	241.4	243.3
Services less rent	237.1	258.2	261.6	266.1	270.2	275.4	280.0	237.3	258.8	262.1	266.7	270.8	275.9	280.8
Services less medical care	222.7	242.3	245.3	249.2	252.7	257.4	261.5	222.9	242.6	245.5	249.5	253.1	257.7	261.9
Domestically produced farm foods	222.4	224.5	227.5	229.2	229.1	231.2	232.7	222.3	224.4	227.5	229.0	229.2	231.0	232.4
Selected beef cuts	264.0	256.5	263.2	265.7	267.2	270.2	268.0	265.6	259.2	265.2	268.0	270.3	272.3	269.5
Energy	250.2	307.8	313.7	327.9	344.6	355.0	358.8	251.2	310.7	317.0	331.5	348.7	359.6	363.3
All items less energy	208.8	221.4	223.6	225.9	228.0	230.8	233.4	209.0	221.0	223.0	225.3	227.3	230.0	232.7
All items less food and energy	202.3	216.1	218.1	220.6	222.8	225.7	228.5	202.1	215.4	217.3	219.6	221.8	224.6	227.5
Commodities less food and energy	182.1	191.4	192.6	193.7	194.9	196.5	198.2	181.8	190.4	191.4	192.4	193.5	195.1	196.9
Energy commodities	253.2	332.5	340.0	361.5	385.0	398.5	402.3	253.9	333.8	341.5	362.8	386.4	400.3	404.0
Services less energy	225.6	244.6	247.6	251.6	255.2	259.6	263.5	225.8	245.1	248.0	252.2	255.7	260.0	264.2
Purchasing power of the consumer dollar, 1967 = \$1	\$0.473	\$0.440	\$0.435	\$0.429	\$0.423	\$0.417	\$0.412	\$0.472	\$0.439	\$0.435	\$0.429	\$0.423	\$0.417	\$0.412

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)						
	1979			1980				1979			1980			
	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
FOOD AND BEVERAGES	226.3	233.1	235.5	237.5	238.6	241.0	242.8	226.7	233.1	235.7	237.8	239.0	241.2	243.2
Food	232.3	239.1	241.7	243.8	244.9	247.3	249.1	232.7	239.1	241.8	244.0	245.2	247.5	249.5
Food at home	231.7	236.0	238.7	240.6	241.3	243.6	245.3	231.4	235.4	238.3	240.1	241.1	243.1	245.0
Cereals and bakery products	214.5	228.7	231.6	234.2	236.8	238.6	242.0	215.2	229.7	232.3	234.7	237.4	239.3	242.2
Cereals and cereal products (12/77 = 100)	114.0	121.1	122.9	125.0	125.8	126.6	129.4	114.1	122.1	123.8	126.1	127.2	127.7	130.1
Flour and prepared flour mixes (12/77 = 100)	114.8	122.8	123.8	125.7	125.7	126.6	127.8	115.5	124.6	125.1	126.9	127.3	127.5	128.9
Cereal (12/77 = 100)	114.6	119.7	122.8	123.7	124.9	126.0	129.4	114.6	119.9	122.9	124.2	125.5	126.6	129.7
Rice, pasta, and cornmeal (12/77 = 100)	112.5	121.6	122.2	126.4	127.4	127.6	130.8	112.2	122.7	123.9	127.9	129.2	129.4	131.9
Bakery products (12/77 = 100)	113.3	121.0	122.4	123.5	125.1	126.1	127.6	113.8	121.3	122.7	123.6	125.1	126.2	127.5
White bread	188.4	204.5	207.4	208.6	210.7	212.0	215.1	188.0	203.9	206.6	207.4	209.7	212.1	215.1
Other breads (12/77 = 100)	112.6	121.3	123.3	123.8	124.6	125.6	127.0	114.2	124.2	126.0	126.9	127.5	129.3	129.3
Fresh biscuits, rolls, and muffins (12/77 = 100)	113.3	121.2	123.1	124.8	126.2	127.0	126.9	113.2	120.8	122.3	123.1	124.3	124.9	125.3
Fresh cakes and cupcakes (12/77 = 100)	112.0	119.4	120.3	121.7	122.8	124.4	126.5	113.0	119.1	120.1	120.8	122.2	123.2	125.4
Cookies (12/77 = 100)	113.1	117.1	117.8	119.7	122.8	124.4	125.3	114.5	118.4	119.6	121.5	124.0	125.6	126.3
Crackers and bread and cracker products (12/77 = 100)	112.4	114.5	116.2	117.5	119.9	120.2	122.0	113.1	116.1	116.3	118.4	121.0	121.8	122.2
Fresh sweetrolls, coffeecake, and donuts (12/77 = 100)	112.0	119.9	121.5	122.2	123.8	125.0	126.6	114.0	121.9	123.4	124.1	125.4	126.2	128.0
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	114.9	123.7	124.8	125.7	127.2	127.9	129.7	112.9	120.8	121.4	122.5	123.8	124.0	125.3
Meats, poultry, fish, and eggs	240.0	230.2	235.5	238.0	236.2	237.8	235.1	239.4	230.0	235.1	237.5	236.4	237.1	234.3
Meats, poultry, and fish	245.1	235.2	239.8	243.0	242.6	243.8	241.1	244.4	235.0	239.2	242.5	242.8	243.0	240.2
Meats	248.3	237.4	242.3	244.1	244.1	245.7	242.6	247.6	237.3	241.8	243.7	244.3	245.0	241.3
Beef and veal	262.5	255.5	262.2	264.6	266.2	269.1	267.0	263.9	257.7	263.7	266.7	268.9	270.8	268.2
Ground beef other than canned	273.7	264.2	271.2	271.4	273.3	275.3	272.9	273.2	266.0	273.0	272.7	276.2	278.7	274.7
Chuck roast	278.5	263.1	268.1	274.7	277.7	286.2	277.9	286.8	273.1	274.2	286.6	288.7	293.4	286.1
Round roast	235.8	229.1	238.1	241.9	244.5	244.2	242.7	237.2	232.7	240.5	245.1	245.8	244.5	242.1
Round steak	247.8	241.9	247.5	249.8	252.3	254.2	253.5	245.1	239.7	246.2	249.4	250.5	251.1	249.6
Sirloin steak	248.4	247.0	250.8	250.9	251.1	254.3	256.1	247.5	247.4	253.5	253.5	253.0	256.0	257.8
Other beef and veal (12/77 = 100)	148.4	146.3	150.2	151.8	152.2	153.8	153.3	149.1	146.6	149.9	151.9	152.8	153.7	153.1
Pork	248.4	201.0	205.0	206.4	202.8	202.6	197.1	225.6	201.5	205.6	206.8	204.1	203.0	196.7
Bacon	220.8	186.3	193.6	194.5	190.1	187.6	182.1	223.2	188.7	195.8	195.3	193.8	189.4	183.9
Pork chops	212.8	188.8	187.8	192.1	189.7	190.7	187.0	214.1	188.1	189.1	194.8	191.0	190.5	184.7
Ham other than canned (12/77 = 100)	103.7	95.9	102.5	99.1	95.7	95.8	90.6	101.5	95.4	100.9	96.5	95.2	94.7	88.7
Sausage	282.0	254.5	256.5	256.6	255.1	257.6	255.1	280.9	255.8	258.3	260.3	257.0	259.8	258.0
Canned ham	234.4	214.8	218.9	220.8	219.5	219.3	213.5	234.3	214.6	219.1	219.3	218.9	217.4	214.5
Other pork (12/77 = 100)	127.8	112.9	112.6	116.2	114.3	113.6	110.7	127.3	112.7	112.7	116.2	114.6	113.7	110.0
Other meats	239.4	242.0	243.0	243.2	244.7	245.8	243.9	236.1	238.5	239.5	239.3	240.9	241.5	239.0
Frankfurters	240.1	238.9	239.3	239.0	242.7	244.6	240.6	238.9	237.2	238.7	239.5	242.1	242.8	239.3
Bologna, liverwurst, and salami (12/77 = 100)	132.5	133.4	134.4	134.1	135.6	135.5	134.9	130.9	130.4	130.8	130.5	132.3	132.2	131.1
Other luncheats (12/77 = 100)	121.8	121.6	121.5	121.2	120.7	121.8	121.9	119.0	119.5	119.4	118.7	118.6	118.8	118.4
Lamb and organ meats (12/77 = 100)	131.2	138.3	140.0	141.6	142.4	142.3	140.1	131.2	139.8	141.7	142.5	143.4	144.3	141.3
Poultry	189.9	171.6	176.2	187.8	182.6	180.7	177.2	187.2	170.1	173.9	184.3	181.1	177.4	176.0
Fresh whole chicken	191.5	166.7	175.2	191.1	183.6	179.5	174.7	187.8	163.3	169.8	183.8	178.9	172.5	170.6
Fresh and frozen chicken parts (12/77 = 100)	121.5	110.8	112.3	120.7	116.8	116.8	114.5	121.0	110.7	111.8	118.7	117.0	116.3	114.7
Other poultry (12/77 = 100)	123.0	115.9	116.9	119.3	118.8	118.2	117.3	120.6	116.0	117.4	120.1	119.4	117.7	118.1
Fish and seafood	295.6	312.2	312.6	316.7	320.4	322.6	325.3	292.9	307.5	309.1	315.4	317.9	320.2	325.1
Canned fish and seafood (12/77 = 100)	108.9	116.8	117.1	118.5	120.3	120.4	122.9	107.9	116.0	116.5	118.4	119.7	119.5	121.8
Fresh and frozen fish and seafood (12/77 = 100)	114.8	120.1	120.2	121.9	123.0	124.3	124.5	113.9	117.8	118.5	121.2	122.0	123.5	125.1
Eggs	179.3	170.1	185.9	178.2	157.2	164.5	161.2	179.8	169.6	186.6	177.0	156.7	164.3	161.5
Dairy products	202.4	216.0	216.9	218.4	219.5	220.3	222.4	203.0	216.3	217.4	218.9	219.8	221.1	223.1
Fresh milk and cream (12/77 = 100)	114.0	121.9	122.7	123.2	123.7	124.1	124.7	114.3	121.8	122.6	123.2	123.6	124.2	124.9
Fresh whole milk	186.5	200.4	201.2	202.3	203.2	204.0	204.9	187.2	199.7	200.9	201.8	202.7	203.8	204.8
Other fresh milk and cream (12/77 = 100)	114.1	120.6	122.0	122.1	122.7	122.7	123.5	114.1	121.1	122.2	122.8	123.0	123.1	124.1
Processed dairy products (12/77 = 100)	114.9	122.3	122.5	123.8	124.5	125.1	127.0	115.3	123.0	123.3	124.5	125.1	126.2	128.0
Butter	196.6	214.4	214.0	216.9	218.3	218.3	219.9	199.1	217.1	216.6	219.8	220.9	220.9	222.7
Cheese (12/77 = 100)	115.5	122.7	122.6	123.5	124.2	124.9	126.2	115.4	122.5	122.7	123.6	124.4	125.5	126.8
Ice cream and related products (12/77 = 100)	114.3	121.4	122.6	124.0	124.6	125.1	128.6	115.3	123.4	124.3	125.6	125.6	127.2	130.4
Other dairy products (12/77 = 100)	111.9	117.8	117.9	119.8	120.9	121.6	124.0	112.0	118.2	118.3	120.4	121.3	121.9	123.6
Fruits and vegetables	226.5	229.5	230.2	229.8	228.3	232.4	240.9	224.6	226.7	228.3	227.2	225.9	230.1	239.8
Fresh fruits and vegetables	230.7	230.1	230.1	227.2	223.1	229.9	245.2	228.5	226.7	228.5	224.9	226.2	227.4	244.8
Fresh fruits	237.1	242.7	234.9	233.6	235.8	245.4	257.0	234.2	238.3	233.3	232.7	234.7	245.4	255.6
Apples	223.1	207.2	221.8	230.4	239.6	250.2	265.5	219.8	207.7	220.2	230.1	237.6	249.0	264.4
Bananas	217.9	209.0	225.2	221.9	238.5	243.9	242.8	213.7	206.5	222.0	219.5	234.6	240.8	243.5
Oranges	267.7	293.9	256.7	236.2	231.1	238.1	240.6	259.9	283.3	249.5	231.3	228.4	240.9	234.3
Other fresh fruits (12/77 = 100)	121.9	127.5	121.1	122.5	121.4	127.4	136.5	121.8	125.7	121.6	122.7	121.3	126.9	135.7
Fresh vegetables	224.7	218.4	225.7	221.2	211.2	215.5	234.2	223.4	216.4	224.2	217.9	207.9	211.3	235.2
Potatoes	197.3	195.7	207.0	203.8	203.3	203.3	201.7	197.1	191.7	199.6	200.9	199.8	200.3	198.2
Lettuce	195.7	244.2	227.5	197.6	198.7	208.3	271.9	196.9	230.9	231.3	193.2	191.7	203.8	281.9
Tomatoes	250.9	225.3	227.9	216.7	184.9	201.4	201.2	250.4	225.4	224.8	213.2	184.3	197.2	197.7
Other fresh vegetables (12/77 = 100)	132.5	119.1	128.0	132.0	125.1	125.4	134.6	131.0	118.9	128.1	130.5	123.9	123.0	135.3
Processed fruits and vegetables	223.9	231.0	232.3	234.7	236.2	237.2	238.4	222.1	228.6	230.0	231.8	233.9	235.0	236.2
Processed fruits (12/77 = 100)	117.0	121.2	121.8	122.9	123.4	123.9	125.0	116.8	121.1	121.3	122.4	123.6	123.9	124.9
Frozen fruit and fruit juices (12/77 = 100)	114.8	116.6	116.8	117.2	117.6	117.7	119.3	114.5	115.7	115.9	116.5	117.8	116.5	118.4
Fruit juices and other than frozen (12/77 = 100)	115.2	122.1	123.6	125.1	126.0	127.2	128.3	115.3	124.4	123.4	124.5	126.3	127.4	128.4
Canned and dried fruits (12/77 = 100)	120.9	124.2	124.2	125.3	125.5	125.5								

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

[1967=100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1979			1980				1979			1980			
	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
FOOD AND BEVERAGES—Continued														
Food—Continued														
Food at home—Continued														
Fruits and vegetables—Continued														
Cut corn and canned beans except lima (12/77=100)	112.7	113.4	114.4	114.5	115.2	116.0	115.6	111.4	111.8	113.0	112.7	113.4	115.4	114.3
Other canned and dried vegetables (12/77=100)	106.3	110.0	110.9	112.9	113.9	114.8	114.7	105.0	108.1	109.1	110.4	111.9	112.3	112.7
Other foods at home	264.0	279.6	281.1	283.5	288.0	292.0	295.1	263.7	278.3	279.9	282.6	287.3	290.9	294.6
Sugar and sweets	274.2	283.2	284.6	289.8	297.5	313.5	319.5	273.6	281.9	284.1	289.6	297.1	314.1	320.8
Candy and chewing gum (12/77=100)	116.0	120.1	120.1	121.3	122.4	123.8	126.3	115.8	119.8	119.9	121.2	122.2	123.9	126.5
Sugar and artificial sweeteners (12/77=100)	114.8	116.2	117.2	122.2	131.5	153.0	156.9	115.1	116.2	117.6	122.7	131.6	153.8	158.6
Other sweets (12/77=100)	110.6	116.4	115.5	118.7	119.5	120.4	121.3	109.4	114.6	116.6	117.5	118.5	119.3	120.0
Fats and oils (12/77=100)	222.5	232.3	233.0	233.9	235.9	236.8	238.3	223.0	232.8	233.7	234.9	236.5	236.8	238.3
Margarine	236.7	246.2	247.7	248.3	247.9	248.8	247.9	235.9	246.7	247.8	248.8	247.9	248.3	248.3
Nondairy substitutes and peanut butter (12/77=100)	110.9	115.1	115.7	115.3	116.4	117.9	119.8	111.2	115.0	115.8	116.1	117.2	118.5	120.0
Other fats, oils, and salad dressings (12/77=100)	115.4	121.0	121.1	121.9	123.6	123.7	124.8	115.9	121.3	121.5	122.3	123.8	123.4	124.4
Nonalcoholic beverages	347.7	374.3	375.4	378.5	384.5	387.1	390.3	347.8	370.7	372.3	375.6	383.0	384.4	389.2
Cola drinks, excluding diet cola	234.8	247.5	247.2	249.5	255.9	259.3	261.7	234.1	243.6	243.4	246.5	253.6	255.4	260.1
Carbonated drinks, including diet cola (12/77=100)	114.5	118.4	118.7	119.9	122.3	123.5	125.6	112.2	115.6	116.4	116.4	120.2	121.1	123.4
Roasted coffee	343.6	438.1	440.7	443.2	439.6	437.6	434.0	344.3	430.8	435.3	440.1	436.8	432.3	430.4
Freeze dried and instant coffee	330.8	370.2	374.3	378.2	382.2	381.7	380.2	329.4	369.3	372.9	376.8	380.4	380.3	379.2
Other noncarbonated drinks (12/77=100)	113.3	115.7	116.3	116.8	118.3	118.6	120.7	112.7	114.8	115.5	116.2	117.5	118.1	119.6
Other prepared foods	204.7	215.3	217.4	218.8	221.8	224.1	226.6	204.5	215.7	217.2	219.1	221.7	224.0	226.6
Canned and packaged soup (12/77=100)	110.2	114.3	115.9	116.5	118.1	118.0	120.5	110.3	114.8	116.3	116.8	117.9	117.6	120.6
Frozen prepared foods (12/77=100)	115.9	124.5	125.6	126.0	126.6	128.2	130.4	115.0	122.9	123.9	125.1	125.5	127.1	128.8
Snacks (12/77=100)	112.6	120.4	121.3	121.8	123.4	124.1	124.8	113.0	121.7	122.2	122.8	124.7	125.3	126.0
Seasonings, olives, pickles, and relish (12/77=100)	114.2	118.9	120.1	121.4	123.6	124.9	125.2	113.4	118.2	119.0	121.1	123.1	124.0	124.5
Other condiments (12/77=100)	112.2	116.8	119.5	120.8	123.7	126.0	127.1	113.0	118.5	120.2	121.4	124.6	126.6	128.1
Miscellaneous prepared foods (12/77=100)	112.8	119.0	118.9	119.6	122.2	124.4	124.4	112.7	118.6	118.7	119.7	120.5	122.2	123.7
Other canned and packaged prepared foods (12/77=100)	114.1	117.7	118.6	119.4	121.2	122.2	123.1	113.6	118.0	118.6	119.5	120.3	122.0	123.3
Food away from home	238.4	251.3	253.4	256.1	258.3	260.9	263.0	240.4	252.7	255.1	258.0	260.1	262.7	265.3
Lunch (12/77=100)	116.4	122.3	123.3	124.6	125.9	127.0	127.9	117.6	123.2	124.0	125.7	126.7	127.6	128.9
Dinner (12/77=100)	115.3	122.4	123.4	124.8	125.8	127.0	127.9	115.9	123.0	124.2	125.6	126.8	128.1	129.1
Other meals and snacks (12/77=100)	115.0	120.2	121.4	122.5	123.2	124.9	126.4	116.2	120.9	122.5	123.7	124.4	126.2	127.7
Alcoholic beverages	170.2	177.4	178.0	179.3	180.4	181.7	183.9	170.6	178.0	178.7	179.7	181.1	182.8	185.0
Alcoholic beverages at home (12/77=100)	110.6	115.6	116.0	116.8	117.4	118.2	119.9	111.6	116.5	117.0	117.6	118.3	119.3	120.8
Beer and ale	167.7	176.9	177.8	179.0	179.9	182.0	185.9	168.0	176.9	177.6	178.8	179.9	181.7	185.1
Whiskey	125.4	130.7	130.8	131.6	132.6	132.8	133.4	126.8	131.9	132.0	132.9	133.8	134.4	134.6
Wine	190.7	198.1	199.1	201.6	202.5	204.1	206.6	194.1	201.5	204.0	203.8	206.1	208.4	209.8
Other alcoholic beverages (12/77=100)	105.0	107.0	106.9	107.1	107.3	107.4	108.2	104.6	106.2	106.4	106.4	106.7	107.2	107.8
Alcoholic beverages away from home (12/77=100)	112.8	116.4	116.8	118.0	119.2	120.0	120.5	110.2	114.9	115.2	115.9	117.6	119.1	120.5
HOUSING	219.8	240.8	243.6	247.3	250.5	254.5	257.9	219.7	240.7	243.6	247.3	250.5	254.4	257.8
Shelter	230.7	255.9	259.4	264.0	267.2	271.6	276.0	231.2	256.9	260.4	265.1	268.3	272.7	277.2
Rent, residential	172.0	182.1	182.9	184.1	185.6	186.6	187.0	171.9	181.9	182.7	183.9	185.5	186.4	186.9
Other rental costs	228.3	243.1	244.9	251.1	255.7	258.6	260.7	228.0	242.6	244.4	251.1	255.6	258.6	260.5
Lodging while out of town	239.7	256.2	258.4	267.0	272.8	276.8	279.3	238.7	254.6	256.9	266.1	271.6	275.7	278.0
Tenants' insurance (12/77=100)	107.1	114.6	115.1	116.2	117.8	118.6	119.9	107.1	115.0	115.5	116.8	118.5	119.3	120.1
Homeownership	251.7	282.4	286.9	292.5	296.3	302.0	307.7	252.7	284.1	288.7	294.6	298.4	304.0	310.0
Home purchase	215.4	237.3	239.9	242.1	243.0	244.0	246.5	215.4	237.7	240.2	242.3	243.0	243.8	246.5
Financing, taxes, and insurance	292.1	340.1	348.3	359.8	367.7	379.9	390.6	294.0	343.5	351.6	363.4	371.6	384.1	395.3
Property insurance	303.2	320.8	323.1	327.7	333.7	335.7	338.9	303.2	322.6	324.5	328.8	335.2	337.4	340.4
Property taxes	181.1	185.1	186.0	186.7	188.2	188.2	188.4	182.6	186.6	187.4	188.2	189.9	189.9	190.1
Contracted mortgage interest cost	350.8	423.1	435.3	452.8	464.0	483.0	499.4	351.1	424.2	436.1	453.7	465.0	484.1	500.9
Mortgage interest rates	160.2	175.4	178.3	183.7	187.5	194.4	199.4	160.3	175.6	178.4	183.8	187.8	194.8	199.8
Maintenance and repairs	250.6	266.4	268.3	270.6	273.7	278.8	282.9	251.7	266.5	268.9	271.9	274.4	278.2	281.7
Maintenance and repair services	271.5	288.8	290.4	293.2	297.1	303.2	307.9	273.8	290.3	292.8	295.9	299.3	303.5	307.7
Maintenance and repair commodities	201.8	214.0	216.6	217.6	218.9	221.4	224.3	202.6	213.6	215.8	218.4	219.5	222.3	224.3
Paint and wallpaper, supplies, tools, and equipment (12/77=100)	110.5	118.8	121.6	122.5	123.5	125.0	126.6	111.3	118.1	120.3	122.2	122.3	123.6	126.0
Lumber, awnings, glass, and masonry (12/77=100)	110.4	115.5	115.4	115.9	115.8	117.6	118.8	111.3	117.2	118.1	118.6	119.3	119.9	119.7
Plumbing, electrical, heating, and cooling supplies (12/77=100)	106.8	113.4	114.7	114.7	115.3	116.4	119.1	108.0	114.0	114.5	117.0	117.9	119.3	120.0
Miscellaneous supplies and equipment (12/77=100)	109.5	113.8	114.3	115.4	116.4	117.0	118.2	107.8	112.2	112.3	113.2	114.5	118.2	119.4
Fuel and other utilities	227.5	252.0	255.1	258.6	263.8	268.0	270.5	227.8	252.4	255.7	259.2	264.4	268.7	271.0
Fuels	266.8	307.0	311.8	318.0	327.1	333.9	337.8	266.7	306.9	311.8	318.1	327.0	333.9	337.6
Fuel oil, coal, and bottled gas	349.8	477.4	488.0	514.0	539.1	553.4	556.4	350.3	478.2	489.0	515.1	540.3	554.1	557.1
Fuel oil	358.5	497.2	507.3	534.4	561.9	577.9	580.7	359.1	497.7	508.1	534.9	562.5	577.9	580.7
Other fuels (6/78=100)	99.5	121.7	126.0	132.7	136.6	138.3	139.6	99.4	122.2	126.6	133.7	137.9	139.5	140.8
Gas (piped) and electricity	245.3	267.3	270.8	273.0	278.8	284.0	288.0	245.1	267.1	270.7	273.0	278.5	283.9	287.6
Electricity	210.4	221.5	224.7	226.6	233.8	237.9	241.5	210.7	221.5	224.9	226.8	233.9	238.1	241.5
Utility (piped) gas	286.3	328.9	332.6	335.1	336.8	343.9	347.9	284.8	327.8	331.1	333.8	335.4	342.6	346.4

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)						
	1979			1980				1979			1980			
	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
HOUSING—Continued														
Fuel and other utilities—Continued														
Other utilities and public services	158.8	161.0	161.9	161.5	161.3	161.9	162.3	158.9	160.9	161.8	161.5	161.4	161.9	162.3
Telephone services	132.1	133.3	134.3	133.4	132.8	133.2	133.4	132.1	133.3	134.2	133.4	132.8	133.1	133.2
Local charges (12/77 = 100)	100.4	101.8	103.2	102.6	102.7	103.3	103.5	100.5	101.8	103.2	102.6	102.7	103.2	103.3
Interstate toll calls (12/77 = 100)	98.3	98.4	98.4	97.7	97.4	97.4	97.3	98.3	98.4	98.4	97.7	97.5	97.5	97.4
Intrastate toll calls (12/77 = 100)	100.7	101.5	101.5	100.8	98.8	98.7	99.0	100.6	101.3	101.3	100.6	98.7	98.6	98.9
Water and sewerage maintenance	240.2	247.1	247.2	250.0	252.3	253.9	255.2	240.7	247.2	247.3	250.5	253.0	254.7	256.2
Household furnishings and operations	188.6	195.1	195.8	196.9	199.0	201.3	203.0	187.3	193.2	193.9	194.9	196.8	199.2	200.7
Housefurnishings	162.4	166.6	166.9	167.6	169.3	171.5	172.7	161.9	165.5	165.9	166.5	167.9	170.4	171.5
Textile housefurnishings	173.1	178.9	178.6	176.7	182.9	187.2	188.2	174.1	178.4	177.3	175.3	181.2	185.3	186.3
Household linens (12/77 = 100)	106.2	108.8	108.3	105.4	110.1	113.9	114.8	106.3	108.3	107.2	106.0	109.8	113.2	113.8
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100)	109.7	114.4	114.6	115.1	118.2	119.7	119.9	111.1	114.5	114.4	113.2	116.6	118.2	118.9
Furniture and bedding	176.5	182.2	182.8	184.0	185.2	189.2	190.9	175.8	182.1	182.7	183.6	184.3	187.9	189.4
Bedroom furniture (12/77 = 100)	112.7	117.7	118.3	119.1	120.5	122.5	124.3	111.2	115.9	116.0	116.8	117.5	119.2	120.9
Sofas (12/77 = 100)	106.8	107.9	108.2	108.2	108.5	110.9	111.6	107.0	111.7	111.6	110.6	110.3	112.7	111.8
Living room chairs and tables (12/77 = 100)	103.1	107.7	108.1	108.9	110.0	110.8	110.9	104.8	108.6	109.2	109.4	111.2	111.9	112.6
Other furniture (12/77 = 100)	113.8	116.8	117.1	118.1	118.3	122.6	124.0	112.7	115.3	115.9	117.8	117.5	121.3	123.1
Appliances including TV and sound equipment	135.3	137.5	137.5	137.8	138.3	138.8	139.3	135.2	136.2	136.9	137.2	137.8	139.0	139.7
Television and sound equipment (12/77 = 100)	104.2	105.0	105.3	105.3	105.4	105.7	105.7	103.9	104.4	104.8	104.9	104.9	105.5	105.4
Television	103.0	103.6	103.6	103.7	103.7	104.0	104.0	102.3	102.4	102.2	102.2	102.3	102.9	102.8
Sound equipment (12/77 = 100)	106.3	107.4	107.8	107.8	108.1	108.3	108.3	106.2	107.1	108.0	108.2	108.2	108.7	108.6
Household appliances	154.5	158.2	157.9	158.5	159.4	160.2	161.4	154.7	156.2	157.1	157.7	158.8	160.7	162.3
Refrigerators and home freezer	151.4	156.0	156.7	156.7	156.5	157.9	160.6	155.2	158.1	159.0	159.4	159.7	161.4	163.5
Laundry equipment (12/77 = 100)	108.7	113.1	113.6	114.1	115.0	116.8	117.5	108.5	112.2	112.8	113.8	114.7	116.6	117.8
Other household appliances (12/77 = 100)	109.4	110.8	109.9	110.5	111.3	111.2	111.5	108.4	107.6	108.2	108.6	109.5	110.7	111.6
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100)	110.1	109.7	108.6	110.0	110.8	110.9	110.0	109.5	107.1	108.1	109.2	110.5	111.1	111.6
Office machines, small electric appliances, and air conditioners (12/77 = 100)	108.6	112.1	111.4	111.1	112.0	111.6	113.1	107.2	108.2	108.3	107.8	108.4	110.2	111.6
Other household equipment (12/77 = 100)	109.3	112.4	113.0	114.6	115.9	117.3	118.4	108.5	111.6	111.8	113.3	114.4	116.0	117.0
Floor and window coverings, infants' laundry cleaning and outdoor equipment (12/77 = 100)	109.0	111.1	111.7	113.1	114.5	116.4	118.2	103.9	107.7	107.4	108.9	109.4	110.8	113.1
Clocks, lamps, and decor items (12/77 = 100)	105.6	110.0	110.1	111.6	112.7	114.9	115.6	106.6	108.2	107.3	109.4	109.8	112.3	112.6
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100)	112.8	116.8	117.2	119.9	121.4	122.6	123.4	110.8	115.2	115.2	117.3	118.9	120.8	121.4
Lawn equipment, power tools, and other hardware (12/77 = 100)	107.2	109.0	110.3	110.6	111.7	112.2	113.5	109.4	111.1	112.5	113.0	114.2	115.0	115.9
Housekeeping supplies	219.7	228.3	229.2	231.1	235.0	238.0	240.7	218.1	226.7	227.2	228.8	232.8	235.5	238.1
Soaps and detergents	210.9	220.6	221.2	224.1	228.9	232.1	233.2	209.6	218.2	219.7	222.2	226.5	230.0	231.1
Other laundry and cleaning products (12/77 = 100)	109.1	114.1	114.7	116.1	117.2	117.0	117.6	108.9	113.7	114.5	115.6	117.1	116.9	118.1
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100)	115.9	119.2	120.5	120.6	121.2	123.9	126.2	116.2	119.6	120.9	121.8	123.4	125.8	128.1
Stationery, stationery supplies, and gift wrap (12/77 = 100)	107.4	111.3	111.9	111.6	112.7	113.8	115.6	106.4	109.2	109.3	109.0	112.3	113.6	114.9
Miscellaneous household products (12/77 = 100)	111.2	115.6	116.9	117.7	119.4	120.9	122.0	109.9	114.1	114.7	115.0	116.6	118.3	119.2
Lawn and garden supplies (12/77 = 100)	110.0	113.8	112.5	114.4	119.4	121.4	123.8	106.8	113.2	109.9	111.3	113.3	114.0	116.5
Housekeeping services	244.5	256.6	258.1	260.0	261.6	263.6	266.0	243.1	255.9	257.5	259.2	261.1	262.7	264.3
Postage	257.3	257.3	257.3	257.3	257.3	257.3	257.3	257.2	257.2	257.2	257.2	257.2	257.2	257.3
Moving, storage, freight, household laundry, and drycleaning services (12/77 = 100)	112.6	120.4	121.2	122.9	124.2	125.4	128.3	112.6	121.2	122.3	123.3	124.6	126.1	127.8
Appliance and furniture repair (12/77 = 100)	108.0	112.9	113.4	114.0	114.7	115.8	116.5	107.1	112.9	113.4	114.4	115.5	116.0	116.2
APPAREL AND UPKEEP	165.4	171.7	172.2	171.0	171.9	176.0	177.3	165.4	171.3	171.4	169.8	171.5	175.1	176.1
Apparel commodities	160.2	165.9	166.1	164.3	165.1	169.2	170.2	160.4	165.7	165.7	163.6	165.2	168.7	169.5
Apparel commodities less footwear	157.9	162.9	163.0	161.1	161.8	166.2	167.2	158.0	162.7	162.6	160.2	161.9	165.7	166.3
Men's and boys'	159.6	165.4	165.4	162.8	162.7	165.6	166.9	160.1	165.3	165.0	162.4	162.9	166.0	167.3
Men's (12/77 = 100)	100.8	104.3	104.3	102.6	102.3	104.3	105.0	101.4	104.5	104.2	102.3	102.4	104.4	105.2
Suits, sport coats, and jackets (12/77 = 100)	99.0	101.2	100.9	98.8	98.2	99.9	101.1	96.7	98.7	96.8	94.9	94.4	96.4	97.3
Coats and jackets (12/77 = 100)	94.0	98.1	98.0	95.5	93.6	96.9	96.5	98.1	99.7	99.1	95.6	92.2	96.9	97.0
Furnishings and special clothing (12/77 = 100)	105.4	112.4	112.3	112.2	112.7	115.0	116.6	104.7	110.0	109.9	109.3	111.1	113.2	114.2
Shirts (12/77 = 100)	103.8	109.7	110.5	108.6	109.3	111.9	111.5	105.0	109.4	111.5	108.3	109.4	112.0	111.7
Dungarees, jeans, and trousers (12/77 = 100)	99.8	100.5	100.4	98.2	97.7	98.7	99.4	101.9	104.0	103.4	102.2	102.2	102.7	104.2
Boys' (12/77 = 100)	102.5	106.6	106.6	105.6	106.3	107.5	108.9	101.5	105.6	105.8	104.7	105.9	107.5	108.7
Coats, jackets, sweaters, and shirts (12/77 = 100)	99.1	103.2	102.4	99.3	99.9	102.5	104.4	97.9	103.4	103.1	99.8	101.9	105.0	107.2
Furnishings (12/77 = 100)	106.5	111.5	111.9	111.5	110.9	112.0	113.3	105.5	109.7	110.2	109.7	109.5	110.7	111.6
Suits, trousers, sport coats, and jackets (12/77 = 100)	103.6	107.4	107.8	108.2	109.5	109.8	110.7	102.8	105.8	106.2	106.6	107.7	108.2	108.8
Women's and girls'	152.5	155.1	154.6	151.5	151.1	155.5	155.9	152.1	154.5	153.5	149.9	151.3	154.9	154.7
Women's (12/77 = 100)	101.7	103.0	102.8	100.8	100.8	103.8	103.9	102.1	103.0	102.3	100.1	101.4	103.7	103.3
Coats and jackets	167.2	173.3	170.0	166.4	163.1	167.6	168.3	175.3	172.4	167.9	165.0	162.4	167.0	167.8
Dresses	165.9	164.3	165.3	161.3	160.6	169.3	167.8	160.8	158.8	155.7	150.0	151.2	157.5	154.1
Separates and sportswear (12/77 = 100)	100.0	99.2	98.6	96.1	97.1	99.8	101.1	98.9	100.7	99.5	97.1	99.2	101.0	101.6
Underwear, nightwear, and hosiery (12/77 = 100)	104.6	108.1	108.2	108.6	110.2	111.0	111.5	105.5	108.9	109.3	109.1	110.6	111.5	111.7
Suits (12/77 = 100)	92.3	95.2	95.8	91.0	88.2	91.6	90.4	95.6	97.5	98.1	94.0	96.8	100.2	98.2
Girls' (12/77 = 100)	100.0	103.9	102.8	100.5	98.9	101.8	102.6	97.4	101.7	101.4	97.9	97.3	100.1	101.1
Coats, jackets, dresses, and suits (12/77 = 100)	101.5	102.2	100.3	97.5	95.7	98.9	99.8	98.7	97.5	97.7	91.9	92.6	95.7	96.8
Separates and sportswear (12/77 = 100)	95.6	103.6	102.6	99.9	98.2	100.8	101.4	92.8	104.3	102.9	99.8	98.1	99.8	100.5
Underwear, nightwear, hosiery, and accessories (12/77 = 100)	105.5	107.2	107.3	106.7	105.6	108.4	109.5	103.3	104.2	104.4	104.4	103.5	107.8	108.9

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)							
	1979			1980			1979			1980				
	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
APPAREL AND UPKEEP—Continued														
Apparel commodities—Continued														
Apparel commodities less footwear—Continued														
Infants' and toddlers'	220.7	226.3	227.1	224.9	226.6	231.4	234.3	222.0	228.7	230.5	229.1	232.7	237.3	241.1
Other apparel commodities	166.8	177.8	180.9	184.4	191.4	199.9	201.9	167.8	179.8	182.9	185.5	191.8	197.8	198.5
Sewing materials and notions (12/77 = 100)	101.9	100.8	102.4	103.2	106.3	107.1	107.9	99.0	99.7	100.8	101.2	105.7	107.2	106.9
Jewelry and luggage (12/77 = 100)	110.4	121.0	123.1	126.1	131.2	138.6	140.1	112.8	123.8	126.2	128.4	132.3	137.3	138.1
Footwear	174.2	183.8	184.3	183.7	184.6	187.0	188.3	174.2	183.2	183.8	183.3	183.9	186.3	188.1
Men's (12/77 = 100)	110.8	117.7	117.3	117.8	118.3	119.0	119.7	111.1	119.1	119.4	119.3	119.4	120.9	122.4
Boys' and girls' (12/77 = 100)	108.9	114.0	115.8	117.3	117.9	119.5	119.5	109.3	114.5	114.7	116.9	118.0	119.5	119.5
Womens' (12/77 = 100)	108.0	113.9	113.8	111.6	112.1	114.2	115.6	107.3	111.2	111.8	109.4	109.5	110.9	112.6
Apparel services	201.8	214.2	216.6	220.7	222.9	225.9	230.0	201.1	212.0	213.4	216.9	219.8	223.5	226.0
Laundry and drycleaning other than coin operated (12/77 = 100)	117.6	126.3	127.1	129.3	130.6	132.5	135.5	117.5	125.7	126.6	129.0	130.6	132.3	134.1
Other apparel services (12/77 = 100)	110.4	114.7	117.0	119.6	120.7	122.1	123.3	110.1	113.3	113.7	115.1	116.9	119.6	120.4
TRANSPORTATION	202.9	224.9	227.7	233.5	239.6	243.7	246.8	203.7	225.7	228.3	234.1	240.2	244.3	247.7
Private	203.2	225.0	227.5	233.5	239.8	244.0	247.0	203.7	225.7	228.2	234.1	240.4	244.6	248.0
New cars	164.3	170.6	171.7	173.9	175.3	175.0	177.0	163.9	170.9	171.7	174.1	175.4	175.4	177.7
Used cars	200.0	198.4	198.2	197.2	195.3	195.2	196.7	200.0	198.4	198.3	197.2	195.3	195.2	196.8
Gasoline	234.7	306.9	313.9	334.6	357.6	370.9	374.7	235.4	308.3	315.6	335.9	359.0	372.7	376.3
Automobile maintenance and repair	238.2	250.8	252.6	255.1	258.2	260.9	264.1	238.7	251.1	253.4	256.2	259.2	261.7	264.3
Body work (12/77 = 100)	113.3	121.6	123.3	125.0	126.5	127.3	129.1	114.4	121.7	123.1	124.3	126.1	127.2	128.4
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100)	113.8	120.1	120.6	121.8	123.2	124.1	126.1	114.8	120.8	121.8	123.6	124.8	126.1	127.4
Maintenance and servicing (12/77 = 100)	113.5	118.4	119.2	120.2	121.3	123.1	124.7	113.0	118.2	119.3	120.4	121.3	122.8	124.2
Power plant repair (12/77 = 100)	112.3	118.5	119.2	120.4	122.5	123.5	124.4	112.6	118.6	119.6	120.9	123.1	124.0	124.6
Other private transportation	194.8	205.5	207.5	209.8	212.6	216.5	221.3	195.5	206.3	208.4	210.6	213.6	217.1	223.1
Other private transportation commodities	170.2	183.4	185.6	188.4	191.2	192.7	194.1	171.4	183.9	186.4	188.0	191.7	193.2	195.8
Motor oil, coolant, and other products (12/77 = 100)	109.4	117.4	118.1	120.9	123.9	126.4	129.8	107.3	118.1	119.3	122.4	124.0	126.1	129.1
Automobile parts and equipment (12/77 = 100)	110.1	118.7	120.3	121.9	123.5	124.3	124.8	111.3	119.0	120.6	121.4	123.9	124.7	126.2
Tires	111.7	151.2	161.5	163.8	165.8	168.5	170.1	171.2	153.1	163.0	165.7	166.3	170.6	172.5
Other parts and equipment (12/77 = 100)	111.7	123.0	124.4	126.6	127.3	127.2	127.1	112.6	121.5	122.4	124.0	125.0	124.4	125.1
Other private transportation services	203.3	213.4	215.3	217.6	220.4	225.0	230.6	203.8	214.3	216.3	218.7	221.5	225.7	232.6
Automobile insurance	224.7	233.9	235.3	237.1	240.2	244.0	245.2	224.7	233.9	235.2	236.8	239.7	243.8	244.9
Automobile finance charges (12/77 = 100)	114.1	124.6	127.2	129.9	132.1	137.4	148.6	113.5	124.1	126.5	129.4	131.3	135.2	147.8
Automobile rental, registration, and other fees (12/77 = 100)	105.6	108.3	108.5	109.1	109.8	110.8	111.5	106.4	108.9	109.2	109.8	110.9	111.6	112.2
State registration	144.0	144.1	144.1	144.2	145.2	145.3	146.4	143.9	144.0	144.0	144.1	145.3	145.5	146.5
Drivers' license (12/77 = 100)	104.5	104.5	104.5	104.7	104.8	104.7	104.7	104.3	104.2	104.2	104.5	104.5	104.4	104.4
Vehicle inspection (12/77 = 100)	112.0	115.6	117.5	117.5	119.0	119.7	119.7	112.8	116.5	118.3	118.3	119.7	120.2	120.3
Other vehicle related fees (12/77 = 100)	110.9	117.1	117.6	118.8	119.6	122.0	122.7	114.8	121.3	122.2	123.8	125.4	127.0	127.8
Public	192.6	216.5	223.0	226.8	229.5	232.1	235.9	193.6	214.0	219.1	221.9	223.9	226.1	229.7
Airline fare	192.5	232.1	245.5	251.1	255.4	259.9	264.3	192.1	232.4	245.8	251.0	255.2	259.3	263.9
Intercity bus fare	249.2	279.8	282.2	284.7	288.5	290.7	291.5	248.5	279.9	282.3	284.8	288.2	290.2	291.0
Intracity mass transit	187.8	196.6	196.4	198.5	199.7	200.8	203.0	187.9	195.1	195.7	196.7	197.6	198.6	200.8
Taxi fare	215.0	237.0	238.5	243.1	244.0	245.6	246.4	220.7	242.4	243.9	248.9	249.3	251.2	261.6
Intercity train fare	205.0	231.0	236.3	237.2	237.2	237.2	237.3	205.0	232.1	236.6	237.1	237.0	237.1	237.2
MEDICAL CARE	235.1	248.0	250.7	253.9	257.9	260.2	262.0	235.2	249.1	251.7	254.9	258.7	260.9	263.1
Medical care commodities	151.6	157.8	159.2	160.5	162.1	163.5	164.9	152.5	158.5	159.9	161.0	162.7	164.4	166.0
Prescription drugs	140.0	145.5	146.4	147.9	149.8	150.9	152.2	140.8	146.2	147.4	148.8	150.7	152.0	153.5
Anti-infective drugs (12/77 = 100)	110.2	113.9	114.6	115.8	117.2	117.9	118.5	111.0	115.5	116.8	118.2	119.8	120.1	120.4
Tranquilizers and sedatives (12/77 = 100)	112.6	117.1	118.4	119.9	121.3	122.2	122.9	113.1	116.9	118.3	119.7	121.0	122.2	122.7
Circulatories and diuretics (12/77 = 100)	107.5	111.0	111.4	112.4	113.4	113.3	114.2	108.5	111.6	112.3	113.0	114.2	114.7	115.9
Hormones, diabetic drugs, biologicals, and prescription and supplies (12/77 = 100)	117.3	123.2	123.8	126.0	128.7	130.0	131.3	117.3	122.6	123.1	124.8	127.8	129.6	131.3
Pain and symptom control drugs (12/77 = 100)	111.2	116.8	117.8	118.8	119.7	120.5	121.4	112.0	117.5	118.2	119.0	120.1	121.3	122.6
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100)	108.5	111.9	112.1	112.6	113.7	115.5	117.1	109.6	112.8	113.7	114.2	115.2	116.5	118.5
Nonprescription drugs and medical supplies (12/77 = 100)	108.8	113.4	114.6	115.3	116.3	117.3	118.4	109.6	114.0	115.1	115.6	116.6	118.0	119.2
Eyeglasses (12/77 = 100)	106.2	110.9	110.9	111.5	112.9	114.1	115.0	106.5	110.4	110.5	111.4	112.6	114.5	115.3
Internal and respiratory over-the-counter drugs	168.1	175.4	177.9	179.1	180.4	182.2	184.4	169.4	176.6	178.5	179.0	180.8	183.0	185.4
Nonprescription medical equipment and supplies (12/77 = 100)	107.6	111.8	113.1	113.8	114.6	115.1	115.3	108.7	112.7	114.2	115.0	115.6	116.1	116.3
Medical care services	253.1	267.6	270.7	274.4	279.0	281.5	283.4	252.9	268.8	271.8	275.6	279.8	282.2	284.5
Professional services	222.9	233.0	235.9	238.9	242.9	245.3	248.2	224.2	235.9	238.3	241.7	245.5	247.8	251.2
Physicians' services	239.1	250.8	252.5	256.0	260.2	262.3	264.8	240.0	255.5	256.5	260.3	264.1	266.2	269.7
Dental services	211.4	220.7	224.5	227.4	231.5	234.1	237.2	213.7	222.7	226.1	229.5	233.4	235.7	238.9
Other professional services (12/77 = 100)	109.4	112.8	115.1	116.6	118.1	119.5	121.7	109.1	112.2	114.6	115.9	117.4	119.3	121.1
Other medical care services	289.6	309.5	312.8	317.4	322.7	325.3	325.8	287.8	309.3	313.0	317.3	322.1	324.4	325.3
Hospital and other medical services (12/77 = 100)	115.2	122.6	123.8	125.6	127.8	128.8	129.7	114.3	121.8	123.2	124.9	126.8	127.7	128.6
Hospital room	362.4	385.1	389.4	395.3	403.4	405.8	408.0	360.2	383.6	388.7	393.9	398.8	401.2	403.6
Other hospital and medical care services	114.5	122.0	122.9	124.7	126.5	127.8	128.8	113.4	120.8	122.1	123.8	125.9	126.9	128.0

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)							
	1979			1980			1979			1980				
	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
ENTERTAINMENT	186.5	192.8	193.4	195.3	197.8	200.6	202.5	185.5	192.0	192.3	193.9	196.2	199.5	201.3
Entertainment commodities	187.4	194.0	195.2	197.6	200.4	203.4	205.7	185.7	191.3	192.4	194.2	196.9	200.3	202.8
Reading materials (12/77 = 100)	109.5	114.5	115.1	116.7	117.4	119.4	120.1	109.2	114.2	114.8	116.2	117.0	119.1	119.7
Newspapers	211.5	222.4	223.5	226.8	227.7	232.4	234.8	211.1	222.2	223.3	226.4	227.3	232.0	234.3
Magazines, periodicals, and books (12/77 = 100)	111.7	116.0	116.8	118.1	119.2	120.8	120.8	111.6	115.8	116.6	117.8	118.9	120.7	120.6
Sporting goods and equipment (12/77 = 100)	108.6	111.7	112.2	113.8	115.9	117.2	118.7	105.4	106.9	107.7	108.6	110.8	112.4	114.1
Sport vehicles (12/77 = 100)	110.1	.....	112.9	.....	117.4	118.7	120.6	105.7	.....	105.8	.....	109.1	110.8	113.0
Indoor and warm weather sport equipment (12/77 = 100)	105.3	107.8	107.5	107.6	108.3	109.5	111.3	102.9	106.1	106.3	106.4	107.8	109.3	110.5
Bicycles	158.0	167.1	167.1	170.5	174.5	177.2	178.6	157.2	167.4	167.0	170.5	174.9	177.8	179.8
Other sporting goods and equipment (12/77 = 100)	105.7	110.3	111.0	111.8	112.4	112.9	113.1	104.1	110.2	111.3	111.9	112.6	113.4	114.0
Toys, hobbies, and other entertainment (12/77 = 100)	107.6	111.2	112.1	113.2	115.1	116.9	118.4	107.7	111.2	111.8	112.6	114.3	116.4	118.0
Toys, hobbies, and music equipment (12/77 = 100)	108.6	110.5	111.2	112.1	114.1	115.7	117.3	108.4	109.8	109.9	110.9	112.3	114.9	116.5
Photographic supplies and equipment (12/77 = 100)	106.5	109.9	109.7	110.8	114.1	118.2	120.1	106.2	109.6	110.1	111.2	114.2	116.9	118.9
Pet supplies and expense (12/77 = 100)	106.8	113.5	115.5	116.8	117.6	118.2	119.2	107.5	114.6	116.1	116.7	117.9	119.0	120.0
Entertainment services	185.4	191.5	191.1	192.5	194.5	197.0	198.5	186.1	194.3	193.0	194.4	196.0	199.1	199.9
Fees for participant sports (12/77 = 100)	109.5	113.8	113.8	114.6	116.0	117.5	119.0	109.4	115.2	115.0	115.6	116.3	118.8	119.3
Admissions (12/77 = 100)	112.8	116.1	116.6	117.9	118.3	119.1	118.7	112.8	117.3	117.8	119.4	119.7	120.0	120.1
Other entertainment services (12/77 = 100)	107.6	110.0	108.6	109.1	111.4	113.2	114.8	108.4	112.0	109.0	109.3	111.8	113.9	115.1
OTHER GOODS AND SERVICES	193.2	202.9	204.0	206.3	208.1	208.9	209.8	193.1	202.0	203.0	206.0	207.7	208.3	209.2
Tobacco products	186.1	191.5	192.1	196.7	198.1	198.4	198.8	186.1	191.4	192.1	197.1	198.3	198.6	198.9
Cigarettes	188.6	194.0	194.7	199.7	200.9	201.2	201.4	188.8	194.1	194.8	200.3	201.3	201.6	201.6
Other tobacco products and smoking accessories (12/77 = 100)	109.5	112.8	113.2	113.9	115.6	116.3	117.6	108.8	112.4	112.7	113.4	114.8	115.7	117.2
Personal care	192.7	200.9	203.0	204.2	206.5	208.1	209.7	192.3	200.5	202.3	204.4	206.6	207.7	209.5
Toilet goods and personal care appliances	185.8	193.1	195.8	196.4	198.6	200.2	201.8	186.2	192.4	194.5	196.2	198.3	199.6	201.8
Products for the hair, hairpieces and wigs (12/77 = 100)	106.4	112.2	113.0	114.2	116.1	116.6	117.9	105.3	111.4	112.4	114.0	114.9	114.9	117.9
Dental and shaving products (12/77 = 100)	110.6	115.6	117.3	117.8	118.6	119.2	120.5	109.7	113.9	114.7	115.3	116.8	118.4	119.3
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100)	107.6	111.4	113.0	112.9	114.2	115.1	115.7	108.5	110.2	112.1	112.9	114.0	114.8	115.2
Other toilet goods and small personal care appliances (12/77 = 100)	107.5	109.9	112.1	112.1	112.9	114.7	115.4	109.7	112.3	113.1	114.0	115.6	116.6	117.2
Personal care services	199.4	208.5	210.0	211.6	214.2	215.7	217.2	198.5	208.6	210.2	212.7	215.0	215.8	217.2
Beauty parlor services for women	201.1	210.3	212.1	213.3	216.1	217.9	218.6	200.8	210.2	212.0	214.2	216.6	217.8	218.6
Haircuts and other barber shop services for men (12/77 = 100)	111.1	116.1	116.8	118.1	119.3	119.7	121.7	110.0	116.3	117.1	118.8	120.0	120.1	121.5
Personal and educational expenses	208.4	224.2	224.6	226.3	228.0	228.3	228.7	208.8	224.4	224.8	226.2	227.8	228.2	228.7
School books and supplies	191.6	202.3	202.5	206.0	206.5	206.9	207.1	194.2	205.9	206.0	209.8	210.4	210.7	210.9
Personal and educational services	212.8	229.6	229.9	231.4	233.3	233.6	234.0	212.8	229.3	229.7	230.6	232.5	232.9	233.4
Tuition and other school fees	108.7	118.1	118.1	118.3	118.5	118.6	118.6	108.6	118.2	118.2	118.4	118.6	118.7	118.7
College tuition (12/77 = 100)	108.9	117.3	117.3	117.6	117.8	117.9	117.9	108.9	117.3	117.3	117.6	117.8	117.9	117.9
Elementary and high school tuition (12/77 = 100)	107.5	120.9	120.9	120.9	120.9	120.9	120.9	107.4	120.7	120.7	120.7	120.7	120.7	120.7
Personal expenses (12/77 = 100)	111.0	116.3	117.3	120.1	124.4	125.0	126.1	111.1	115.5	116.3	117.7	121.4	122.1	123.3
Special indexes:														
Gasoline, motor oil, coolant, and other products	232.5	302.9	309.7	329.9	352.5	365.5	369.3	233.0	304.3	311.4	331.3	353.8	367.2	370.8
Insurance and finance	260.5	296.0	302.1	310.5	316.7	326.3	335.2	260.5	295.8	301.6	310.0	316.2	325.6	335.2
Utilities and public transportation	205.8	220.5	223.5	225.0	227.9	230.9	233.4	206.2	220.3	223.0	224.4	227.2	230.2	232.6
Housekeeping and home maintenance services	265.4	280.6	282.2	284.7	287.6	292.0	295.7	266.0	281.3	283.4	286.0	288.7	292.0	295.1

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)		
	1979			1980			1979			1980		
	Dec.	Feb.	Apr.	Dec.	Feb.	Apr.	Dec.	Feb.	Apr.	Dec.	Feb.	Apr.
Northeast												
EXPENDITURE CATEGORY												
All items	119.0	122.1	125.0	122.2	125.6	129.0	125.7	129.1	132.7	121.8	124.2	127.4
Food and beverages	120.6	122.1	124.5	121.9	124.3	127.1	123.2	126.0	128.8	121.2	123.4	125.2
Housing	119.8	122.9	126.1	123.7	126.7	130.0	132.1	135.5	140.2	123.2	124.8	127.9
Apparel and upkeep	108.9	109.5	112.5	109.0	107.1	111.1	1,8.5	107.3	112.7	109.8	106.8	113.0
Transportation	123.7	129.9	133.8	127.6	135.0	140.8	127.0	133.1	136.2	127.3	133.5	138.1
Medical care	117.3	120.6	122.4	120.0	121.6	122.4	118.9	121.3	122.5	119.0	121.4	122.7
Entertainment	111.5	114.4	116.7	113.5	115.7	117.9	109.8	112.2	115.7	115.1	118.9	121.5
Other goods and services	112.7	114.4	114.7	114.3	116.5	117.5	116.3	119.2	119.6	113.1	114.8	116.0
COMMODITY AND SERVICE GROUP												
Commodities	120.5	124.1	126.5	123.7	127.5	130.8	125.1	128.5	131.6	122.5	125.6	128.0
Commodities less food and beverages	120.4	125.3	127.8	124.6	129.1	132.5	126.0	129.7	132.9	123.2	126.6	129.3
Services	117.2	119.5	122.9	119.9	122.5	126.3	126.6	129.9	134.5	120.7	122.2	126.5
North Central												
EXPENDITURE CATEGORY												
All items	126.3	129.6	133.2	124.6	127.2	130.9	123.7	126.4	128.9	123.0	125.8	128.7
Food and beverages	123.2	124.9	126.8	120.2	122.6	124.9	123.4	124.8	127.0	124.8	126.9	128.9
Housing	133.1	136.7	141.1	129.3	131.5	135.8	125.9	127.6	130.4	123.6	125.9	129.1
Apparel and upkeep	105.6	105.2	109.2	110.9	107.1	111.2	109.0	109.0	110.7	111.9	110.4	113.6
Transportation	127.9	133.5	138.1	127.5	133.4	137.6	129.1	135.8	139.3	127.3	132.6	137.4
Medical care	119.6	123.2	125.3	119.3	122.2	125.0	119.7	124.5	125.7	121.8	126.8	127.4
Entertainment	113.9	116.9	118.9	111.0	111.5	114.0	114.4	116.2	118.7	113.8	115.9	116.1
Other goods and services	113.6	115.4	116.2	117.7	119.4	121.5	114.0	115.5	116.7	116.1	119.1	119.8
COMMODITY AND SERVICE GROUP												
Commodities	125.4	128.1	130.9	122.5	124.5	127.9	123.7	125.9	128.1	122.5	124.3	126.0
Commodities less food and beverages	126.4	129.6	132.8	123.5	125.2	129.2	123.6	126.4	128.5	121.6	123.1	124.8
Services	127.7	131.8	136.6	128.0	131.6	135.6	124.1	127.1	130.3	123.8	128.2	132.9
South												
EXPENDITURE CATEGORY												
All items	123.1	127.1	130.7	124.6	128.0	131.7	14.3	127.9	131.3	122.5	125.9	128.3
Food and beverages	123.5	125.0	126.4	122.9	124.4	127.0	123.9	126.0	127.8	122.5	124.0	126.2
Housing	125.0	129.1	133.9	128.4	131.9	136.7	128.4	131.8	136.6	123.9	127.7	129.7
Apparel and upkeep	112.2	112.5	116.4	110.3	109.6	112.9	105.7	105.5	108.2	104.8	100.9	104.7
Transportation	127.6	135.7	139.7	127.8	134.7	138.4	126.4	133.7	137.2	126.3	133.1	136.5
Medical care	117.7	119.7	121.9	118.3	121.6	123.3	120.7	124.8	126.4	124.9	129.0	131.2
Entertainment	109.5	114.5	115.7	113.9	115.4	119.8	113.8	115.9	118.3	119.4	121.6	124.4
Other goods and services	115.8	118.5	119.3	115.1	117.7	118.1	115.5	117.5	118.8	118.3	121.5	121.9
COMMODITY AND SERVICE GROUP												
Commodities	122.6	126.7	129.3	123.1	125.9	129.0	122.7	126.4	128.7	121.9	124.7	127.2
Commodities less food and beverages	122.2	127.5	130.6	123.2	126.6	129.8	122.2	126.5	129.1	121.6	125.0	127.7
Services	123.8	127.7	132.6	126.8	131.1	135.8	126.7	130.2	135.3	123.5	127.7	129.8
West												
EXPENDITURE CATEGORY												
All items	124.8	129.6	132.8	126.6	130.6	134.1	124.5	128.1	131.4	124.3	127.1	130.4
Food and beverages	123.4	124.2	126.5	125.8	126.9	128.8	122.9	123.8	125.7	123.7	125.7	128.0
Housing	127.0	132.9	136.3	130.2	134.6	139.1	127.8	131.0	134.8	125.4	127.1	129.7
Apparel and upkeep	110.0	113.6	115.7	111.5	112.4	115.8	104.4	104.2	107.7	114.9	114.7	121.8
Transportation	129.9	137.4	141.2	128.8	135.8	139.2	129.0	137.1	141.2	128.2	134.8	139.6
Medical care	121.9	125.6	128.8	121.3	124.8	126.9	119.9	124.6	126.7	122.7	126.2	128.9
Entertainment	111.1	113.5	117.8	115.9	118.6	123.1	114.9	117.8	121.0	119.2	123.6	127.5
Other goods and services	115.5	119.2	121.2	116.5	120.3	121.5	113.6	116.3	117.7	116.4	119.7	122.5
COMMODITY AND SERVICE GROUP												
Commodities	123.1	127.0	129.5	125.3	128.8	131.5	123.6	126.7	129.0	123.0	126.7	129.8
Commodities less food and beverage	123.0	128.1	130.8	125.1	129.6	132.7	123.8	127.8	130.4	122.7	127.2	130.6
Services	126.9	133.2	137.2	128.4	133.0	137.7	125.9	130.0	134.8	126.3	127.6	131.2

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

[1967=100 unless otherwise specified]

Area ¹	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1979			1980				1979			1980			
	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
U.S. city average ²	211.5	227.5	229.9	233.2	236.4	239.8	242.5	211.8	227.6	230.0	233.3	236.5	239.9	242.6
Anchorage, Alaska (10/67=100)	...	213.7	...	218.2	...	223.5	...	...	211.8	...	215.9	...	220.2	...
Atlanta, Ga.	206.7	...	223.3	...	230.3	...	235.3	208.3	...	227.0	...	233.5	...	239.3
Baltimore, Md.	...	227.2	...	234.4	...	245.0	...	...	227.9	...	234.5	...	243.9	...
Boston, Mass.	...	222.7	...	227.3	...	234.2	...	...	222.5	...	226.9	...	234.2	...
Buffalo, N.Y.	206.6	...	221.2	...	227.9	...	233.7	207.2	...	220.7	...	227.9	...	233.3
Chicago, Ill.-Northwestern Ind.	208.7	225.9	228.4	230.3	232.7	235.5	240.1	208.1	225.6	227.8	229.9	232.5	235.2	239.8
Cincinnati, Ohio-Ky.-Ind.	...	233.4	...	239.5	...	247.8	...	...	235.6	...	241.0	...	249.7	...
Cleveland, Ohio	215.1	...	232.5	...	243.5	...	247.3	216.1	...	233.2	...	244.1	...	248.4
Dallas-Ft. Worth, Tex.	211.0	...	234.1	...	241.7	...	251.4	211.4	...	233.3	...	240.9	...	249.6
Denver-Boulder, Colo.	...	245.9	...	247.3	...	255.2	...	...	248.6	...	250.9	...	259.4	...
Detroit, Mich.	213.2	231.3	233.2	237.2	240.4	242.9	248.2	213.3	230.8	232.2	236.4	239.9	242.4	248.0
Honolulu, Hawaii	200.7	...	214.8	...	220.9	...	227.4	200.0	...	215.5	...	221.3	...	228.4
Houston, Tex.	228.1	...	248.7	...	255.9	...	260.8	227.7	...	246.0	...	251.9	...	257.3
Kansas City, Mo.-Kansas	211.5	...	233.7	...	238.7	...	243.8	211.0	...	232.4	...	236.6	...	242.2
Los Angeles-Long Beach, Anaheim, Calif.	207.8	224.2	228.0	232.6	237.6	241.3	244.6	208.8	225.8	229.9	235.0	240.0	243.9	247.8
Miami, Fla. (11/77=100)	...	119.4	...	123.3	...	127.7	...	...	120.5	...	124.9	...	128.8	...
Milwaukee, Wis.	...	229.8	...	236.4	...	242.7	...	...	232.5	...	240.8	...	247.8	...
Minneapolis-St. Paul, Minn.-Wis.	215.9	...	234.0	...	237.9	...	244.3	216.0	...	234.8	...	239.6	...	245.7
New York, N.Y.-Northeastern N.J.	208.3	221.3	222.9	226.1	228.0	231.2	233.1	208.1	220.7	222.4	225.5	227.7	230.8	232.4
Northeast, Pa. (Scranton)	...	220.0	...	224.4	...	229.0	...	...	221.1	...	225.8	...	231.3	...
Philadelphia, Pa.-N.J.	207.7	222.4	223.7	227.2	231.1	234.6	237.4	209.1	223.8	224.6	228.0	231.6	235.1	237.9
Pittsburgh, Pa.	212.0	...	229.2	...	235.5	...	240.9	212.3	...	229.7	...	235.9	...	242.2
Portland, Oreg.-Wash.	...	236.6	...	244.6	...	253.6	...	...	236.7	...	243.5	...	251.7	...
St. Louis, Mo.-Ill.	...	225.7	...	232.7	...	238.1	...	...	226.3	...	233.5	...	238.5	...
San Diego, Calif.	...	247.8	...	254.0	...	258.3	...	...	244.8	...	251.0	...	255.6	...
San Francisco-Oakland, Calif.	208.8	...	230.2	...	240.7	...	243.5	209.3	...	229.0	...	240.0	...	242.8
Seattle-Everett, Wash.	...	227.6	...	236.0	...	243.8	...	...	225.5	...	233.8	...	241.3	...
Washington, D.C.-Md.-Va.	...	225.4	...	231.9	...	238.8	...	...	226.7	...	233.0	...	239.2	...

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

²Average of 85 cities.

26. Producer Price Indexes, by stage of processing

[1967=100]

Commodity grouping	Annual average 1978	1979								1980				
		May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. ¹	Feb.	Mar.	Apr.	May
FINISHED GOODS														
Finished goods	194.6	212.7	213.7	216.2	217.3	220.7	224.2	226.3	228.1	232.4	235.4	238.2	240.0	241.0
Finished consumer goods	192.6	211.6	212.7	215.6	217.5	221.7	224.7	227.1	229.1	233.5	237.3	240.6	241.6	242.8
Finished consumer foods	206.7	226.6	223.6	224.9	223.5	228.1	226.7	230.5	232.1	231.4	231.6	233.0	228.7	230.0
Crude	215.5	226.7	227.1	224.9	231.7	214.0	215.5	228.1	227.9	226.0	220.0	230.8	222.2	227.7
Processed	204.1	224.4	221.3	222.8	220.7	227.0	225.5	228.6	230.3	229.7	230.4	231.0	227.1	228.1
Other nondurable goods	195.4	217.1	221.7	227.1	233.4	239.0	243.3	245.5	247.9	254.7	263.0	270.8	276.5	279.1
Durable goods	165.8	179.5	180.4	181.6	181.6	182.9	189.0	190.0	191.8	199.1	200.7	199.7	200.3	199.7
Capital equipment	199.1	215.1	215.8	217.2	216.5	217.8	222.8	223.9	225.3	229.3	230.3	231.8	235.8	236.0
INTERMEDIATE MATERIALS														
Intermediate materials, supplies, and components	215.5	238.2	240.3	244.6	247.5	251.0	255.0	256.3	258.7	265.9	271.1	273.2	274.5	275.8
Materials and components for manufacturing	208.3	230.9	232.1	236.0	238.0	240.7	244.3	245.5	247.8	255.5	259.2	259.0	259.7	261.8
Materials for food manufacturing	202.3	222.5	222.3	226.7	225.1	228.9	225.5	227.8	230.4	226.0	245.1	239.8	238.7	255.4
Materials for nondurable manufacturing	195.8	216.7	218.1	222.5	225.3	227.6	231.4	233.4	235.3	241.1	243.3	246.6	251.8	254.9
Materials for durable manufacturing	237.2	267.2	268.9	273.3	275.2	278.8	284.7	284.6	287.8	303.7	305.9	301.1	296.2	295.1
Components for manufacturing	189.1	204.5	205.3	207.7	209.3	211.3	213.2	214.8	216.3	219.2	222.7	225.2	227.4	228.0
Materials and components for construction	224.4	245.2	245.6	247.4	249.2	252.5	254.7	254.0	253.7	257.7	261.6	265.1	265.3	265.3
Processed fuels and lubricants	296.4	336.8	349.5	364.8	384.6	399.4	410.6	416.5	424.6	444.0	464.3	481.1	486.7	488.3
Manufacturing industries	270.4	287.4	293.8	304.0	311.2	317.2	322.5	325.2	332.2	340.5	352.2	357.4	358.4	363.6
Nonmanufacturing industries	320.0	385.5	404.9	425.5	458.8	483.0	500.6	510.0	519.1	550.3	579.7	608.9	619.5	617.0
Containers	212.5	234.5	234.9	235.4	237.6	237.9	242.6	243.8	247.1	250.9	250.8	253.3	262.5	263.7
Supplies	196.9	213.7	216.1	219.6	219.6	221.2	224.9	226.4	229.2	232.5	238.3	239.9	240.7	240.8
Manufacturing industries	183.6	201.5	202.7	204.2	208.6	209.4	212.2	213.7	216.3	220.9	222.0	223.3	226.8	228.4
Nonmanufacturing industries	204.0	220.3	223.2	227.8	225.4	227.5	231.7	233.3	236.1	238.7	247.0	248.7	248.1	247.5
Manufactured animal feeds	200.2	214.6	226.2	241.3	220.8	224.0	228.9	226.9	230.4	224.4	223.3	219.1	207.1	210.6
Other supplies	201.9	218.3	219.2	221.5	223.1	224.9	228.9	231.2	233.9	238.3	248.6	251.6	253.5	251.9
CRUDE MATERIALS														
Crude materials for further processing	240.1	282.3	283.0	287.1	281.7	288.3	289.5	290.8	296.2	296.8	308.3	303.3	296.9	300.7
Foodstuffs and feedstuffs	215.3	251.9	248.2	254.1	243.7	248.7	247.5	246.4	249.7	243.0	252.6	245.9	235.5	242.4
Nonfood materials	286.7	339.6	348.7	349.3	353.6	363.1	368.9	374.9	384.2	398.9	413.9	412.2	413.5	410.4
Nonfood materials except fuel	235.4	276.6	286.6	285.2	286.1	293.3	298.1	304.6	311.6	330.1	341.5	339.4	336.9	329.2
Manufacturing industries	240.8	284.7	295.9	294.0	294.9	302.8	307.8	314.9	322.5	342.1	354.7	352.1	349.0	340.2
Construction	185.7	204.5	205.4	207.2	208.6	209.9	212.6	214.8	216.6	226.0	228.3	229.7	232.4	232.9
Crude fuel	463.7	556.8	563.1	570.7	586.2	604.0	612.9	617.4	634.5	636.3	663.5	663.3	677.4	690.4
Manufacturing industries	481.9	593.8	601.3	610.4	629.2	651.8	662.5	667.8	688.3	690.3	724.4	723.5	740.8	756.7
Nonmanufacturing industries	459.6	538.8	544.3	550.7	563.6	577.8	585.5	589.3	603.9	605.7	627.7	627.9	639.8	650.6
SPECIAL GROUPINGS														
Finished goods excluding foods	188.9	206.3	208.5	211.4	213.2	216.2	221.3	222.8	224.6	230.5	234.3	237.4	241.2	242.0
Finished consumer goods excluding foods	183.7	202.1	205.2	208.4	212.3	216.3	220.6	223.1	225.3	232.3	237.8	242.0	245.5	246.8
Intermediate materials, supplies, and components, excluding intermediate materials for food manufacturing and manufactured animal feeds	216.4	238.8	241.3	245.4	249.0	252.5	256.8	258.1	260.5	268.4	273.2	275.7	277.4	278.0
Intermediate foods and feeds	201.0	219.3	223.0	231.0	223.1	226.6	226.0	226.9	229.8	224.8	237.1	232.3	227.5	239.7
Crude materials for further processing excluding crude foodstuffs and feedstuffs, plant and animal fibers, oilseeds, and leaf tobacco	316.6	379.2	389.5	391.7	396.9	408.6	417.0	424.1	435.0	452.9	468.8	468.4	469.4	464.6

¹ Data for January 1980 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.

27. Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1978	1979							1980					
			May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. 1	Feb.	Mar.	Apr.	May
	All commodities	209.3	232.0	233.5	236.9	238.3	242.0	245.6	247.2	249.7	254.9	259.8	261.5	262.3	263.7
	All commodities (1957-59 = 100)	222.1	245.7	247.7	251.4	252.8	256.7	260.6	262.3	267.3	270.2	275.6	277.5	278.3	279.7
	Farm products and processed foods and feeds	206.6	230.8	229.0	232.2	227.5	231.8	230.6	232.3	234.6	231.9	236.9	234.9	229.2	233.9
	Industrial commodities	209.4	231.6	234.0	237.5	240.6	244.2	249.0	250.6	253.1	260.6	265.4	268.2	270.7	271.2
	FARM PRODUCTS AND PROCESSED FOODS AND FEEDS														
01	Farm products	212.5	245.4	242.8	246.8	238.5	241.0	239.6	240.2	242.5	236.4	242.3	239.3	228.9	233.6
01-1	Fresh and dried fruits and vegetables	216.5	228.2	226.4	226.7	241.7	208.3	218.0	216.5	210.7	219.0	220.5	218.3	223.0	243.8
01-2	Grains	182.5	210.3	217.7	247.4	229.1	224.2	229.0	226.6	227.9	214.6	223.3	217.9	210.8	219.0
01-3	Livestock	220.1	280.7	264.0	256.0	240.2	256.4	251.7	248.3	252.5	247.8	257.2	251.8	230.5	233.3
01-4	Live poultry	199.8	216.3	182.9	183.8	171.9	173.5	162.0	195.5	194.7	195.2	184.6	180.1	171.9	171.3
01-5	Plant and animal fibers	193.4	207.6	219.5	207.6	207.9	211.3	212.9	215.4	222.0	239.0	269.5	254.9	266.9	272.7
01-6	Fluid milk	219.7	242.0	243.8	247.6	250.0	258.5	260.8	262.5	264.0	262.3	263.8	263.1	265.4	265.4
01-7	Eggs	158.6	163.8	170.7	167.6	166.8	175.4	155.9	178.7	198.4	165.6	150.4	184.2	153.3	145.7
01-8	Hay, haysceds, and oilseeds	215.8	240.7	258.4	260.1	251.9	240.9	235.6	229.8	230.3	218.1	224.7	215.9	205.1	206.7
01-9	Other farm products	274.9	264.1	281.0	311.9	310.8	315.9	313.6	318.3	319.4	301.1	304.7	311.5	304.8	311.0
02	Processed foods and feeds	202.6	222.0	220.6	223.3	220.5	225.8	224.8	227.1	229.3	228.5	233.1	231.5	228.5	233.1
02-1	Cereal and bakery products	190.3	204.9	206.3	212.4	216.0	218.7	219.8	222.5	223.6	225.4	229.7	231.3	231.3	233.5
02-2	Meats, poultry, and fish	217.1	250.4	241.4	237.7	225.5	239.9	234.2	239.3	242.8	239.6	239.5	239.2	226.0	224.8
02-3	Dairy products	188.4	207.9	208.4	209.0	215.2	218.3	218.1	219.3	219.9	221.0	221.2	223.3	227.8	228.9
02-4	Processed fruits and vegetables	202.6	221.4	221.5	223.6	224.6	225.1	223.4	222.4	222.6	222.9	223.1	223.6	224.5	225.2
02-5	Sugar and confectionery	197.8	207.6	211.1	215.7	218.3	217.2	218.9	222.9	234.4	235.0	287.1	263.6	274.8	327.4
02-6	Beverages and beverage materials	200.0	205.3	208.5	214.1	216.5	217.9	218.9	221.2	221.6	224.0	224.7	226.0	227.9	231.4
02-7	Fats and oils	225.3	241.8	243.6	253.2	251.7	253.3	246.0	241.9	235.6	225.1	225.9	222.4	214.7	212.1
02-8	Miscellaneous processed foods	199.0	220.2	211.1	212.7	217.6	219.0	220.8	222.2	223.1	225.4	223.5	224.7	225.1	223.2
02-9	Manufactured animal feeds	197.4	210.8	220.5	234.9	216.2	219.2	224.0	222.4	224.9	219.7	219.8	216.8	205.4	207.3
	INDUSTRIAL COMMODITIES														
03	Textile products and apparel	159.8	167.2	168.4	169.3	170.5	171.3	172.0	172.8	173.1	175.2	176.5	178.9	180.6	181.5
03-1	Synthetic fibers (12/75 = 100)	109.6	117.4	118.5	119.5	120.6	123.6	124.7	124.2	124.7	127.0	127.1	129.4	130.7	133.5
03-2	Processed yarns and threads (12/75 = 100)	102.4	107.8	108.6	109.5	110.6	111.7	112.1	112.5	112.7	114.6	117.3	118.9	122.1	123.5
03-3	Gray fabrics (12/75 = 100)	118.6	124.7	125.4	128.3	128.7	128.7	129.7	130.7	132.3	132.7	131.7	133.7	136.1	135.3
03-4	Finished fabrics (12/75 = 100)	103.8	107.0	107.6	108.2	109.0	109.1	108.9	109.7	109.9	110.5	110.8	113.1	114.5	115.2
03-81	Apparel	152.4	159.8	160.2	160.3	161.4	161.6	162.2	163.1	162.6	165.5	167.3	168.3	169.1	169.7
03-82	Textile housefurnishings	178.6	188.0	189.3	189.9	190.5	193.9	196.3	196.5	197.1	199.0	200.0	201.2	201.6	202.6
04	Hides, skins, leather, and related products	200.0	269.6	268.0	261.9	257.9	251.1	253.9	248.9	249.2	255.7	251.0	246.8	243.6	240.7
04-1	Hides and skins	360.5	666.9	611.0	566.5	511.9	465.3	478.8	447.6	443.9	468.8	404.8	348.7	328.6	289.7
04-2	Leather	238.6	429.4	414.6	385.2	365.9	330.0	319.8	324.8	347.6	340.3	311.0	297.6	290.4	290.4
04-3	Footwear	183.0	216.3	221.1	221.8	225.4	226.9	227.5	227.9	227.9	229.1	228.1	231.8	231.9	231.9
04-4	Other leather and related products	177.0	209.1	212.3	212.1	210.9	210.1	209.7	208.4	208.0	213.1	214.9	217.9	216.3	217.5
05	Fuels and related products and power	322.5	377.6	393.7	411.8	432.8	454.8	468.5	476.9	487.9	508.0	533.0	553.5	566.3	571.9
05-1	Coal	430.0	450.8	452.0	452.5	454.2	452.5	454.6	455.1	458.6	459.3	458.7	460.7	463.3	464.8
05-2	Coke	411.8	430.6	430.6	430.6	430.6	430.6	431.2	431.2	431.2	430.6	430.6	430.6	430.6	430.6
05-3	Gas fuels ²	428.7	507.2	522.3	548.4	572.4	603.4	619.9	637.0	662.4	677.5	719.8	720.3	744.8	744.8
05-4	Electric power	250.6	265.9	269.9	274.8	278.8	280.5	283.5	281.9	287.0	290.5	299.5	305.7	310.4	316.4
05-61	Crude petroleum ³	300.1	335.7	356.4	370.6	385.7	422.1	436.7	450.4	470.8	513.6	515.1	522.8	533.9	540.1
05-7	Petroleum products, refined ⁴	321.0	400.0	423.6	449.8	482.8	513.7	533.7	545.4	555.2	583.3	620.3	657.9	677.3	680.6
06	Chemicals and allied products	198.8	218.0	219.2	225.0	228.5	230.8	234.2	236.0	238.2	246.0	247.6	251.6	258.1	261.1
06-1	Industrial chemicals ⁵	225.6	255.6	259.3	270.4	277.1	280.0	285.7	288.4	292.3	302.9	306.7	310.7	316.8	324.8
06-21	Prepared paint	192.3	201.3	201.3	205.3	205.3	206.0	206.7	209.4	210.7	223.3	223.3	223.3	231.5	236.8
06-22	Paint materials	212.7	236.1	239.5	246.7	247.9	252.0	253.6	256.6	256.8	259.9	262.7	266.2	271.1	272.9
06-3	Drugs and pharmaceuticals	148.1	157.7	159.0	159.2	159.6	161.0	162.8	163.0	164.4	166.5	167.7	168.9	172.8	171.8
06-4	Fats and oils, inedible	315.8	418.3	374.1	381.6	376.4	379.9	366.9	344.3	327.1	325.6	302.2	299.9	298.2	294.7
06-5	Agricultural chemicals and chemical products	198.4	210.0	209.2	211.2	215.3	219.4	224.3	229.5	232.9	241.9	242.8	256.0	258.3	258.3
06-6	Plastic resins and materials	199.8	228.5	230.1	244.5	250.1	252.0	260.0	261.4	262.5	270.4	271.1	273.9	285.6	287.8
06-7	Other chemicals and allied products	181.8	188.9	190.5	191.8	194.4	195.8	197.0	198.8	201.4	209.4	211.0	214.5	223.3	225.0
07	Rubber and plastic products	174.8	190.8	193.1	195.5	198.8	200.7	203.0	204.9	205.9	207.8	210.9	212.7	214.6	215.1
07-1	Rubber and rubber products	185.3	202.6	204.8	209.5	214.6	217.1	220.3	223.7	224.3	226.1	232.2	232.3	234.6	235.3
07-11	Crude rubber	187.2	214.2	222.0	226.1	233.0	232.2	236.5	237.2	240.2	252.7	263.1	254.9	263.8	263.0
07-12	Tires and tubes	179.2	197.3	198.9	206.2	211.6	215.0	218.3	223.1	223.1	225.1	231.2	231.2	231.3	231.8
07-13	Miscellaneous rubber products	189.6	202.6	203.5	205.4	209.4	211.9	214.7	217.1	217.7	215.9	220.4	223.4	225.9	227.5
07-2	Plastic products (6/78 = 100)		109.5	111.0	111.2	112.2	113.0	114.0	114.3	115.2	116.3	116.5	118.6	119.5	119.6
08	Lumber and wood products	276.0	302.8	299.8	300.1	304.7	309.7	308.8	298.9	290.1	290.0	294.8	295.7	275.2	271.6
08-1	Lumber	322.4	354.8	354.8	355.0	365.3	373.9	370.3	355.6	339.5	336.3	341.5	340.6	310.1	301.3
08-2	Millwork	235.4	261.6	258.9	252.5	249.6	250.9	255.6	252.3	250.3	254.1	258.0	264.7	256.6	250.9
08-3	Plywood	235.6	249.3	238.6	249.7	254.3	257.9	254.0	242.2	237.9	238.2	243.7	240.0	219.2	229.9
08-4	Other wood products	211.8	238.4	238.5	237.6	237.4	238.0	237.7	239.9	240.5	242.2	243.4	243.1	241.7	240.7

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 1978	1979								1980				
			May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. 1	Feb.	Mar.	Apr.	May
INDUSTRIAL COMMODITIES - Continued															
09	Pulp, paper, and allied products	195.6	216.2	216.6	218.3	222.2	223.0	227.5	229.5	231.7	237.4	238.9	241.6	246.5	248.9
09-1	Pulp, paper, and products, excluding building paper and board	195.6	217.2	217.8	219.6	223.6	224.3	229.0	231.1	233.4	239.2	240.5	243.1	248.0	250.3
09-11	Woodpulp	266.5	306.9	308.3	320.3	320.6	320.6	337.5	338.0	338.0	356.6	358.5	359.0	386.8	388.0
09-12	Wastepaper	191.2	206.2	207.2	207.9	206.6	206.7	206.7	220.0	221.2	222.9	223.2	224.9	242.5	226.1
09-13	Paper	206.1	227.2	227.5	228.2	229.5	230.3	238.7	241.8	242.7	245.5	247.5	250.5	253.6	256.5
09-14	Paperboard	179.6	199.2	199.8	201.7	206.4	209.6	211.3	212.8	215.4	221.8	223.4	225.9	230.2	239.2
09-15	Converted paper and paperboard products	185.6	207.0	207.6	209.0	214.4	214.6	217.3	219.0	221.9	227.7	228.7	231.3	234.6	236.1
09-2	Building paper and board	187.4	183.3	180.8	178.0	179.1	182.6	183.5	183.6	184.6	186.2	191.1	198.7	201.3	206.8
10	Metals and metal products	227.1	256.2	258.2	260.8	261.8	263.7	269.6	271.1	273.6	284.6	288.6	286.3	284.6	281.9
10-1	Iron and steel	253.6	279.5	283.2	286.8	286.1	285.5	289.2	292.0	292.8	297.4	300.2	301.6	307.0	304.7
10-13	Steel mill products	254.5	276.7	277.3	284.6	284.7	284.8	288.3	288.8	289.3	293.6	294.2	295.6	304.1	305.5
10-2	Nonferrous metals	207.8	258.2	259.7	262.3	263.1	269.3	283.1	284.1	291.9	326.3	336.5	320.9	298.9	289.8
10-3	Metal containers	243.4	268.5	267.3	267.2	268.4	268.7	279.9	280.9	280.9	283.3	283.3	287.8	301.1	302.7
10-4	Hardware	200.4	216.9	217.1	218.5	220.1	221.5	224.0	225.5	226.2	228.2	229.4	230.5	236.9	238.2
10-5	Plumbing fixtures and brass fittings	199.1	213.8	217.0	219.6	222.4	223.0	223.5	225.4	226.5	232.8	236.6	242.4	243.7	247.4
10-6	Heating equipment	174.4	185.7	185.2	186.0	188.1	191.3	192.2	193.1	195.6	199.5	199.9	202.0	204.2	204.0
10-7	Fabricated structural metal products	226.4	247.0	248.2	250.5	252.2	253.7	256.3	256.7	257.7	258.9	259.5	262.9	268.2	269.4
10-8	Miscellaneous metal products	212.0	228.5	230.1	231.8	235.6	236.7	238.5	238.6	239.1	240.6	242.5	245.1	247.1	247.7
11	Machinery and equipment	196.1	211.4	212.4	214.8	216.0	217.7	220.0	221.3	223.4	227.6	229.7	231.9	235.8	237.0
11-1	Agricultural machinery and equipment	213.1	228.3	229.4	231.2	233.3	237.4	240.0	243.4	244.2	248.4	249.1	250.4	252.8	254.9
11-2	Construction machinery and equipment	232.9	253.7	254.0	257.0	258.5	258.9	263.9	265.4	268.8	276.0	277.2	278.4	282.9	284.2
11-3	Metalworking machinery and equipment	217.0	237.6	239.1	241.4	243.5	246.4	249.6	252.2	254.6	258.9	261.3	264.1	269.9	272.6
11-4	General purpose machinery and equipment	216.6	234.0	235.1	237.1	238.3	240.2	242.8	244.2	247.6	251.0	252.0	255.7	260.0	262.3
11-6	Special industry machinery and equipment	223.0	245.1	246.1	249.8	251.0	251.2	253.8	254.9	256.1	260.6	262.9	265.6	271.9	273.1
11-7	Electrical machinery and equipment	164.9	176.5	177.6	179.9	181.2	182.5	184.3	184.9	186.6	190.6	194.2	195.9	198.7	199.2
11-9	Miscellaneous machinery	194.7	207.1	207.4	209.7	209.7	212.0	213.6	214.9	216.3	220.3	220.8	222.7	226.8	226.9
12	Furniture and household durables	160.4	169.6	170.2	170.7	171.5	172.7	175.1	176.4	177.9	183.4	183.4	184.6	183.1	184.1
12-1	Household furniture	173.5	184.8	185.3	185.8	186.2	188.5	190.1	193.0	194.8	197.4	196.5	196.9	198.9	200.3
12-2	Commercial furniture	201.5	221.9	221.8	222.7	222.7	222.7	223.3	223.3	225.1	226.9	230.1	232.8	233.5	233.8
12-3	Floor coverings	141.6	146.0	146.5	149.1	150.0	150.4	152.1	152.8	152.9	159.0	159.4	160.7	161.7	163.6
12-4	Household appliances	153.0	159.3	160.0	161.1	162.2	162.7	163.2	164.5	165.3	166.5	168.7	169.7	170.2	172.1
12-5	Home electronic equipment	90.2	92.4	92.8	90.2	90.2	90.3	90.3	90.3	90.5	81.0	88.7	88.8	88.9	89.1
12-6	Other household durable goods	203.1	219.5	220.6	223.7	226.6	231.0	245.6	248.2	254.4	287.4	284.2	287.6	266.8	265.2
13	Nonmetallic mineral products	222.8	245.6	246.9	249.5	249.9	254.6	256.2	257.4	259.6	268.4	272.6	276.1	282.8	282.9
13-11	Flat glass	172.8	183.1	184.0	184.1	184.1	184.5	184.7	185.4	186.4	191.0	190.9	191.4	191.4	191.4
13-2	Concrete ingredients	217.7	242.5	243.3	245.1	245.9	246.7	248.3	249.6	251.0	265.0	265.2	266.0	270.5	271.1
13-3	Concrete products	214.0	241.6	243.7	245.2	246.3	248.7	250.1	250.6	253.2	265.4	266.2	268.6	273.0	275.0
13-4	Structural clay products excluding refractories	197.2	215.7	216.5	220.3	222.3	223.7	221.1	221.8	226.7	229.6	231.1	231.5	234.4	229.5
13-5	Refractories	216.5	228.5	232.6	240.8	241.7	242.4	244.6	247.4	248.0	248.5	251.9	254.8	262.6	265.2
13-6	Asphalt roofing	292.0	317.9	323.0	328.4	325.9	333.0	337.5	347.4	346.5	356.6	372.3	387.6	404.7	398.2
13-7	Gypsum products	229.1	248.8	251.3	251.8	252.3	254.9	255.3	256.2	255.0	255.4	262.2	267.6	264.0	256.5
13-8	Glass containers	244.4	265.2	265.2	265.2	265.2	265.2	265.2	265.2	274.2	274.3	274.6	274.6	294.6	294.6
13-9	Other nonmetallic minerals	275.6	303.0	302.0	310.5	309.9	336.0	341.2	342.2	342.2	351.8	374.3	386.9	399.5	399.5
14	Transportation equipment (12/68 = 100)	173.5	187.2	187.5	188.4	185.9	186.6	194.2	194.8	195.6	198.7	198.1	198.8	202.6	201.1
14-1	Motor vehicles and equipment	176.0	189.8	190.1	190.8	187.8	188.6	197.1	197.4	198.2	200.7	199.9	200.8	204.9	203.1
14-4	Railroad equipment	252.8	271.6	274.7	280.6	280.9	281.6	286.3	288.2	289.0	297.5	299.3	301.3	303.9	304.6
15	Miscellaneous products	184.3	203.3	205.2	207.0	208.9	213.1	218.9	221.4	227.4	242.9	261.8	256.2	252.2	250.9
15-1	Toys, sporting goods, small arms, ammunition	163.2	174.3	174.7	176.9	177.6	179.8	181.1	181.2	183.0	190.9	193.2	194.2	195.3	196.4
15-2	Tobacco products	198.5	214.4	214.4	214.8	221.3	221.9	222.1	222.2	226.6	236.6	236.9	237.1	237.6	244.6
15-3	Notions	182.0	190.6	190.6	192.0	191.9	191.9	195.7	195.8	196.8	203.1	203.2	207.2	216.8	217.0
15-4	Photographic equipment and supplies	145.7	150.6	151.6	152.0	152.2	154.3	157.4	161.2	164.3	165.9	218.7	219.4	212.6	200.0
15-51	Mobile homes (12/74 = 100)	126.4	137.2	137.9	138.2	139.5	140.7	142.9	144.0	144.1	144.7	146.0	146.6	148.9	149.9
15-9	Other miscellaneous products	210.6	250.6	255.8	261.4	261.4	272.5	288.3	293.3	308.8	351.6	375.3	352.3	339.2	339.1

¹ Data for January 1980 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

² Prices for natural gas are lagged 1 month.

³ Includes only domestic production.

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

⁵ Some prices for industrial chemicals are lagged 1 month.

28. Producer Price Indexes, for special commodity groupings

[1967 = 100 unless otherwise specified]

Commodity grouping	Annual average 1978	1979									1980				
		May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. ¹	Feb.	Mar.	Apr.	May	
All commodities — less farm products	208.4	230.1	232.0	235.4	237.5	241.4	245.3	247.0	249.5	255.7	260.5	262.6	264.3	265.4	
All foods	206.4	226.4	223.8	225.4	224.7	228.5	226.9	230.0	232.2	231.2	235.7	234.7	231.7	237.4	
Processed foods	206.7	227.5	224.7	226.4	224.8	230.8	228.9	231.8	234.2	233.3	238.5	236.8	234.0	239.0	
Industrial commodities less fuels	197.2	216.0	217.0	219.0	220.3	222.0	225.9	226.9	228.5	234.7	237.5	238.4	239.9	239.9	
Selected textile mill products (Dec. 1975 = 100)	108.8	112.8	113.5	114.0	115.1	115.8	116.4	117.0	117.2	118.9	119.4	121.1	122.1	123.1	
Hosiery	106.3	112.5	112.7	114.1	113.0	112.7	113.3	114.6	115.3	119.2	119.6	119.9	120.7	121.5	
Underwear and nightwear	158.9	167.7	168.3	168.5	170.8	170.8	171.2	171.6	172.9	175.3	177.8	181.8	182.0	182.8	
Chemicals and allied products, including synthetic rubber and manmade fibers and yarns	190.5	207.6	209.5	215.0	218.6	220.9	224.3	226.3	228.7	236.3	238.2	242.1	248.4	251.6	
Pharmaceutical preparations	140.6	150.1	151.7	151.7	152.0	153.6	155.6	155.4	156.9	159.2	160.4	161.7	165.9	164.7	
Lumber and wood products, excluding millwork and other wood products	298.3	325.1	321.7	325.3	333.9	341.0	337.3	323.3	310.8	308.6	314.0	312.2	284.5	281.7	
Special metals and metal products	209.6	232.4	233.7	235.5	234.9	236.4	243.4	244.5	246.3	253.7	255.7	254.8	255.6	253.4	
Fabricated metal products	216.2	234.6	235.7	237.4	238.8	241.1	244.0	244.6	245.3	247.2	248.3	251.3	256.0	257.0	
Copper and copper products	155.6	199.0	193.0	191.9	197.1	200.5	212.2	213.8	217.1	227.7	258.2	240.9	224.7	212.3	
Machinery and motive products	190.4	205.3	206.0	207.7	207.2	208.5	213.4	214.3	215.9	219.7	220.6	222.2	226.1	226.1	
Machinery and equipment, except electrical	214.3	231.8	232.6	235.1	236.2	238.2	240.8	242.5	244.8	249.1	250.4	252.9	257.5	259.0	
Agricultural machinery, including tractors	216.3	232.1	233.8	235.8	238.4	243.6	246.3	250.8	251.5	256.1	256.0	257.7	259.7	261.7	
Metalworking machinery	228.8	254.3	256.8	260.1	261.7	265.6	269.5	272.7	276.0	281.9	284.8	288.1	294.3	296.8	
Numerically controlled machine tools (Dec. 1971 = 100)	179.1	195.7	195.8	202.2	204.2	206.5	208.8	211.2	213.1	215.6	216.8	223.9	227.0	227.0	
Total tractors	228.7	247.7	248.2	251.2	253.8	256.0	261.2	262.5	266.2	273.0	273.5	274.3	278.4	280.0	
Agricultural machinery and equipment less parts	212.7	228.1	229.5	231.4	233.7	238.4	241.0	244.9	245.8	250.0	250.4	252.1	254.2	256.1	
Farm and garden tractors less parts	216.1	230.5	231.8	233.9	237.6	244.1	247.6	250.5	251.1	256.0	256.7	258.8	261.0	262.0	
Agricultural machinery excluding tractors less parts	216.7	233.6	235.7	237.6	239.2	243.5	245.4	251.3	252.0	256.4	255.6	257.0	259.0	261.7	
Industrial valves	232.3	255.0	255.8	257.0	258.2	260.1	261.8	263.1	266.1	271.0	272.2	276.1	283.5	286.6	
Industrial fittings	232.7	259.3	260.4	260.8	262.3	264.3	272.6	276.8	276.8	276.8	280.4	282.8	289.9	291.5	
Abrasive grinding wheels	208.1	221.6	222.8	222.8	224.6	224.6	239.0	239.0	239.0	244.0	244.0	244.0	258.4	261.3	
Construction materials	228.3	250.3	250.3	252.3	254.3	256.6	258.5	256.7	255.4	259.3	262.2	264.6	262.1	261.4	

¹ Data for January 1980 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.

29. Producer Price Indexes, by durability of product

[1967 = 100]

Commodity grouping	Annual average 1978	1979									1980				
		May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. ¹	Feb.	Mar.	Apr.	May	
Total durable goods	204.9	224.7	225.8	227.6	228.0	230.1	234.6	235.3	237.0	243.8	246.4	246.6	247.2	246.4	
Total nondurable goods	211.9	236.9	238.8	243.7	245.8	251.1	253.7	256.2	259.3	263.2	270.0	273.1	274.0	277.3	
Total manufactures	204.2	225.0	226.5	229.8	231.7	235.2	239.0	240.6	242.6	248.4	252.7	254.8	256.5	257.8	
Durable	204.7	223.8	224.6	226.6	227.2	229.4	234.0	234.6	236.2	242.9	245.0	245.2	246.2	245.9	
Nondurable	203.0	225.6	227.8	232.5	235.9	241.0	244.0	246.6	249.0	253.9	260.7	264.7	267.3	270.3	
Total raw or slightly processed goods	234.6	268.2	269.7	274.3	272.1	276.9	278.7	281.0	285.9	287.6	295.9	295.6	290.4	292.7	
Durable	209.6	262.9	272.8	265.4	259.8	255.7	259.2	265.8	267.8	282.8	305.2	302.5	296.0	262.2	
Nondurable	235.6	267.6	268.5	274.0	272.0	277.5	279.2	281.2	286.3	286.9	294.2	294.0	289.7	294.0	

¹ Data for January 1980 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.

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

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1978	1979									1980				
			May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. ¹	Feb.	Mar.	Apr.	May	
MINING																
1011	Iron ores (12/75 = 100)	121.9	131.9	136.0	136.0	138.8	138.1	140.2	140.2	142.0	142.0	142.0	147.3	147.3	152.6	152.6
1092	Mercury ores (12/75 = 100)	126.6	237.5	277.0	270.8	245.8	252.1	275.0	252.1	300.0	308.3	335.4	330.0	337.5	337.5	
1211	Bituminous coal and lignite	430.2	451.3	452.5	453.1	454.8	452.9	455.1	455.5	458.9	459.2	458.7	460.7	462.9	464.4	
1311	Crude petroleum and natural gas	358.2	427.2	444.1	457.5	476.0	508.4	522.1	533.9	551.3	582.7	597.4	600.6	612.3	620.2	
1442	Construction sand and gravel	194.6	216.0	217.0	219.3	220.1	221.0	224.0	224.7	225.6	238.8	242.1	243.6	248.4	249.4	
1455	Kaolin and ball clay (6/76 = 100)	111.8	125.4	125.5	125.5	125.5	125.5	126.7	124.2	129.3	136.6	128.5	123.4	136.6		
MANUFACTURING																
2011	Meat packing plants	216.7	259.2	249.1	243.8	229.3	247.2	238.9	241.5	243.9	240.8	240.1	238.9	225.6	227.4	
2013	Sausages and other prepared meats	215.2	227.7	217.1	214.7	203.4	211.7	211.9	213.4	220.0	211.9	207.4	209.1	197.7	194.7	
2016	Poultry dressing plants	192.5	203.5	177.8	178.4	169.6	171.2	163.1	188.3	188.5	186.1	178.2	173.5	164.5	164.7	
2021	Creamery butter	205.2	225.3	225.3	227.5	237.9	240.6	240.1	241.7	243.1	241.8	242.8	243.4	252.8	253.7	

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 1978	1979							1980					
			May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. 1	Feb.	Mar.	Apr.	May
MANUFACTURING—Continued															
2022	Cheese natural and processed (12/72 = 100)	169.6	185.2	185.6	186.3	195.4	200.8	196.8	193.6	193.9	195.4	194.6	197.4	203.6	203.6
2024	Ice cream and frozen desserts (12/72 = 100)	154.8	171.0	171.5	171.5	175.0	176.1	177.5	179.9	180.1	180.9	181.5	185.0	191.4	192.1
2033	Canned fruits and vegetables	193.2	207.2	207.5	209.9	210.5	212.0	212.9	212.2	212.2	213.4	213.5	214.8	216.3	217.4
2034	Dehydrated food products (12/73 = 100)	131.3	182.1	181.0	182.0	180.7	170.0	158.2	156.2	157.3	157.6	159.0	156.4	157.5	156.4
2041	Flour mills (12/71 = 100)	147.0	166.7	174.6	190.9	176.9	183.5	184.2	184.4	184.1	181.7	183.6	182.6	175.9	183.3
2044	Rice milling	207.6	206.8	206.8	206.8	218.7	223.5	227.3	231.8	218.1	217.5	233.0	258.0	260.4	254.5
2048	Prepared foods, n.e.c. (12/75 = 100)	107.3	115.2	118.9	128.1	119.4	120.9	123.6	124.3	125.0	122.0	122.9	121.8	116.8	117.2
2061	Raw cane sugar	190.7	195.6	207.0	209.0	216.8	216.7	224.3	223.3	248.4	260.5	374.9	276.0	320.2	456.1
2063	Beet sugar	188.5	199.7	199.7	202.0	199.4	200.0	204.7	210.6	223.2	224.6	290.6	303.1	295.4	338.0
2067	Chewing gum	218.0	242.2	242.2	242.9	242.9	242.9	242.9	262.3	262.3	262.3	262.3	281.9	281.9	282.0
2074	Cottonseed oil mills	183.1	192.5	210.4	224.5	214.1	217.9	214.9	204.7	205.6	182.4	184.3	170.4	154.8	150.5
2075	Soybean oil mills	225.6	237.7	251.1	262.8	250.0	248.6	244.7	242.4	241.9	235.1	226.2	219.3	216.2	215.2
2077	Animal and marine fats and oils	287.9	363.8	335.3	352.0	321.4	333.8	333.7	315.2	300.7	298.1	292.6	297.3	274.0	263.0
2083	Malt	181.5	190.8	201.4	201.4	201.4	214.9	214.9	228.2	228.2	244.1	244.1	244.1	244.1	244.1
2085	Distilled liquor, except brandy (12/75 = 100)	106.7	113.6	113.6	113.6	115.7	117.1	117.1	118.1	118.1	118.6	118.7	118.7	118.7	118.9
2091	Canned and cured seafoods (12/73 = 100)	136.4	140.9	142.1	148.5	148.2	154.0	154.3	155.6	159.8	160.9	164.0	165.7	170.2	173.2
2092	Fresh or frozen packaged fish	303.8	382.4	397.6	403.7	391.5	389.2	400.1	391.4	388.4	389.7	386.6	392.6	371.5	361.6
2095	Roasted coffee (12/72 = 100)	262.3	231.7	244.2	271.0	279.2	279.2	280.0	287.5	287.5	281.3	273.9	274.0	273.9	273.9
2098	Macaroni and spaghetti	176.9	186.6	188.6	203.5	210.4	210.4	210.4	221.5	227.7	227.7	227.7	227.7	230.5	230.5
2111	Cigarettes	204.6	221.4	221.4	221.5	228.9	229.1	229.2	229.2	234.3	245.8	245.9	245.9	246.1	254.2
2121	Cigars	141.4	145.4	145.3	149.8	150.1	150.1	149.8	150.4	150.4	151.2	151.6	151.8	152.7	152.7
2131	Chewing and smoking tobacco	222.0	245.9	245.9	246.4	246.4	255.8	260.4	260.8	260.8	260.9	261.6	267.3	274.3	274.6
2211	Weaving mills, cotton (12/72 = 100)	181.1	192.7	194.3	196.1	196.5	198.7	201.1	201.6	201.9	204.4	206.5	209.1	210.9	211.6
2221	Weaving mills, synthetic (12/77 = 100)	109.0	113.6	114.1	116.2	116.3	116.2	116.8	117.3	117.2	118.1	117.8	119.6	122.4	121.8
2251	Women's hosiery, except socks (12/75 = 100)	91.5	97.3	97.6	99.6	98.1	97.5	98.2	100.3	100.2	103.3	103.6	103.7	104.4	105.4
2254	Knit underwear mills	164.1	173.1	173.3	172.9	174.0	174.0	174.3	174.6	178.3	182.5	184.5	186.2	186.4	187.1
2257	Circular knit fabric mills (6/76 = 100)	98.5	94.1	95.8	96.1	96.4	96.2	96.9	98.4	98.6	99.3	100.0	103.1	103.6	104.1
2261	Finishing plants, cotton (6/76 = 100)	111.0	120.8	120.9	122.5	123.2	124.0	126.1	126.3	126.6	128.7	129.5	131.7	131.9	133.2
2262	Finishing plants, synthetics, silk (6/76 = 100)	101.4	106.3	107.0	107.5	108.2	108.3	109.3	109.3	109.8	110.3	109.3	110.3	111.3	112.1
2271	Woven carpets and rugs (12/75 = 100)	114.7	116.7	117.1	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
2272	Tufted carpets and rugs	125.3	127.7	128.1	127.6	128.6	129.0	129.8	130.1	130.1	134.7	135.2	137.5	135.9	138.7
2281	Yarn mills, except wool (12/71 = 100)	167.4	174.5	175.7	177.5	177.4	179.4	181.2	183.0	183.7	188.0	197.4	199.3	203.8	204.5
2282	Throwing and winding mills (6/76 = 100)	99.2	106.3	107.5	108.5	109.7	111.2	110.4	109.6	109.2	110.1	108.8	111.3	114.8	116.3
2284	Thread mills (6/76 = 100)	114.6	120.4	120.4	120.5	128.1	128.1	128.4	128.4	128.6	128.7	129.2	129.3	133.9	142.2
2298	Cordage and twine (12/77 = 100)	99.3	102.8	105.4	105.4	113.5	115.1	114.9	114.9	114.9	115.0	117.2	118.5	123.6	123.8
2311	Men's and boys' suits and coats	194.3	204.2	204.5	205.8	206.5	206.5	206.6	206.8	206.7	209.0	209.6	209.7	205.7	207.0
2321	Men's and boys' shirts and nightwear	180.8	182.4	183.5	194.7	195.9	196.0	196.1	196.6	196.3	197.7	196.6	197.3	202.9	203.5
2322	Men's and boys' underwear	180.6	188.7	188.7	188.7	190.0	190.0	190.0	190.0	194.0	199.8	202.2	204.0	204.2	204.3
2323	Men's and boys' neckwear (12/75 = 100)	102.3	103.4	103.4	103.4	110.9	110.9	110.9	110.9	110.9	112.4	112.4	112.4	106.3	106.3
2327	Men's and boys' separate trousers	152.7	162.3	162.5	162.5	162.7	162.7	162.9	163.4	163.5	164.2	174.3	174.4	174.8	174.9
2328	Men's and boys' work clothing	195.2	206.5	209.0	208.9	210.7	210.9	213.4	219.1	219.6	225.1	234.1	235.4	240.9	241.7
2331	Women's and misses' blouses and waists (6/78 = 100)	(2)	100.3	100.5	102.6	102.7	102.8	103.0	105.9	106.8	107.1	107.2	107.2	107.6	107.7
2335	Women's and misses' dresses (12/77 = 100)	100.7	105.9	105.9	106.4	108.3	108.3	108.7	108.8	108.8	112.9	113.9	113.9	113.9	113.9
2341	Women's and children's underwear (12/72 = 100)	132.1	143.3	143.3	144.2	145.3	145.3	146.7	147.4	147.7	149.4	150.1	152.4	152.4	153.2
2342	Brassieres and allied garments (12/75 = 100)	111.7	116.7	117.5	117.5	117.8	117.8	117.8	117.8	118.8	119.7	123.0	124.9	125.4	125.4
2361	Children's dresses and blouses (12/77 = 100)	(2)	106.7	102.1	102.4	102.4	103.7	105.7	105.7	106.6	105.3	105.3	106.0	106.0	106.0
2381	Fabric dress and work gloves	214.4	243.9	243.9	245.4	245.4	245.4	246.9	246.9	257.7	261.7	264.8	267.5	271.1	271.1
2394	Canvas and related products (12/77 = 100)	99.6	105.9	106.9	108.4	111.0	111.4	112.3	112.1	120.1	122.1	122.8	123.4	123.4	123.4
2396	Automotive and apparel trimmings (12/77 = 100)	106.3	107.1	114.3	114.3	114.3	114.3	114.3	114.3	114.3	114.3	114.3	122.3	122.3	122.3
2421	Sawmills and planing mills (12/71 = 100)	228.9	251.6	250.9	251.3	259.1	265.6	262.2	250.2	237.9	234.8	239.6	239.1	215.7	209.3
2436	Softwood veneer and plywood (12/75 = 100)	150.1	151.1	140.7	148.1	153.4	156.0	153.1	142.9	138.9	138.5	143.9	139.8	121.4	129.6
2439	Structural wood members, n.e.c. (12/75 = 100)	136.2	150.1	150.0	150.0	149.9	150.8	158.2	158.2	158.2	158.2	158.2	158.2	158.2	158.2
2448	Wood pallets and skids (12/75 = 100)	149.4	166.7	167.0	166.9	166.8	167.9	167.9	171.0	170.5	169.8	167.0	166.3	164.6	162.8
2451	Mobile homes (12/74 = 100)	126.5	137.3	138.0	138.2	139.6	140.7	143.0	144.0	144.1	144.8	146.1	146.7	149.0	150.0
2492	Particleboard (12/75 = 100)	159.7	141.6	137.4	134.3	134.7	138.5	139.5	136.8	134.5	136.9	149.0	158.9	161.9	167.3
2511	Wood household furniture (12/71 = 100)	152.4	164.6	164.0	164.5	164.6	168.0	169.3	172.3	174.5	177.5	177.4	177.6	179.7	180.8
2512	Upholstered household furniture (12/71 = 100)	143.1	149.2	149.4	150.0	150.2	151.6	151.8	153.8	155.7	155.9	156.6	156.6	158.7	158.9
2515	Mattresses and bedsprings	156.3	163.2	164.1	164.5	165.8	165.8	168.9	172.3	172.3	169.9	169.7	169.7	171.5	174.8
2521	Wood office furniture	194.4	214.3	214.2	216.8	216.8	216.8	217.6	221.9	226.2	233.7	233.8	233.9	233.9	233.9
2611	Pulp mills (12/73 = 100)	178.5	195.2	196.6	205.4	205.7	205.8	213.5	213.9	213.9	225.2	227.0	227.4	244.9	246.0
2621	Paper mills, except building (12/74 = 100)	115.7	129.3	129.5	130.2	131.0	131.4	135.1	136.5	136.8	139.0	140.0	142.7	145.1	146.1
2631	Paperboard mills (12/74 = 100)	106.4	118.1	118.5	119.7	121.9	123.4	125.4	126.3	127.6	131.3	132.3	134.1	137.0	141.5
2647	Sanitary paper products	251.4	271.7	271.9	276.4	285.9	285.4	286.3	288.4	290.9	295.8	303.8	311.6	312.2	318.1
2654	Sanitary food containers	170.8	189.1	189.1	189.6	189.6	191.8	195.8	198.2	199.9	202.6	202.6	207.3	212.9	216.7
2655	Fiber cans, drums, and similar products (12/75 = 100)														

MONTHLY LABOR REVIEW July 1980 • Current Labor Statistics: Producer Prices

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

[1967=100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1978	1979								1980					
			May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. ¹	Feb.	Mar.	Apr.	May	
3021	Rubber and plastic footwear (12/71 = 100)	158.7	169.5	169.6	171.0	173.4	173.4	173.5	173.5	173.5	173.5	173.8	173.8	173.8	173.8	173.8
3031	Reclaimed rubber (12/73 = 100)	154.3	167.6	169.1	169.2	169.2	177.7	178.8	179.2	179.5	179.7	177.9	177.9	182.7	183.7	184.3
3079	Miscellaneous plastic products (6/78 = 100)	109.0	109.0	110.7	111.4	112.3	113.1	114.3	114.6	115.5	116.6	116.6	116.8	118.7	120.1	120.3
3111	Leather tanning and finishing (12/77 = 100)	119.1	201.3	195.8	181.8	172.9	155.2	161.9	150.8	153.5	164.3	160.8	146.7	140.8	137.9	
3142	House slippers (12/75 = 100)	122.5	138.5	142.0	135.0	135.0	135.0	135.8	135.9	135.9	143.5	146.7	146.7	146.8	146.8	
3143	Men's footwear, except athletic (12/75 = 100)	127.1	152.8	155.4	155.4	158.2	160.1	160.4	160.3	160.3	160.3	157.9	158.4	158.4	158.4	
3144	Women's footwear, except athletic	164.1	192.2	195.4	198.7	201.5	201.6	202.3	204.0	204.0	205.6	206.4	213.5	213.8	213.8	
3171	Women's handbags and purses (12/75 = 100)	111.4	131.7	131.8	131.8	131.8	131.8	131.8	131.8	131.8	131.9	131.9	132.1	132.1	140.8	
3211	Flat glass (12/71 = 100)	142.7	150.8	151.8	151.9	151.9	152.3	152.6	153.3	153.9	157.6	157.4	157.9	157.9	157.9	
3221	Glass containers	244.3	265.2	265.2	265.2	265.2	265.2	265.2	265.2	274.2	274.2	274.2	274.2	294.5	294.5	
3241	Cement, hydraulic	251.2	283.2	283.7	285.4	285.4	285.4	285.4	285.4	285.4	286.2	305.7	303.2	303.2	309.8	310.7
3251	Brick and structural clay tile	230.8	258.3	259.7	261.0	263.3	265.9	261.3	261.3	262.7	268.3	270.4	271.9	276.4	278.5	
3253	Ceramic wall and floor tile (12/75 = 100)	107.7	113.0	113.0	120.2	120.2	120.2	120.2	120.2	130.3	130.4	130.4	130.4	130.4	117.6	
3255	Clay refractories	221.4	234.6	236.9	246.5	246.7	247.1	251.0	252.9	254.0	255.1	260.9	265.3	275.4	277.1	
3259	Structural clay products, n.e.c.	176.3	186.8	187.8	188.2	192.1	192.1	192.8	192.3	196.5	196.3	198.6	196.7	200.6	201.6	
3261	Vitreous plumbing fixtures	189.7	204.6	206.4	210.1	212.4	213.1	214.5	215.7	217.3	219.2	224.6	226.7	227.6	236.1	
3262	Vitreous china food utensils	268.8	290.6	290.6	297.5	297.5	298.0	298.0	305.4	308.2	308.2	307.9	308.2	313.4	313.4	
3263	Fine earthenware food utensils	228.1	237.1	236.4	238.8	238.8	246.0	246.0	248.4	294.3	294.3	290.3	294.0	294.8	293.6	
3269	Pottery products, n.e.c. (12/75 = 100)	122.2	129.2	129.0	131.0	131.0	133.3	133.3	135.5	150.1	150.1	148.8	150.0	151.3	151.4	
3271	Concrete block and brick	202.0	232.6	232.7	232.7	235.7	237.8	240.0	240.0	240.2	249.5	250.6	252.3	259.3	259.4	
3273	Ready-mixed concrete	217.6	245.2	247.5	249.6	250.5	252.4	254.0	254.6	257.0	270.8	271.9	274.9	278.9	281.6	
3274	Lime (12/75 = 100)	129.5	139.8	140.1	141.8	142.9	144.2	144.6	144.3	144.6	149.5	153.7	155.5	156.7	156.9	
3275	Gypsum products	229.5	249.4	251.9	252.3	252.8	255.4	255.9	256.8	255.6	255.9	262.8	268.1	264.6	257.0	
3291	Abrasive products (12/71 = 100)	172.3	185.1	185.8	187.7	188.6	190.4	195.1	195.3	196.5	199.4	202.2	203.9	210.1	211.9	
3297	Nonclay refractories (12/74 = 100)	133.6	140.5	143.9	148.1	149.1	149.7	150.1	152.3	152.3	152.6	153.3	154.2	157.4	159.7	
3312	Blast furnaces and steel mills	262.3	285.3	285.8	292.8	293.0	293.2	296.4	297.1	297.7	302.4	302.9	304.1	311.9	313.2	
3313	Electrometallurgical products (12/75 = 100)	94.8	111.7	112.3	116.5	116.5	116.0	116.2	117.5	117.6	117.8	118.0	118.0	118.7	118.5	
3316	Cold finishing of steel shapes	241.0	259.8	261.3	270.6	270.8	270.9	271.7	273.4	273.9	274.1	277.2	277.2	285.9	288.1	
3317	Steel pipes and tubes	255.2	264.5	264.5	271.9	271.3	271.3	272.7	273.1	273.2	280.5	281.2	283.6	286.9	286.9	
3321	Gray iron foundries (12/68 = 100)	233.5	253.3	254.5	253.9	253.8	254.8	267.1	269.6	269.7	273.7	275.4	275.7	278.4	279.0	
3333	Primary zinc	223.2	274.5	275.2	281.4	265.5	264.2	265.2	257.8	265.7	266.1	272.4	279.6	274.2	268.2	
3334	Primary aluminum	217.4	234.2	238.5	244.9	247.4	248.2	256.0	263.2	266.6	267.0	267.0	267.0	276.0	287.0	
3351	Copper rolling and drawing	170.2	215.6	211.7	211.2	213.6	216.7	226.3	222.6	225.0	231.0	253.2	238.7	230.1	222.9	
3353	Aluminum sheet plate and foil (12/75 = 100)	137.6	148.7	148.8	149.6	149.8	150.0	150.7	151.3	151.7	153.2	153.5	155.5	158.0	157.6	
3354	Aluminum extruded products (12/75 = 100)	134.3	147.5	147.6	150.3	151.9	151.9	155.2	157.4	158.0	158.8	158.9	160.8	167.6	167.7	
3355	Aluminum rolling, drawing, n.e.c. (12/75 = 100)	119.7	131.5	131.6	132.7	133.1	133.5	136.9	139.9	140.5	140.7	140.8	141.2	143.8	145.2	
3411	Metal cans	238.5	263.8	262.2	262.2	262.9	263.5	273.8	274.6	274.7	276.6	276.6	279.5	295.1	295.2	
3425	Hand saws and saw blades (12/72 = 100)	147.9	161.9	162.5	162.8	166.3	166.4	167.1	169.5	169.8	173.1	173.6	175.4	177.8	181.3	
3431	Metal sanitary ware	209.1	222.2	224.1	226.4	228.9	229.2	230.1	231.7	232.9	237.8	242.1	243.1	245.5	249.7	
3465	Automotive stampings (12/75 = 100)	118.8	127.0	127.1	127.8	130.9	131.6	132.4	132.4	132.4	132.4	132.4	133.8	133.8	134.1	
3482	Small arms ammunition (12/75 = 100)	119.5	130.4	131.4	134.0	134.0	134.0	133.2	133.6	143.2	143.2	147.9	147.3	146.3	147.1	
3493	Steel springs, except wire	204.6	218.7	220.5	221.6	222.1	222.8	223.7	224.1	225.6	226.1	226.5	228.4	228.9	229.9	
3494	Valves and pipe fittings (12/71 = 100)	185.5	203.6	204.2	205.3	206.2	207.5	210.4	212.5	214.3	216.9	218.8	221.3	227.3	229.1	
3498	Fabricated pipe and fittings	265.5	288.2	290.7	294.8	294.8	294.9	297.3	297.4	297.4	301.7	301.8	303.5	306.8	306.9	
3519	Internal combustion engines, n.e.c.	220.1	239.0	239.2	242.3	245.7	251.8	254.2	254.9	254.9	260.5	260.5	264.2	269.2	270.2	
3531	Construction machinery (12/76 = 100)	114.0	123.9	124.0	125.6	126.3	126.5	128.9	129.4	130.9	134.6	135.3	135.8	138.0	138.7	
3532	Mining machinery (12/72 = 100)	209.5	228.4	226.4	231.2	231.5	232.7	233.1	235.4	236.4	245.8	244.2	244.8	254.1	256.2	
3533	Oilfield machinery and equipment	246.2	288.4	290.0	292.0	293.3	296.8	300.5	302.8	309.1	314.2	315.9	319.0	329.5	332.9	
3534	Elevators and moving stairways	204.2	213.6	214.2	215.4	214.6	219.1	219.4	220.6	220.9	225.6	225.4	228.8	236.6	234.1	
3542	Machine tools, metal forming types (12/71 = 100)	213.6	238.8	240.6	244.6	245.1	247.9	249.8	253.7	256.7	266.1	259.2	271.2	272.1	275.7	
3546	Power driven hand tools (12/76 = 100)	111.1	117.8	118.7	119.2	120.2	120.4	122.0	122.8	124.4	126.3	126.5	127.3	128.6	130.4	
3552	Textile machinery (12/69 = 100)	179.9	191.7	192.6	195.0	197.5	198.2	199.3	200.6	200.6	202.6	205.2	207.0	212.5	213.0	
3553	Woodworking machinery (12/72 = 100)	168.1	183.2	184.5	185.9	187.7	190.0	192.6	192.7	192.9	201.2	202.0	205.1	212.7	212.5	
3576	Scales and balances, excluding laboratory	179.7	192.8	193.7	194.8	195.4	195.4	195.7	199.5	201.0	204.2	201.9	204.1	205.1	208.2	
3592	Carburetors, pistons, rings, valves (6/76 = 100)	128.2	138.6	138.7	139.2	139.6	140.7	142.8	145.1	145.3	147.5	147.6	148.5	152.5	152.8	
3612	Transformers	158.3	168.0	168.5	167.9	167.6	168.4	171.2	170.4	171.6	172.9	176.1	177.4	180.0	181.7	
3623	Welding apparatus, electric (12/72 = 100)	178.1	191.5	191.9	193.5	194.1	195.1	196.9	198.6	200.3	201.3	202.6	205.3	207.3	209.8	
3631	Household cooking equipment (12/75 = 100)	114.8	120.7	120.9	122.0	123.4	124.4	125.9	126.3	128.7	129.1	129.3	129.6	132.5	132.5	
3632	Household refrigerators, freezers (6/76 = 100)	109.6	111.9	112.6	113.6	114.3	115.1	115.1	115.7	116.3	117.0	118.0	118.2	119.0	119.0	
3633	Household laundry equipment (12/73 = 100)	141.0	147.0	147.2	148.8	149.9	150.6	150.9	152.3	153.5	154.0	156.5	158.2	159.0	159.7	
3635	Household vacuum cleaners	135.5	141.2	141.5	141.6	141.7	141.9	144.5	144.7	145.8	146.1	149.6	149.9	150.2	149.2	
3636	Sewing machines (12/75 = 100)	111.2	121.1	121.1	121.8	122.2	122.2	122.6	122.6	122.6	122.6	128.6	128.6	128.6	128.6	
3641	Electric lamps	214.7	229.8	229.7	240.8	244.3	242.7	244.8	238.7	240.8	248.5	252.2	251.8	252.4	252.3	
3644	Noncurrent-carrying wiring devices (12/72 = 100)	185.8	202.6	203.0	203.3	207.7	209.1	210.5	211.9	215.0	212.9	217.5	217.5	219.7	220.3	
3646	Commercial lighting fixtures (12/75 = 100)	112.7	126.8	127.4	127.9	127.9	130.5	131.4	131.6	131.9	133.4	134.8	136.6	138.4	138.9	
3648	Lighting equipment, n.e.c. (12/75 = 100)	114.6	124.0	124.6	127.6	128.2	128.5	129.6	129.8	130.3	133.0	133.2	134.5	138.6	139.4	
3671	Electron tubes receiving type	200.9	211.3	226.4	226.5	226.6	227.2	227.2	227.4	229.1	229.4	229.4	229.5	253.9	254.3	
3674	Semiconductors and related devices	85.3	84.7	84.7	84.2	84.3	84.7	85.1	85.6	86.4	86.8	88.0	88.9	89.7	90.7	
3675	Electronic capacitors (12/75 = 100)	111.5	120.1	122.1	126.7	129.3	134.1	133.9	135.8	138.0	147.7	149.1	149.0	155.6	156.4	
3676																

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. Indexes of productivity and related data, selected years, 1950-79

[1967=100]

Item	1950	1955	1960	1965	1970	1972	1973	1974	1975	1976	1977	1978	1979
Private business sector:													
Output per hour of all persons	61.2	70.6	79.0	95.1	104.4	111.5	113.6	110.2	112.6	116.6	118.7	119.3	118.3
Compensation per hour	42.6	56.1	72.2	88.7	123.3	139.8	151.3	165.2	181.7	197.6	213.3	231.5	253.2
Real compensation per hour	59.2	69.9	81.4	93.9	106.0	111.6	113.6	111.8	112.7	115.9	117.5	118.5	116.4
Unit labor cost	69.6	79.4	91.4	93.3	118.2	125.4	133.2	149.8	161.3	169.5	179.7	194.0	214.0
Unit nonlabor payments	73.1	80.4	85.4	95.9	105.8	118.9	124.9	130.3	150.3	157.9	165.5	174.3	184.4
Implicit price deflator	70.8	79.8	89.3	94.2	113.9	123.2	130.3	143.1	157.5	165.5	174.8	187.2	203.8
Nonfarm business sector:													
Output per hour of all persons	67.2	74.6	81.2	96.0	103.2	110.1	112.0	108.6	110.7	114.6	116.4	117.0	115.7
Compensation per hour	45.6	59.0	74.5	89.4	121.9	138.4	149.2	163.0	179.3	194.2	209.6	227.6	248.0
Real compensation per hour	63.3	73.6	84.1	94.6	104.8	110.5	112.1	110.4	111.2	113.9	115.5	116.5	114.1
Unit labor cost	68.0	79.1	91.7	93.2	118.1	125.7	133.2	150.1	161.9	169.5	180.1	194.6	214.4
Unit nonlabor payments	71.4	80.1	84.4	95.8	106.0	117.4	117.8	124.7	145.9	156.0	163.8	169.9	178.6
Implicit price deflator	69.1	79.4	89.2	94.1	114.0	122.9	127.9	141.4	156.4	164.8	174.5	186.1	202.1
Nonfinancial corporations:													
Output per hour of all employees	(¹)	(¹)	80.6	96.9	103.7	110.6	112.9	108.7	112.2	115.8	117.0	118.1	117.7
Compensation per hour	(¹)	(¹)	76.0	90.1	121.8	136.7	147.6	161.7	177.9	192.7	208.0	225.2	245.2
Real compensation per hour	(¹)	(¹)	85.7	95.3	104.7	109.1	110.9	109.5	110.4	113.0	114.6	115.3	112.8
Unit labor cost	(¹)	(¹)	94.3	93.0	117.4	123.7	130.7	148.8	158.6	166.4	177.7	190.6	208.4
Unit nonlabor payments	(¹)	(¹)	90.8	100.1	103.5	114.8	116.8	124.8	148.1	156.8	164.4	170.6	179.5
Implicit price deflator	(¹)	(¹)	93.1	95.5	112.5	120.5	125.8	140.2	154.9	163.0	173.0	183.5	198.1
Manufacturing:													
Output per hour of all persons	65.8	75.0	79.8	98.4	105.0	115.7	118.9	113.0	118.8	124.0	127.7	128.3	129.5
Compensation per hour	45.6	61.2	78.0	91.1	122.3	136.6	146.5	161.7	181.1	196.1	212.7	230.2	251.3
Real compensation per hour	63.3	76.3	88.0	96.4	105.1	109.0	110.1	109.5	112.3	115.0	117.2	117.8	115.6
Unit labor cost	69.4	81.6	97.7	92.6	116.5	118.1	123.2	143.1	152.4	158.2	166.6	179.4	194.1
Unit nonlabor payments	82.3	88.6	92.3	103.3	96.2	107.4	106.4	105.6	128.4	139.6	147.4	152.4	(¹)
Implicit price deflator	73.3	83.8	96.1	95.9	110.3	114.8	118.0	131.6	145.1	152.5	160.7	171.1	(¹)

¹ Not available.

32. Annual percent change in productivity and related data, 1969-79

Item	Year											Annual rate of change	
	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1950-79	1960-79
Private business sector:													
Output per hour of all persons	0.2	0.7	3.3	3.4	1.9	-3.0	2.1	3.5	1.8	0.5	-0.9	2.5	2.1
Compensation per hour	6.9	7.2	6.7	6.2	8.2	9.2	10.0	8.8	8.0	8.5	9.3	5.9	6.9
Real compensation per hour	1.4	1.2	2.3	2.8	1.9	-1.6	.8	2.8	1.4	0.8	-1.7	2.5	2.0
Unit labor cost	6.6	6.4	3.3	2.8	6.2	12.5	7.7	5.0	6.0	8.0	10.3	3.3	4.7
Unit nonlabor payments	1.0	1.2	6.8	5.3	5.0	4.4	15.3	5.1	4.8	5.3	5.8	3.0	4.2
Implicit price deflator	4.7	4.7	4.4	3.6	5.8	9.8	10.1	5.0	5.6	7.1	8.9	3.2	4.5
Nonfarm business sector:													
Output per hour of all persons	-2	.2	3.0	3.6	1.7	-3.1	2.0	3.5	1.5	.5	-1.1	2.1	1.9
Compensation per hour	6.4	6.8	6.7	6.4	7.8	9.2	10.0	8.3	7.9	8.6	8.9	5.6	6.7
Real compensation per hour	1.0	.8	2.3	3.0	1.5	-1.6	.8	2.4	1.4	.9	-2.1	2.2	1.7
Unit labor cost	6.7	6.5	3.5	2.7	6.0	12.7	7.9	4.7	6.3	8.0	10.2	3.4	4.7
Unit nonlabor payments	.4	1.6	6.7	3.8	.3	5.9	17.0	6.9	5.0	3.7	5.1	2.9	4.0
Implicit price deflator	4.5	4.9	4.5	3.1	4.1	10.5	10.6	5.4	5.9	6.6	8.6	3.3	4.5
Nonfinancial corporations:													
Output per hour of all employees	.4	-0	3.3	3.1	2.1	-3.7	3.2	3.2	1.1	1.0	-4	(¹)	1.9
Compensation per hour	6.8	6.8	6.2	5.7	7.9	9.6	10.0	8.3	7.9	8.3	8.9	(¹)	6.5
Real compensation per hour	1.3	.8	1.8	2.4	1.6	-1.3	.8	2.4	1.4	.6	-2.1	(¹)	1.6
Unit labor cost	6.3	6.8	2.7	2.5	5.7	13.8	6.6	4.9	6.8	7.3	9.3	(¹)	4.5
Unit nonlabor payments	0	.5	7.3	3.3	1.8	6.8	18.7	5.8	4.9	3.8	5.2	(¹)	3.6
Implicit price deflator	4.1	4.6	4.2	2.8	4.4	11.5	10.5	5.2	6.1	6.1	7.9	(¹)	4.2
Manufacturing:													
Output per hour of all persons	1.3	-1	5.2	4.8	2.8	-5.0	5.1	4.4	3.0	.5	0.9	2.5	2.5
Compensation per hour	6.6	7.1	6.2	5.2	7.2	10.4	12.0	8.3	8.5	8.2	9.2	5.5	6.5
Real compensation per hour	1.2	1.1	1.9	1.8	.9	-5	2.6	2.4	1.9	.5	-1.9	2.1	1.6
Unit labor cost	5.2	7.2	.9	4	4.3	16.1	6.6	3.8	5.3	7.7	8.2	2.9	3.9
Unit nonlabor payments	-4.4	-3.2	9.2	2.3	-1.0	-7	21.6	8.8	5.5	3.4	(¹)	2.5	2.5
Implicit price deflator	2.3	4.2	3.1	1.0	2.8	11.5	10.2	5.1	5.4	6.5	(¹)	2.6	3.5

¹ Not available.

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

[1967 = 100]

Item	Annual average		Quarterly indexes										
			1977		1978				1979				1980
	1978	1979	III	IV	I	II	III	IV	I	II	III	IV	I
Private business sector:													
Output per hour of all persons	119.3	118.3	119.6	119.0	118.5	119.1	119.8	119.9	119.0	118.4	118.0	117.9	117.6
Compensation per hour	231.5	253.2	215.6	218.8	224.5	228.8	233.9	238.7	245.1	250.6	256.0	260.6	267.6
Real compensation per hour	118.5	116.4	117.8	117.9	118.8	118.3	118.3	118.1	118.0	.7.1	115.9	114.3	112.9
Unit labor cost	194.0	214.0	180.2	183.9	189.4	192.1	195.2	198.0	205.9	211.7	217.0	221.1	227.5
Unit nonlabor payments	174.3	184.4	167.9	168.5	164.8	173.9	177.0	181.2	180.8	183.6	185.5	188.2	189.8
Implicit price deflator	187.2	203.8	176.0	178.6	180.9	185.8	188.9	192.9	197.2	202.0	206.1	209.7	214.5
Nonfarm business sector:													
Output per hour of all persons	117.0	115.7	116.9	116.4	116.1	116.7	117.5	117.7	116.8	115.5	115.1	115.4	114.9
Compensation per hour	227.6	248.0	211.5	215.1	220.9	225.0	229.8	234.7	240.5	245.1	250.2	255.9	262.2
Real compensation per hour	116.5	114.1	115.6	115.9	116.9	116.3	116.2	116.1	115.8	114.6	113.3	112.3	110.6
Unit labor cost	194.6	214.4	181.0	184.8	190.2	192.8	195.6	199.4	206.0	212.2	217.3	221.8	228.1
Unit nonlabor payments	169.9	178.6	167.1	165.9	161.1	169.1	173.0	176.0	174.3	177.6	180.4	182.5	185.5
Implicit price deflator	186.1	202.1	176.2	178.3	180.2	184.7	187.8	191.4	195.1	200.3	204.7	208.4	213.5
Nonfinancial corporations:													
Output per hour of all employees	118.1	117.7	117.7	116.9	116.9	118.1	118.7	119.0	118.4	117.5	117.4	117.3	117.1
Compensation per hour	225.2	245.2	209.9	213.2	218.9	222.8	227.3	231.7	237.9	242.5	247.6	252.6	258.9
Real compensation per hour	115.3	112.8	114.7	114.9	115.8	115.2	115.0	114.6	114.6	113.3	112.1	110.8	109.2
Total unit costs	193.3	210.4	182.4	186.3	190.8	191.6	194.0	196.8	202.3	208.0	213.2	218.0	224.6
Unit labor cost	190.6	208.4	178.4	182.3	187.3	188.7	191.5	194.8	201.0	206.4	210.8	215.3	221.1
Unit nonlabor costs	201.8	216.6	194.8	198.7	201.5	200.8	201.6	203.1	205.5	213.2	220.5	226.1	235.4
Unit profits	127.2	127.8	130.9	122.2	107.1	129.2	132.7	138.7	130.3	129.2	127.5	124.0	118.6
Implicit price deflator	183.5	198.1	174.7	176.8	178.3	182.3	184.9	188.2	191.6	196.3	200.4	204.0	208.8
Manufacturing:													
Output per hour for all persons	128.3	129.5	128.9	128.3	126.3	127.8	129.5	129.9	128.7	129.2	130.1	129.6	128.9
Compensation per hour	230.2	251.3	214.8	218.3	223.8	227.3	232.0	237.2	243.2	248.9	253.7	259.0	265.1
Real compensation per hour	117.8	115.6	117.4	117.6	118.4	117.5	117.4	117.3	117.1	116.3	114.9	113.6	111.8
Unit labor cost	179.4	194.1	166.7	170.1	177.2	177.9	179.1	182.7	189.0	192.6	195.0	199.8	205.8

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

[1967=100]

Item	Quarterly percent change at annual rate						Percent change from same quarter a year ago					
	III 1978 to IV 1978	IV 1978 to I 1979	I 1979 to II 1979	II 1979 to III 1979	III 1979 to IV 1979	IV 1979 to I 1980 ^P	IV 1977 to IV 1978	I 1978 to I 1979	II 1978 to II 1979	III 1978 to III 1979	IV 1978 to IV 1979	I 1979 to I 1980 ^P
	Private business sector:											
Output per hour of all persons	0.3	-3.0	-2.2	-1.4	-0.3	^r -0.7	0.8	0.4	-0.6	-1.6	-1.7	^r -1.2
Compensation per hour	8.5	11.1	9.3	8.8	7.4	^r 11.2	9.1	9.2	9.5	9.4	^r 9.3	^r 9.2
Real compensation per hour	-9	-1	-3.1	-4.0	-5.4	^r -4.9	.1	-6	-1.0	-2.0	-3.2	^r -4.4
Unit labor cost	8.1	14.6	11.8	10.3	7.8	^r 12.0	8.3	8.7	10.2	11.2	11.1	^r 10.5
Unit nonlabor payments	9.9	-1.0	^r 6.6	4.2	^r 6.0	^r 3.4	7.5	9.7	5.6	4.8	3.9	^r 5.0
Implicit price deflator	8.7	9.3	10.1	8.3	7.2	^r 9.3	8.0	9.0	8.7	9.1	8.7	^r 8.7
Nonfarm business sector:												
Output per hour of all persons	.8	-3.2	-4.1	-1.4	.7	^r -1.4	1.1	.5	-1.0	-2.0	-2.0	^r -1.5
Compensation per hour	8.8	10.4	7.9	8.5	9.4	^r 10.2	9.1	8.9	9.0	8.9	9.0	^r 9.0
Real compensation per hour	-6	-7	-4.4	-4.3	-3.7	^r -5.8	.1	-9	-1.5	-2.5	-3.3	^r -4.5
Unit labor cost	8.0	14.0	12.5	10.1	8.6	^r 11.8	7.9	8.3	10.1	11.1	11.3	^r 10.7
Unit nonlabor payments	7.3	-3.9	7.8	6.6	4.6	^r 16.8	6.1	8.2	5.0	4.3	3.7	^r 6.5
Implicit price deflator	7.8	8.1	11.0	9.0	7.4	^r 10.3	7.3	8.3	8.5	9.0	8.9	^r 9.4
Nonfinancial corporations:												
Output per hour of all employees	1.1	-2.1	-2.9	-0.2	-0.5	^P 0.7	1.8	1.3	-5	-1.0	-1.4	^P -1.1
Compensation per hour	8.1	11.0	8.0	8.6	8.3	^P 10.4	8.7	8.7	8.9	8.9	9.0	^P 8.8
Real compensation per hour	-1.3	-1	-4.3	-4.3	-4.6	^P 9.8	-2	-1.1	-1.6	-2.5	-3.3	^P -4.7
Total unit costs	5.9	11.7	11.8	10.2	9.3	^P 12.7	5.6	6.1	8.6	9.9	10.8	^P 11.0
Unit labor costs	6.9	13.4	11.2	8.8	8.9	^P 11.1	6.8	7.3	9.4	10.1	10.6	^P 10.0
Unit nonlabor costs	2.9	6.8	13.5	14.6	10.6	^P 17.3	2.2	2.5	6.2	9.4	11.3	^P 14.0
Unit profits	19.5	-22.1	-3.4	-5.3	10.4	^P -16.3	13.6	21.7	0	-3.9	-10.6	^P -9.0
Implicit price deflator	7.3	7.6	10.2	8.6	7.3	^P 9.8	6.4	7.5	7.7	8.4	8.4	^P 9.0
Manufacturing:												
Output per hour of all persons	^r 1.0	^r -3.6	^r 1.8	2.7	-1.5	^r -2.3	^r 1.2	^r 1.9	^r 1.2	^r 0.4	^r 0.2	^r 0.1
Compensation per hour	9.3	10.4	9.8	8.0	8.6	9.8	8.7	8.6	9.5	9.3	9.2	9.0
Real compensation per hour	^r -2	^r -7	-2.7	-4.8	-4.4	-6.1	-3	-1.1	-1.1	-2.1	-3.2	-4.5
Unit labor cost	^r 8.2	^r 14.5	7.9	5.2	10.3	^r 12.4	^r 7.4	^r 6.6	8.2	8.9	^r 9.4	^r 8.9

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, 1975 to date

[In percent]

Sector and measure	Annual average					Quarterly average							
	1975	1976	1977	1978	1979	1978		1979				1980 ^P	
						III	IV	I	II	III	IV		I
Wage and benefit settlements, all industries:													
First-year settlements	11.4	8.5	9.6	8.3	9.0	7.2	6.1	2.8	10.5	9.0	8.5	8.6	
Annual rate over life of contract	8.1	6.6	6.2	6.3	6.6	5.9	5.2	5.3	7.8	6.1	6.0	6.4	
Wage rate settlements, all industries:													
First-year settlements	10.2	8.4	7.8	7.6	7.4	7.5	7.4	5.7	8.9	6.8	6.3	7.8	
Annual rate over life of contract	7.8	6.4	5.8	6.4	6.0	6.4	5.9	6.6	7.2	5.1	5.3	6.3	
Manufacturing:													
First-year settlements	9.8	8.9	8.4	8.3	6.9	8.4	9.5	8.7	9.7	6.3	5.6	7.0	
Annual rate over life of contract	8.0	6.0	5.5	6.6	5.4	7.2	7.4	7.7	8.1	4.7	4.2	5.6	
Nonmanufacturing (excluding construction):													
First-year settlements	11.9	8.6	8.0	8.0	7.6	7.4	6.4	3.2	8.5	9.4	7.8	9.1	
Annual rate over life of contract	8.0	7.2	5.9	6.5	6.2	5.9	5.1	5.6	5.8	6.5	7.4	7.1	
Construction:													
First-year settlements	8.0	6.1	6.3	6.5	8.8	7.0	8.4	9.7	8.7	9.7	7.5	9.6	
Annual rate over life of contract	7.5	6.2	6.3	6.2	8.3	7.2	7.1	8.2	8.3	8.5	7.6	9.3	

36. Effective wage adjustments going into effect in major collective bargaining units, 1975 to date

[In percent]

Sector and measure	Average annual changes					Average quarterly changes								
	1975	1976	1977	1978	1979	1978				1979				1980 ^P
						I	II	III	IV	I	II	III	IV		I
Total effective wage rate adjustment, all industries	8.7	8.1	8.0	8.2	9.1	1.3	2.6	2.7	1.4	1.4	2.6	3.3	1.6	1.3
Change resulting from:														
Current settlement	2.8	3.2	3.0	2.0	3.0	.5	.6	.5	.4	.2	1.1	1.0	.5	.3
Prior settlement	3.7	3.2	3.2	3.7	3.0	.6	1.4	1.2	.5	.6	1.0	1.0	.4	.5
Escalator provision	2.2	1.6	1.7	2.4	3.1	.3	.6	1.0	.5	.6	.5	1.2	.7	.6
Manufacturing	8.5	8.5	8.4	8.6	9.6	1.4	2.2	2.9	1.9	1.5	2.3	3.2	2.4	1.6
Nonmanufacturing	8.9	7.7	7.6	7.9	8.8	1.3	2.9	2.5	1.1	1.4	2.8	3.4	1.0	1.1

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	3,468		1,530		22,600	.18
1955	4,320		2,650		28,200	.22
1956	3,825		1,900		33,100	.24
1957	3,673		1,390		16,500	.12
1958	3,694		2,060		23,900	.18
1959	3,708		1,880		69,000	.50
1960	3,333		1,320		19,100	.14
1961	3,367		1,450		16,300	.11
1962	3,614		1,230		18,600	.13
1963	3,362		941		16,100	.11
1964	3,655		1,640		22,900	.15
1965	3,963		1,550		23,300	.15
1966	4,405		1,960		25,400	.15
1967	4,595		2,870		42,100	.25
1968	5,045		2,649		49,018	.28
1969	5,700		2,481		42,869	.24
1970	5,716		3,305		66,414	.37
1971	5,138		3,280		47,589	.26
1972	5,010		1,714		27,066	.15
1973	5,353		2,251		27,948	.14
1974	6,074		2,778		47,991	.24
1975	5,031		1,746		31,237	.16
1976	5,648		2,420		37,859	.19
1977	5,506		2,040		35,822	.17
1978	4,230		1,623		36,922	.17
1979: April	512		426		5,126	.27
May	556		132		3,682	.19
June	536		137		2,989	.16
July	471		168		3,001	.16
August	463		119		3,152	.15
September	464		135		2,319	.13
October	443		230		2,968	.15
November	257		91		2,720	.15
December	134		42		1,976	.11
1980: January ^P	352	441	207	292	3,142	.16
February ^P	354	590	114	332	3,025	.17
March ^P	396	631	123	310	2,705	.14
April	425	663	116	231	2,786	.14

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. \$18 a year, single copy, \$2.50.

Employment and Earnings. A comprehensive monthly report on employment, hours, earnings, and labor turnover by industry, area, occupation, et cetera \$22 a year, single copy \$2.75.

Occupational Outlook Quarterly. A popular periodical designed to help high school students and guidance counselors assess career opportunities. \$6 for four issues, single copy \$1.75.

Current Wage Developments. A monthly report about collective bargaining settlements and unilateral management decisions about wages and benefits; statistical summaries. \$12 a year, single copy \$1.35.

Producer Prices and Price Indexes. A comprehensive monthly report on price movements of both farm and industrial commodities, by industry and stage of processing. \$17 a year, single copy \$2.25.

CPI Detailed Report. A monthly periodical featuring detailed data and charts on the Consumer Price Index. \$15 a year, single copy \$2.25.

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. Make checks payable to the Superintendent of Documents. Among the bulletins and handbooks currently in print are these:

Occupational Outlook Handbook, 1978-79 Edition. Bulletin 1955. A useful resource supplying valuable assistance to all persons seeking satisfying and productive employment. \$8, paperback; \$11 hard cover.

BLS Handbook of Labor Statistics 1978. Bulletin 2000. A 604-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.

BLS Measures of Compensation. Bulletin 1941. An introduction to the various measures of employee compensation; describes each series, the manner in which it is developed, its uses and limitations. \$2.75.

Occupational Projections and Training Data. Bulletin 2020. Presents both general and detailed information on the relationship between occupational requirements and training needs. (Updates Bulletin 1918 published in 1976.) \$3.25.

Technological Change and its Labor Impact in Five Energy Industries. Bulletin 2005. A 64-page study appraising major technological change and discussing the impact of these changes on productivity and occupations over the next 5 to 10 years. \$2.40.

BLS Publications, 1972-77. Bulletin 1990. A numerical listing and subject index of bulletins and reports issued by the Bureau from 1972 through 1977, supplementing Bulletin 1749, covering 1886-1971. \$1.80.

International Comparisons of Unemployment. Bulletin 1979. Brings together all of the Bureau's work on international unemployment comparisons. Describes the methods of adjusting foreign unemployment rates in 8 countries to U.S. concepts. \$3.50.

Productivity Indexes for Selected Industries, 1979 Edition. Bulletin 2054. A 190-page report of indexes of output, employment, and employee hours in selected industries from 1954 to 1978. This edition contains measures for three industries previously not covered, as well as components of previously published measures in 10 industries. \$5.50.

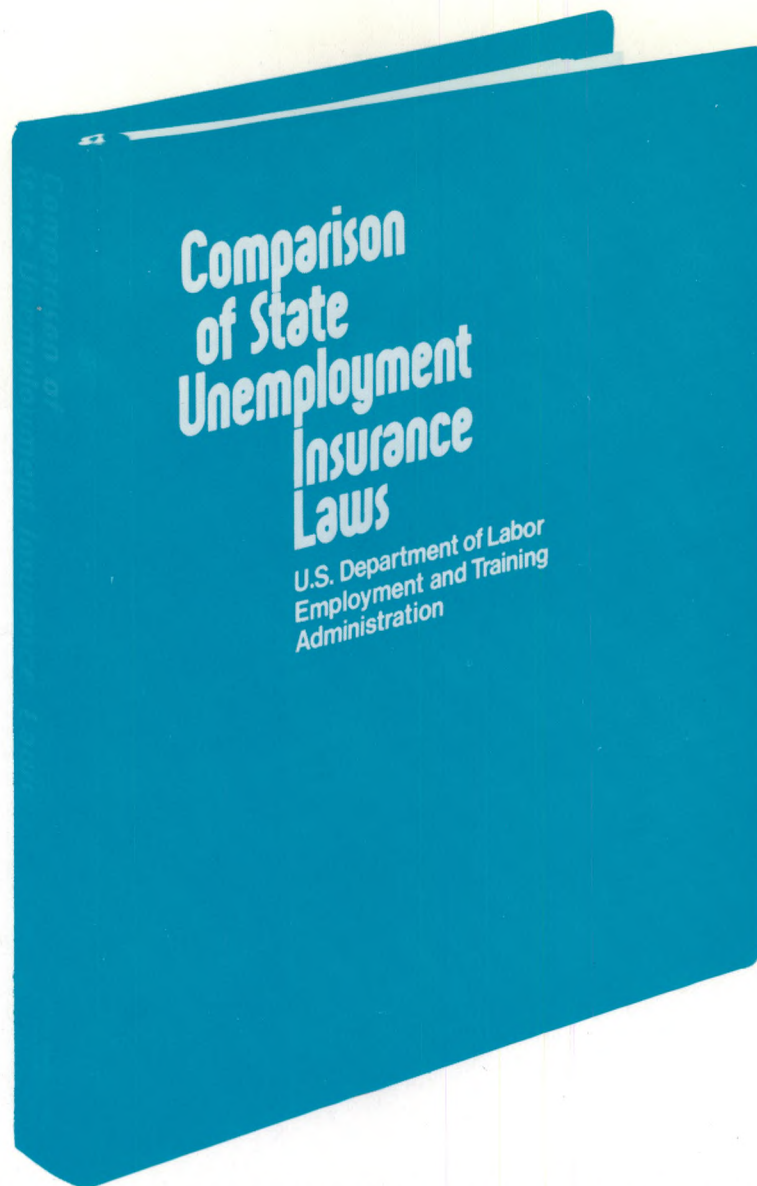
Profiles of Occupational Pay: A Chartbook. Bulletin 2037. A graphic illustration of some of the factors that affect workers' earnings. This three-part presentation looks at wage variations among and within occupations and portrays characteristics of high- and low-paying urban areas and manufacturing industries. \$3.50.

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.

How the Government Measures Unemployment. Report 505. A concise report providing a background for appraising developments in the area of unemployment.

Directory of BLS Studies in Industrial Relations 1960-78. Report 550. A listing of studies prepared by the Division of Industrial Relations as part of the Bureau's regular program of data collection and analysis in the field of industrial relations.



Comparison of State Unemployment Insurance Laws, issued January 1, 1978, summarizes and compares significant provisions of unemployment insurance laws of the 50 States, District of Columbia, Puerto Rico and the Virgin Islands. The looseleaf format permits pages to be removed and replaced by pages with current data.

- Gives information on employer and employee coverage, financing methods, benefit payments, eligibility requirements, and administrative organization.
- Includes rules, regulations, opinions of attorneys general, or court decisions that implement State Statutes, with notes indicating their source.
- Provides factual information, by State, in Tables.

- Compares the laws of four States which provide benefits for unemployment due to non-occupational disability.
- Includes brief description of unemployment insurance programs for Federal civilian employees and ex-servicemen and Federal training allowances and readjustment programs administered by State employment security agencies.

Comparison of State Unemployment Insurance Laws, issued January 1, 1978, distributed free to State agencies, is for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402. Subscription price for basic document and 5 revisions is \$12 domestic and \$15 foreign. Send correspondence on circulation and subscription matters (including address changes) to the Superintendent of Documents.

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

