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Henry Lowenstern, Editor-in-Chief
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Labor Month In Review

WORK DISABILITY. The U.S. Census Bureau published a report on persons with work disabilities. The study, based on data for 1982 from the Current Population Survey, shows that the overall rate of work disability among persons age 16 to 64 was 8.9 percent, but the prevalence rate varied among demographic, social, and economic groups. The rate among men was somewhat higher than the rate among women. Other factors strongly associated with the likelihood of having a work disability included age, education, and race. Here are some highlights:

Age. The effect of age on work disability status was relatively minor for persons under 45 but was quite pronounced for persons above that age. The prevalence rate increased from 7.1 percent for persons 35 to 44 years of age to 12.3 percent for persons 45 to 54 years and to 24.1 percent for persons 55 to 64 years. (The study also presents data on persons age 65 to 74.)

Education. The exact correlation between years of schooling and the likelihood of having a work disability is probably complex, but the association between the two characteristics is very strong. Among persons age 25 to 64, the work disability prevalence rate varied from 31.0 percent among persons with less than an eighth-grade education to 9.0 percent among those with a high school education and 4.6 percent among college graduates. It could be argued that the correlation between disability and low educational attainment runs in both directions. On the one hand, low levels of schooling may lead to participation in high-risk occupations. On the other hand, certain disabilities may make it more difficult to attend and complete school. A further hypothesis is that a common set of factors (that is, economic deprivation in childhood) may lead both to low educational attainment and to an increased likelihood of becoming disabled.

Part of the observed relationship between education and work disability may be due to the effect of age because age is positively associated with work disability and has a negative association with education. However, the data indicate that the relationship between education and work disability exists even when age is held constant. For example, among persons 45 to 54 years of age, the work disability rate varied from 28.2 percent among those with less than an eighth-grade education to 9.5 percent among high school graduates and 5.8 percent among college graduates.

Race and Hispanic origin. Blacks were more likely than whites to have a work disability. Persons of Hispanic origin, however, were no more likely than whites and were less likely than blacks to have a work disability. That the Hispanic rate was not higher is somewhat puzzling in view of the strong negative association between years of schooling and disability status. Only about 50 percent of Hispanic persons 25 to 64 years old had completed high school, compared with about 62 percent of blacks and 79 percent of whites in the same group. These differences would lead one to expect a higher work disability rate among Hispanic persons than was actually observed.

Other characteristics. The prevalence of work disability varied by several other characteristics including region and residence, marital status, household relationship, poverty status, and program participation status.

Among the areas of the United States with relatively high prevalence rates for work disability were the central cities of the Northeast (11.3 percent) and the nonmetropolitan areas of the South (11.7 percent). Within metropolitan areas, the prevalence rate was generally higher in the central cities than in the areas outside of central cities.

Relationships existed between work disability status and marital status and between work disability status and household relationship. The prevalence rate was higher among widowed, divorced, or separated persons than among married persons and the rate among unrelated individuals was considerably higher than the rate among family members. The data suggest that the disadvantage of having a work disability is often compounded by the lack of a family support system.

Persons with a work disability were economically disadvantaged. This conclusion is supported by data showing a strong negative relationship between the level of personal income and the likelihood of having a work disability. Of the 13.1 million persons with a work disability, 3.4 million, or about 26 percent, were in poverty. The poverty rate for persons with no work disability was only about 10 percent. Work-disabled persons made up a disproportionate share of the persons participating in some of the major assistance programs. Of the 12.1 million persons in the age universe who received food stamps in 1981, for example, approximately 23 percent were work-disabled. The work disability rate among Medicaid recipients was about 37 percent.

The Bureau of the Census study is based on a redesigned March Income Supplement to the Current Population Survey. The redesign was undertaken after test results suggested that the reporting of income could be improved by the use of a screening technique in which detailed questions about particular income types are asked only of those persons who have been identified as likely to have received the income type. Questions about disability status were added in order to identify those persons who should be asked about their receipt of disability income.

Additional information and tables showing the survey results appear in the publication, *Labor Force Status and Other Characteristics of Persons With a Work Disability: 1982, Current Population Reports, Special Studies,* Series P-23, No. 127 (Bureau of the Census, 1983). The report is available from the Government Printing Office, Washington, D.C. 20402 at a cost of $4.50. □

Layoffs and permanent job losses: workers' traits and cyclical patterns

Job losers were heavily concentrated among blue-collar workers in 1982; permanent losses, as opposed to layoffs, were higher during the latest recession than during any other economic downturn

ROBERT W. BEDNARZIK

Layoffs are probably the most visible and, thus, the most widely recognized form of unemployment in the United States, as recessionary job cutbacks receive broad coverage in the media. It is, therefore, surprising that little empirical analysis, especially prior to the mid-seventies, was done on this group.[1] This stems, in part, from the fact that traditional theories of unemployment did not consider a distinction between layoffs and other types of unemployment—permanent separations, quits, and labor force entries and reentries—to be of significant importance.

This article discusses the "uniqueness" of persons on layoff as distinguished from those who have been permanently separated from their jobs. Data for each group are available back to 1967, when the "reason for unemployment" was first identified in the Current Population Survey (CPS), although they were not tabulated and published separately until 1976. Using these data, demographic and occupational and industry profiles of persons on layoff and those permanently separated are presented. Also, the cyclical variability in the number of workers on layoff relative to the number permanently separated, together with each group's job search and job change behavior and duration of unemployment, is examined to determine its role in short-run and long-run unemployment patterns. For example, data show that, compared with prior recessions, a greater proportion of the increase in unemployment in the recent recession is attributable to workers who were permanently separated from their jobs. Layoffs, which were concentrated among factory workers, were also severe, but not much different from the deep 1973–75 economic downturn.

On the whole, workers permanently separated were more likely than those on layoff (of whom most were recalled) to change jobs and their duration of unemployment was longer. However, there was still a substantial amount of job search among those on layoff, as many either did not expect to be recalled in the near future or thought their chances were better elsewhere. This raises questions about the CPS layoff classification. Perhaps, the term "layoff" is somewhat ambiguous to respondents and may be interpreted by some to mean job termination.

In the CPS, unemployment status is ascertained primarily from a series of questions that determine, for persons not working, job search activity and availability.[2] For example, permanently separated workers are those who lost their last job or business (for example, they were fired, plant closed down, company moved, or there was a permanent reduction in staff), do not expect to be recalled, are actively looking for another job, and are currently available for work.

Persons on layoff, however, are determined from a sep-

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arate set of questions and are not required to meet the job-seeking test to be counted as unemployed. Respondents who did not work at all during the survey reference week are asked: "Did you have a job (or business) from which you were temporarily absent or on layoff last week?" Those giving affirmative responses are then asked to give the reason for their absence. Anyone who reports being laid off from a regular job is regarded as unemployed. Thus, laid-off workers are those who report layoff as the reason for absence from their regular job. Although the CPS definition of layoff is quite clear, the CPS layoff questions are subject to different respondent interpretations because inherent in the classification (but not specified in any question) is an expectation of recall to the job.[3] However, since a special CPS followup survey shows that most of the workers on layoff who reported that they did not expect to be recalled (those who may have been inappropriately classified as on layoff) were also looking for work, they would still have been counted as unemployed—permanently separated.

Profile of workers who lose jobs

On average, 2.1 million persons were classified as being on layoff in 1982, a little more than one-sixth of total unemployment and two-sixths of all job losers. Exactly who are they, and how do they differ from the 4 million workers who were permanently separated from their jobs? Does the likelihood of being laid off versus permanently separated differ across worker groups? For example, are demographic differences maintained within individual occupational and industry groups?

Age, sex, race. The age-sex composition of persons on layoff was similar to that of workers permanently separated in 1982: for every 100 laid-off workers, roughly 65 were men, 30 were women, and 5 were teenagers. (See table 1). Given that there are more men than women or teenagers in the labor force, one would expect men to predominate among persons who have lost jobs. However, the percentage of men suffering job loss was disproportionately high. Men accounted for only slightly more than half of the civilian labor force in 1982, and even less of total unemployment.

Table 1. Job losers by sex, age, and race, 1982 annual averages

Characteristics	Layoffs			Permanent separations		
	Number (in thousands)	Percent of total unemployment	Percent of unemployment in each group	Number (in thousands)	Percent of total unemployment	Percent of unemployment in each group
Total, 16 years and over	2,127	100.0	22.4	4,141	100.0	43.6
Teenagers	111	5.2	5.6	348	8.4	17.6
Men	1,394	65.5	27.4	2,571	62.1	50.5
Women	622	29.2	17.2	1,222	29.5	33.8
White	1,795	84.4	21.8	3,154	76.2	38.3
Black and other	332	15.6	13.6	987	23.8	40.5

Moreover, the trend over the past decade has shown a gradual widening between the proportions of layoffs accounted for by men and by women.

A greater percentage of unemployment among men than among women or teenagers was attributed to layoff. In 1982, for example, 27 percent of all unemployed men were on layoff, compared with 17 percent of women and 6 percent of teenagers. Similarly, a higher proportion of male unemployment was the result of being permanently separated from a job. The main reason was that industries traditionally staffed by men tend to be more cyclically sensitive than those staffed by women. In 1982, for example, 7 of 10 workers in the sensitive goods-producing sector were men 20 years and older. A much larger share of unemployment among women can be attributed to labor force reentry, whereas for youth, it is new entry.

Also, for men, duration of unemployment because of job loss was slightly longer than for women.[4] By far, teenagers' duration of unemployment was the shortest. Overall, and not surprisingly, the duration of unemployment for workers on layoff in 1982 was several weeks shorter than that for workers whose jobs were permanently terminated. (See table 2.)

Although black and other workers (hereafter referred to as black) are clearly overrepresented among total unemployment, this is not the case among those on layoff. Sixteen percent of persons on layoff in 1982 were black, near their 13 percent share of the labor force. This pattern has prevailed for more than a decade. On the other hand, blacks accounted for 24 percent of workers who were permanently separated—a figure that has worsened over time—comparable to their disproportionate share of unemployment overall.

Blacks were only slightly more likely than whites to suffer a permanent job separation in 1982. Unemployment attributable to layoff made up a smaller share of total black joblessness (14 percent) than white (22 percent). This is partially explained by the fact that the group most prone to layoff, men age 20 and over, accounts for a smaller share of overall black joblessness than white. Duration of unemployment from layoff as well as from a permanent job separation was longer for black than white workers. (See table 2.)

Industry. The commonly held perception that job loss occurs most often in goods-producing industries was indeed borne out by the data for 1982. However, this was less the case than a decade earlier. Also, there were a number of differences among industrial groups, particularly among factory workers, as to the percentage of their unemployment that resulted from layoff.

In 1982, 51 percent of all layoffs and 28 percent of permanent job separations occurred in manufacturing industries; approximately two-thirds of each were in durable goods. Fifteen percent of those on layoff in 1982 were in the construction industry, 10 percent in trade, and 7 percent in

Table 2. Job losers' duration of unemployment, by sex and race, 1982

[In percent]

Duration	Layoffs						Permanent separations					
	Total	Men	Women	Teenagers	White	Black and other	Total	Men	Women	Teenagers	White	Black and other
Job losers:												
Number (in thousands)	2,127	1,394	622	109	1,795	332	4,141	2,571	1,222	348	3,154	987
Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Duration of unemployment:	40.3	38.7	41.0	57.8	40.0	41.6	25.3	22.7	27.1	37.6	25.2	25.3
5 to 10 weeks	21.6	21.2	22.3	21.1	22.3	18.4	21.0	20.3	21.1	25.6	21.6	19.3
11 to 14 weeks	9.6	9.8	10.1	10.1	9.9	8.1	10.1	10.1	10.3	9.5	10.3	9.3
15 to 26 weeks	15.2	16.3	14.5	7.3	15.3	15.1	20.1	20.4	20.0	17.1	22.4	27.4
27 weeks or more	13.3	14.0	13.2	3.7	13.4	15.1	23.6	26.4	21.5	10.1	20.5	18.7
Mean duration (weeks)	13.6	14.2	12.4	7.4	12.5	16.9	19.7	21.2	18.7	12.6	15.3	21.2

NOTE: The mean duration was estimated using the midpoints of the number of weeks in unemployed categories: 52 weeks was the assumed midpoint for the 27 weeks or more category.

services. Trade ranked a close second to manufacturing in permanent separations, followed by services, then construction. (See table 3.)

The proportion of layoffs and permanent job separations in the manufacturing industry has declined over the past decade, while services, trade, and government all increased. However, the goods industries—specifically manufacturing and construction—were, relative to their shares of total employment, still overrepresented by layoffs in 1982, while services and trade were underrepresented. The proportion of layoffs that occurred in the public sector was about equal to its share of total employment.

The layoff component of unemployment among service, trade, and government workers was still only around 10 percent each, compared with 40 percent among factory workers. Moreover, the likelihood of layoffs varied considerably among detailed manufacturing groups, perhaps related to the extent of their unionization because studies have shown that employment "adjustments through layoffs are substantially greater in unionized firms than comparable nonunionized firms."[5] The following tabulation shows the number and percent of unemployed workers on layoff in selected manufacturing industries in 1982, and the percent of each industry's employed wage and salary workers in labor organizations in May 1980:[6]

	Layoffs in 1982		*Percent union workers, May 1980*
	Number (in thousands)	*Percent*	
Automobiles	136	63.3	61.2
Primary metals	208	59.9	58.4
Machinery, except electrical	286	53.8	28.7
Apparel	149	47.0	25.1
Electrical equipment	193	46.6	26.9
Other transportation equipment	100	46.0	42.2
Textiles	83	45.8	14.9
Food and kindred products	171	38.0	37.5
Fabricated metals	190	37.8	36.1

Layoffs were relatively most important in automobile manufacturing (65 percent) and primary metals (60 percent), and accounted for nearly 40 percent or more of joblessness in most manufacturing industries. These industries also had a large segment of workers in labor organizations. For example, autos and primary metals ranked high in both percent of unemployment that stemmed from layoffs and percent of their wage and salary work force that were in labor unions. Union membership was actually the highest in the nonmanufacturing railroad industry, 82 percent in May 1980: two-thirds of this industry's unemployment in 1982 was attributable to layoffs.

Surprisingly, permanent separations among wage and salary workers as a percent of each group's unemployment did not differ much across major industries. The range was from 54 percent in the construction industry to 41 percent in government, although this latter figure was much higher than in previous recessions.

Occupation. As might be expected, the distribution of layoffs is more concentrated across occupations than across industries. Seventy-five percent of the workers on layoff in 1982 were blue-collar, an overwhelmingly disproportionate figure, given that blue-collar employment accounted for only 30 percent of total employment. The heaviest concentrations of blue-collar workers on layoff were among nontransport operatives and craftworkers. (See table 3.) White-collar workers' share of unemployment stemming from layoffs was only 16 percent, half of which was clerical workers. Among workers who were permanently separated from their jobs, blue-collar workers' share was 55 percent, and white-collar workers', 30 percent. There has been very little change in the occupational distribution of either job-loser group over the past 10 years.

Although blue-collar workers were three times as likely as white-collar workers in 1982 to suffer a job layoff, both groups were almost equally likely to be permanently separated from their jobs. The likelihood of job separation vis-a-vis layoff was higher, regardless of occupation.

Table 3. Job losers, by occupation and industry, 1982

Occupation and industry	Layoffs			Permanent separations		
	Number (in thousands)	Percent of total unemployment	Percent of unemployment in each occupation or industry	Number (in thousands)	Percent of total unemployment	Percent of unemployment in each occupation or industry
Total job losers, 16 years and over	2,127	100.0	22.4	4,141	100.0	43.6
Occupation						
White-collar workers	332	15.6	12.0	1,181	28.5	42.7
Professional and technical workers	73	3.4	12.7	253	6.1	43.7
Managers and administrators	41	1.9	9.9	214	5.2	57.4
Clerical workers	175	8.2	12.6	548	13.2	39.6
Salesworkers	42	2.0	10.8	166	4.0	42.8
Blue-collar workers	1,594	74.9	32.5	2,269	54.8	46.3
Craftworkers	457	21.4	32.7	693	16.7	49.6
Operatives, except transport	760	35.7	37.4	841	20.3	41.4
Transport equipment operatives	136	6.4	30.3	225	5.4	50.1
Nonfarm laborers	241	11.3	23.5	510	12.3	49.7
Service workers	162	7.6	10.0	615	14.9	37.8
Farmworkers	35	1.6	18.3	77	1.9	40.2
Industry[1]						
Mining	64	3.0	41.4	69	1.7	45.0
Construction	315	14.8	30.6	552	13.3	53.5
Manufacturing	1,089	51.2	39.3	1,154	27.9	41.7
Durables	793	37.3	44.3	722	17.4	40.4
Nondurables	296	13.9	30.1	433	10.5	44.0
Transportation and public utilities	121	5.7	30.5	186	4.5	46.7
Wholesale and retail trade	222	10.4	10.8	888	21.4	43.0
Finance, insurance, and real estate	19	0.9	6.8	126	3.0	45.6
Services	151	7.1	9.9	667	16.1	43.8
Government	17	3.5	9.4	324	7.8	40.5

[1] Excludes agricultural wage and salary workers and self-employed and unpaid family workers.

To determine if the observed differences in the likelihood of layoff among the major age-sex and racial groups were due to occupation or industry affiliation, the probability of layoff among each group in the same occupation or industry was examined. (See tables 4 and 5.) Generally, the concentration of worker groups in particular occupations and industries was crucial to the magnitude of their unemployment accounted for by layoffs. Among blue-collar workers in 1982, for example, the percentage of unemployment accounted for by layoff was nearly 35 percent for both men and women. The likelihood of unemployment attributable to layoff was also similar for men and women in other occupations. In other words, when occupations are examined individually, the probability of layoff among men being greater than that among women essentially disappears. Similarly, the layoff rate differentials by sex were much narrower in individual industries than for men and women overall. In the finance, insurance, and real estate industry, moreover, women were more likely than men to be laid off.[7] The black-white job-loss differential was, for the most part, unaffected by occupational and industry affiliation, although black workers in blue-collar occupations or in the goods sector were now noticeably more likely than white workers to suffer a permanent job separation. (See tables 4 and 5.)

Cyclical variation in job losses

The rapid shift in recent years within the manufacturing industry towards high technology firms and those making synthetics may have exacerbated an already high risk among workers in metals-based industries to lose their jobs in a recession.[8] In other words, in addition to the historical shift from goods to services, the factory shift away from metals-based industries will make it harder for unemployed workers formerly employed in these industries to reclaim their jobs.

Several factors—peak-to-trough changes, job search and job change propensity, recall rates, and duration of unemployment—were explored in an attempt to distinguish the pattern of job losses, both in the current economic downturn and in comparison to other contractions. Specifically, this analysis examines the cyclical variability of layoffs and permanent separations and describes the effect on short- and long-run *total* jobless rate patterns.

Changes during a recession. As one would expect, job loss accounts for a larger proportion of total unemployment during recessions, when employers are trying to reduce their costs in response to a slumping economy. In two previous studies, job-loser unemployment was found to be more cyclically sensitive than the other types of unemployment.[9] However, layoffs and permanent separations were not analyzed separately. A 1976 study which isolated the layoff component concluded that because layoffs increased as a proportion of total job losers between the peak and trough of each recessionary cycle, it was "the most cyclically sensitive component of the job-loser group and also more cyclical than any other categories of unemployed."[10]

Chart 1 compares the pattern of layoffs and permanent

separations as a percent of total unemployment over the 1968–82 period. The percentage of unemployment resulting from permanent separations averaged twice that resulting from layoffs. The gap narrowed considerably during recessions, however. The following tabulation shows the rise in job-loser unemployment as a percent of the increase in total unemployment for selected business cycles peak to trough:

	Job losers		
	Total	*Laid off*	*Permanently separated*
December 1969–November 1970 ..	60.0	22.9	37.1
November 1973–March 1975.....	72.6	35.3	37.3
January 1980–July 1980	82.3	46.3	36.0
July 1981–November 1982.....	84.5	31.4	53.1

Layoffs as a factor in increases in joblessness during recessions have been somewhat more extensive since the mild 1969–70 contraction, the 1980 episode notwithstanding.[11] It is common practice for employers to lay off workers at the outset of a recession before resorting to more permanent employee cutbacks, hence, the shortness of the 1980 downturn resulted in an abnormally high proportion of layoffs relative to increases in total joblessness. Thus, in determining the long-run pattern of layoffs in recessionary periods, the 1980 episode was not considered. Among the major age-sex groups, men 20 years and over were usually most affected by layoffs: in the 1981–82 downturn, for example, more than a third of their unemployment increase was a result of layoffs. In light of seniority practices, women, whose job tenure is likely to be shorter than that for men, are laid off first. What eventually happens as recessions lengthen is that the number of layoffs among men catches, then surpasses, the number among women. Also, although joblessness increases stemming from layoffs were higher among white than black workers, the bulk of the layoffs among black workers occurred earlier in the 1981–82 recession.

What really set the most recent recession apart from its predecessors, however, was the larger number of permanent separations. In the three downturns prior to the 1981 episode, the rise in unemployment as a result of permanent separations was about 37 percent. In contrast, more than half the rise in unemployment in the 1981–82 recession was a result of workers being permanently separated from their jobs. Of course, a partial explanation for this phenomenon could be that workers on layoff, after a lengthy wait for recall, perceived that their job was indeed lost and thus began the search for another one, therefore moving into the permanent separation category. Still, in total, job losers accounted for 85 percent of the increase in unemployment in the 1981–82 recession, higher than in any other recession since unemployment data by reason have been collected.

Job search and job change. Although the foregoing statistics clearly indicate the cyclical nature of job-loser unemployment, they do not provide any information about the search activity or likelihood of a job change among job losers. David Lilien noted that the speed at which job search-

Table 4. Job losers, by occupation, age, sex, and race, 1982

Job losers	Percent of total unemployment					Percent of unemployment in each occupation				
	Men	Women	Teenagers	White	Black and other	Men	Women	Teenagers	White	Black and other
Layoffs, total	100.0	100.0	100.0	100.0	100.0	27.4	17.2	5.6	21.8	13.6
White-collar workers	10.2	28.5	12.0	16.1	13.0	15.3	11.1	5.3	12.8	8.5
Professional and technical workers	3.2	4.7	—	3.7	2.4	15.7	10.3	—	14.0	7.4
Managers and administrators	2.3	1.3	0.9	2.1	1.2	12.4	5.7	10.0	10.3	8.0
Clerical workers	3.4	19.5	7.4	8.3	7.8	20.0	12.1	5.2	34.8	8.7
Salesworkers	1.4	3.1	3.7	2.1	1.5	12.2	11.2	6.5	11.1	9.8
Blue-collar workers	83.6	57.6	63.9	75.8	71.1	33.8	35.3	15.7	34.8	23.5
Craftworkers	30.1	3.7	12.0	23.2	12.3	33.9	28.4	16.9	34.4	21.8
Operatives, except transport	30.5	48.5	30.6	35.1	39.5	39.8	37.0	21.9	40.1	28.3
Transport equipment operatives	8.9	1.4	2.8	6.7	4.8	31.4	29.8	13.6	32.7	19.3
Nonfarm laborers	14.1	4.0	18.5	10.7	14.8	26.3	27.4	10.6	25.5	18.2
Service workers	4.4	12.7	19.4	6.5	13.6	12.6	10.3	5.8	10.5	8.9
Farmworkers	1.6	1.1	4.6	1.5	2.4	23.8	16.6	9.8	17.9	19.0
Permanent separations, total	100.0	100.0	100.0	100.0	100.0	50.5	33.8	17.6	38.3	40.5
White-collar workers	19.7	49.7	19.2	30.5	22.2	54.5	38.2	27.1	42.6	43.1
Professional and technical workers	6.3	7.9	1.4	6.4	5.2	54.0	35.0	22.7	43.1	47.2
Managers and administrators	5.5	5.6	1.1	6.0	2.6	54.9	46.4	40.0	51.6	52.0
Clerical workers	4.7	31.3	12.3	13.3	12.9	52.1	38.4	28.1	44.5	42.5
Salesworkers	3.5	4.8	4.3	4.7	1.7	58.5	34.9	24.2	44.2	33.3
Blue-collar workers	67.8	29.2	48.7	55.0	54.0	50.5	35.2	38.7	44.5	53.1
Craftworkers	24.4	2.8	8.9	18.6	10.7	50.7	42.0	40.3	48.5	56.4
Operatives, except transport	19.4	23.1	16.9	19.6	22.5	46.8	34.7	39.1	39.4	47.9
Transport equipment operatives	8.1	0.8	2.6	5.6	5.3	52.3	31.0	40.9	47.5	62.7
Nonfarm laborers	15.8	2.6	20.3	11.3	15.5	54.5	35.2	37.8	47.3	56.9
Service workers	10.7	19.9	28.4	12.6	22.0	55.6	31.5	27.3	35.6	42.7
Farmworkers	1.9	1.2	3.4	1.9	1.7	50.5	35.7	23.5	39.8	40.5

Table 5. Job losers, by industry, age, sex, and race, 1982

Job losers	Percent of total unemployment					Percent of unemployment in each industry				
	Men	Women	Teenagers	White	Black and other	Men	Women	Teenagers	White	Black and other
Layoffs, total	100.0	100.0	100.0	100.0	100.0	27.4	17.2	5.6	21.8	13.6
Mining	4.3	0.3	0.9	3.5	0.6	43.6	30.2	12.5	42.6	20.0
Construction	20.7	2.1	13.0	15.8	9.9	32.2	23.4	17.3	32.4	20.7
Manufacturing	49.4	58.8	31.5	50.6	55.1	42.7	36.4	22.2	41.5	31.1
Durables	41.2	31.7	20.4	37.1	38.6	48.0	38.3	28.2	46.6	35.5
Nondurables	8.2	27.1	12.0	13.5	16.6	27.4	34.4	17.3	31.9	24.1
Transportation and public utilities	7.2	3.1	1.9	5.8	5.4	33.9	23.2	10.5	32.3	23.0
Wholesale and retail trade	7.4	13.4	33.3	10.7	9.0	13.4	9.8	8.1	11.5	7.7
Finance, insurance, and real estate	0.4	2.1	–	0.9	0.9	6.0	7.9	–	7.1	5.2
Services	4.9	11.8	10.2	6.7	9.6	12.3	9.3	6.1	10.7	7.8
Government	2.2	6.6	3.7	2.9	7.2	9.9	11.0	3.3	10.5	7.6
Permanent separations, total	100.0	100.0	100.0	100.0	100.0	50.5	33.8	17.6	38.3	40.5
Mining	2.4	0.4	0.9	2.0	0.5	44.4	57.6	37.5	43.8	67.3
Construction	19.0	2.2	10.3	14.4	9.8	54.6	49.3	44.4	52.0	61.6
Manufacturing	28.4	29.8	17.5	27.6	28.7	45.2	36.3	39.9	39.9	48.2
Durables	19.5	15.7	8.0	17.4	17.4	41.8	37.5	35.9	35.9	47.9
Nondurables	8.9	14.0	9.2	10.2	11.2	54.8	35.0	42.7	42.7	48.8
Transportation and public utilities	5.8	2.4	2.3	4.6	4.1	50.0	35.6	42.1	45.4	52.5
Wholesale and retail trade	17.5	25.5	36.4	22.5	17.8	58.3	36.6	28.6	42.5	44.9
Finance, insurance, and real estate	2.3	4.9	2.0	3.2	2.5	62.7	37.8	31.8	44.5	50.9
Services	13.0	22.3	16.9	14.9	20.1	60.3	34.7	33.0	42.1	48.6
Government	6.6	10.1	9.2	6.0	13.6	55.3	33.0	26.2	38.7	43.3

NOTE: Excludes agricultural wage and salary workers and self-employed and unpaid family workers.

ers find new jobs and the speed at which firms recall layoffs are major cyclical causes of variations in unemployment.[12] That is, duration of unemployment is also an important consideration to cyclical variability, and it was usually longer for unemployed workers who were permanently separated than for those who were laid off. Thus, in this regard, the laid-off workers' contribution to the cyclical variability of joblessness is not apt to be as great as that for workers who were permanently separated. However, the fact that recall may be fairly likely for those on layoff does not imply that they fail to engage in job search and, subsequently, may change jobs.

As noted earlier, persons on layoff are not asked in the CPS if they had been looking for work during the prior 4 weeks, a key question in determining whether persons are unemployed. However, such information was collected in the Methods Development Survey[13]—a small experimental survey of the Bureau of the Census that was designed to test alternative questions and refinements that might be introduced into the CPS questionnaire at a future date. The cumulative monthly results over the April 1981 to December 1982 period are shown in the following tabulation of the percent of those on layoff who looked for work:

	Total	*Men*	*Women*
Total, 16 years and over	58.0	65.2	47.3
16–19 years	56.1	20.0	72.7
20 years and over	58.1	66.7	45.5
20–24 years	70.0	72.1	64.7
25–54 years	56.9	67.7	40.5
55 years and over	38.5	47.1	20.0

Fifty-eight percent of the persons reported as laid off looked for work at some point during the 4-week period prior to their being surveyed. This was much higher than the 10-percent estimated by Martin Feldstein in his 1975 study of those on layoff who searched for work during the week preceding the survey.[14] But it was lower than the 83-percent from the 1973 Job Finding Survey[15] who said they looked for work at some time before they either returned to their old job or obtained a new job. Two-thirds of men age 20 and over on layoff looked for work, and they were more likely than women or teenagers to have done so. Among all adults on layoff the likelihood of job search decreased with age (although this was not as visible among men). For example, the proportion of persons age 20–24 on layoff who searched for work was nearly twice the proportion for those 55 years and over.[16]

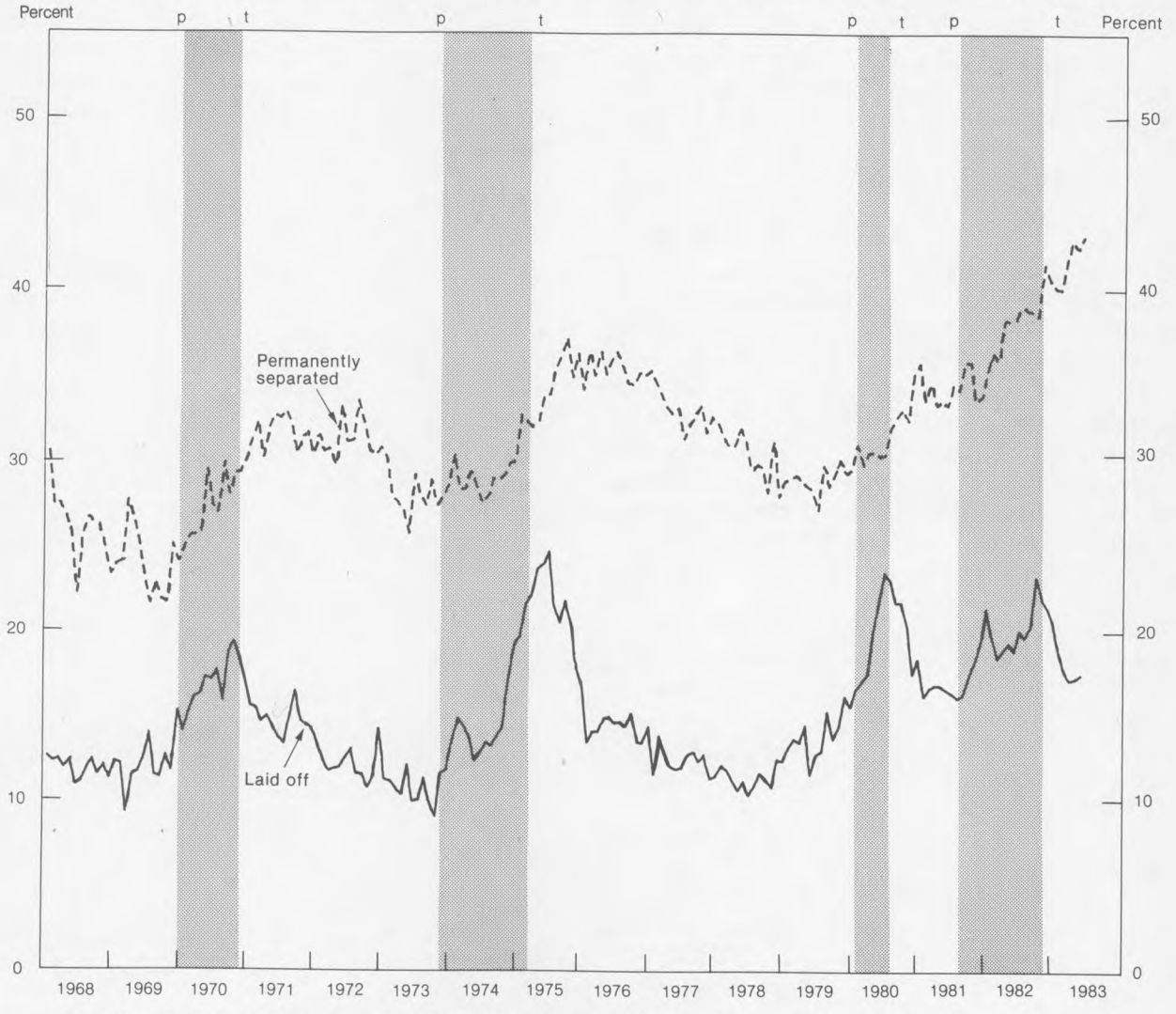
If, in fact, most workers on layoff are recalled before finding an acceptable job prospect, their search efforts are largely irrelevant in determining duration of unemployment spells. Rather, duration would be determined primarily by the firm's recall policy.[17] About 75 percent of the respondents in the CPS are common in consecutive months. Therefore, it is possible to gain some perspective on the magnitude of the number of workers on layoff likely to change jobs by comparing their labor force status from one month to the next.[18] This was done via a matching of the labor force status of persons in June 1976 who were reported as job losers in May.[19] For this purpose, a change in detailed industry attachment (3-digit level) between the 2 months represented a job change.[20] The following illustrates the May-to-June flow of job losers.

	Laid off	*Permanently separated*
Percent unemployed in May and employed in June	29.8	20.9
Unemployed in May and employed in June, by job change status (percent distribution):		
Total	100.0	100.0
Job change	37.1	66.5
No job change	62.8	33.5

Thirty percent of those on layoff in May and 21 percent of those permanently separated found employment in June. Two-thirds of those permanently separated changed jobs, whereas only slightly more than a third of those on layoff actually changed jobs—most returned to their old jobs.[21]

Recall rates. Because a recessionary increase in joblessness usually involves a larger proportion of permanent separations than layoffs, and because separations are twice as likely as layoffs to involve a job change (often a time-consuming process), separations contribute more than layoffs to the short-run variation in unemployment. However, because it is not known if either job-loser group's likelihood of recall or proclivity towards changing jobs has changed over time, it is not possible to say definitively whether their influence on the short-run variation in unemployment has changed.

Chart 1. Laid-off workers and the permanently separated as a percentage of the unemployed, 1968–83



NOTE: Data are seasonally adjusted. Shaded areas indicate recessionary periods as designated by the National Bureau of Economic Research: p is the peak; t is the trough.

For example, a decrease in the probability of recall could lead to longer duration of layoff employment which, in turn, would heighten the cyclical contribution of layoffs. Data from the Bureau of Labor Statistics Labor Turnover Survey, although not available subsequent to 1981,[22] are used here to examine the trend in recalls from layoffs, while CPS data are used to examine trends in duration of layoffs.

For manufacturing, communications, and selected mining industries, employers report the number of new hires and other accessions to their payrolls as well as the number of quits, layoffs, and other separations during the month. Each type of turnover action is totaled for the month and expressed as a rate per 100 employees. Layoffs are defined as "suspensions from pay status (lasting or expecting to last more than 7 consecutive calendar days), initiated by the employer without prejudice to the worker."[23]

To determine how many of those in the manufacturing industry were recalled to their jobs, Feldstein computed a rehire rate—the ratio of other accessions to layoffs. This ratio averaged 85 percent over the 1960–75 period, leading to the conclusion that "the vast majority of those laid off in manufacturing are ultimately rehired by their original employers, although in some cases they take jobs elsewhere in the interim."[24] But, what is the recent trend in rehires?

Beginning in January 1976, a separate column for recalls was added to the labor turnover questionnaire mailed to establishments. Recalls were defined as "permanent and temporary additions to the employment rolls of persons specifically recalled to a job in the same establishment of the company following a period of layoff lasting more than 7 consecutive days."[25] A comparison of a recall-to-layoff ratio (recall rate) using these new data with the rehire measure developed by Feldstein is presented in table 6. Interestingly, over the 1976–81 period, the recall rate averaged 72 percent, considerably lower than the rehire rate average of 96 percent and the same percentage as those on layoff in one month who had been recalled 2 weeks later as reported in a special CPS followup in July 1982.[26] Again, although still quite high, not as many workers on layoff return to their original jobs as previously thought.

Both the recall and rehire rates have declined in recent years. However, the rehire rates in the recessionary periods were similar, perhaps an indication that the likelihood of job change among workers on layoff was also similar.

Table 6. Labor turnover rates in the manufacturing industry, 1968–81

[Per 100 employees]

Year	(1) Layoffs	(2) Total accessions	(3) New hires	(4) Rehires[1] (2–3)	(5) Rehire rate[1] (4÷1)	(6) Recalls	(7) Recall rate (6÷1)
1968	1.2	4.6	3.5	1.1	0.92	—	—
1969	1.2	4.7	3.7	1.0	0.83	—	—
1970	1.8	4.0	2.8	1.2	0.67	—	—
1971	1.6	3.9	2.6	1.3	0.81	—	—
1972	1.1	4.5	3.3	1.2	1.09	—	—
1973	0.9	4.8	3.9	0.9	1.00	—	—
1974	1.5	4.2	3.2	1.0	0.67	—	—
1975	2.1	3.7	2.0	1.7	0.81	—	—
1976	1.3	3.9	2.6	1.3	1.00	1.0	0.70
1977	1.1	4.0	2.8	1.2	1.09	0.9	0.82
1978	0.9	4.1	3.1	1.0	1.11	0.7	0.78
1979	1.1	4.0	2.9	1.1	1.00	0.7	0.64
1980	1.7	3.5	2.1	1.4	0.82	1.1	0.65
1981	1.6	3.2	2.0	1.2	0.75	1.0	0.63

[1] As reported in Martin Feldstein, "The Importance of Temporary Layoffs: An Empirical Analysis," *Brookings Papers on Economic Activity*, No. 3, 1975.

NOTE: Dashes indicate data are not available.

Duration. An *increase* in the duration of unemployment for those on layoff could be viewed as a *decreased* likelihood of recall, which could eventualy necessitate a job change. Therefore, an examination of the long-run trend of duration on layoff might also yield some insight into whether the probability of laid-off workers changing jobs has increased or decreased. That is, a trend towards longer duration on layoff might reflect a heightened tendency to change jobs. Also, the longer the unemployment spell of job losers, the greater the probability that a higher overall jobless rate will result in the long run.

Below are estimates of mean duration (in weeks) of unemployment for laid-off and permanently separated workers, 1968–82:[27]

Year	*Layoffs*	*Permanent separations*
1968	7.1	11.2
1969	6.8	10.4
1970	7.5	12.3
1971	10.3	16.4
1972	10.8	16.9
1973	7.8	13.9
1974	7.5	13.7
1975	14.1	19.5
1976	14.5	21.6
1977	11.0	19.3
1978	8.9	15.8
1979	7.9	14.5
1980	11.5	12.7
1981	12.4	18.0
1982	13.6	19.7

The mean durations of unemployment among both groups of job losers in the 1981–82 downturn and the later stages of the 1973–75 recession were similar, but were longer than in the mild 1969–70 recession. Actually, the duration of unemployment resulting from layoffs was slightly shorter in the recent downturn than in the mid-1970 episode. Thus, although it is very unlikely that the "job change" behavior of either group changed perceptibly over the past 10 years, their tendency to change jobs may now be higher than 15 years ago.

In summary, layoffs accounted for close to the same percentage of the total increase in unemployment in the current recession as in the 1973–75 episode, while the likelihood of changing jobs remained roughly the same in both periods. Therefore, it is reasonable to assume that the contribution

of layoffs to the short-run variability of unemployment also did not change. Over the longer run, however, the contribution may have grown, especially if allowance is made for the possibility that some workers on layoff, after a time, considered themselves permanently separated. In contrast, job loss from permanent separation made up a much greater share of the overall rise of unemployment in the current recession than in previous downturns. Thus, it is clear that the contribution of workers permanently separated to the short-run variability of unemployment also rose. Moreover, given the greater percentage increase in unemployment accounted for by workers who were permanently separated from their jobs in the recent recession and their longer duration of unemployment, it will probably be more difficult for the overall jobless ratio to fall to prerecession levels.

Are layoffs overstated?

The fairly substantial amount of job search on the part of persons on layoff reported in the Methods Development Survey and the apparent significant number who do not return to their old jobs raise some questions about the classification of layoff in the regular CPS. If workers who say they are on layoff are searching for work, are they also expecting to be recalled to their jobs, a prerequisite to the layoff classification? If they do not expect to be recalled, is the official classification of layoff overstated?

As discussed earlier, to determine the extent that persons who reported themselves on layoff did not expect to be recalled, a special follow-up survey of the unemployed in July 1982 was conducted 2 weeks subsequent to the CPS interview week. In this survey, respondents who were initially reported as on layoff were asked directly, "Do you eventually expect to be called back to the job from which you were on layoff?" Preliminary results revealed that nearly a fourth of those still on layoff at the time of the follow-up survey did *not* expect to be recalled, and most of them had looked for work in the prior 4 weeks. That is, whereas they may not actually have been on layoff, they still would have been classified as unemployed. This suggests that the term "layoff" has different meanings as far as the unemployed are concerned and includes, for some, job termination. It should be kept in mind that these results are based upon a single month's observation, and a period of testing would have to be done to determine if they would hold up consistently.

The labor force classification of persons on layoff differs among industrial nations because of differences in labor market practices and in degrees of job attachment. For example, many, if not most, workers on layoff in European countries and in Japan, because of work contracts, are virtually certain to be recalled to their jobs and, thus, are classified as *employed*.[28] The Eighth International Conference of Labor Statisticians, under the auspices of The International Labor Office, specified in 1954 that only persons on layoff without pay are to be included among the unemployed. Recently, a study of the statistical treatment of layoffs commissioned by the Organization for Economic Cooperation and Development promulgated, for the purposes of international comparison, the following set of "building blocks" relating to persons on layoff:[29]

	Classification of person on layoff who—	
	Looked for work	*Did not look for work*
Date of recall:		
Specified	Employed	Employed
Not specified	Unemployed	Not in the labor force

According to this line of reasoning, only persons on layoff who had looked for work *and* did not have a specific recall date would be considered unemployed; all those with a specific recall date would be considered employed. These modifications were discussed at the Thirteenth International Conference of Labor Statisticians held in Geneva in October 1982 but were not adopted (except for a provision that offers some leeway for countries to adopt their own measurement of layoff depending upon national practice).[30] But in view of recent testing that places some doubt as to the interpretation and measurement of layoff, the United States is contemplating the addition of "job search" and "expected recall date" questions to the CPS at some future date and, thus, may be firming up the measurement and concept. □

———*FOOTNOTES*———

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[1] Martin Feldstein, "The Importance of Temporary Layoffs: An Empirical Analysis," *Brookings Papers on Economic Activity*, No. 3, 1975, pp. 725–44, was among the first to recognize the importance of the layoff component of unemployment. It was followed by: Thomas F. Bradshaw and Janet Scholl, "The Extent of Job Search During Layoff, *Brookings Papers on Economic Activity*, No. 2, 1976, pp. 515–26; Martin Feldstein, "The Effect of Unemployment Insurance on Temporary Layoff Unemployment," *American Economic Review*, December 1978, pp. 834–46; David M. Lilien, "The Cyclical Pattern of Temporary Layoffs in United States Manufacturing," *Review of Economics and Statistics*, February 1980, pp. 24–31; Kenneth Burdett and Dole T. Mortensen, "Search, Layoffs, and Labor Market Equilibrium," *Journal of Political Economy*, August 1980, pp. 652–72; James L. Medoff, "Layoffs and Alternatives under Trade Unions in U.S. Manufacturing," *American Economic Review*, June 1979, pp. 380–95; and Francine D. Blau and Lawrence M. Kahn, "Causes and Consequences of Layoffs," *Economic Inquiry*, April 1981, pp. 270–96.

[2] See *How the Government Measures Unemployment*, Report 505 (Bureau of Labor Statistics, 1976).

[3] *Current Population Survey Interviewers Reference Manual*, CPS–250 (Bureau of the Census, January 1980), pp. D5–38.

[4] The CPS measure of duration of unemployment reflects the current duration of an "in-progress" spell of unemployment, not a "completed" spell. For more information, see Norman Bowers, "Probing the issues of unemployment duration," *Monthly Labor Review*, July 1980, pp. 23–32.

[5] Medoff, "Layoffs and Alternatives," p. 380.

[6] *Earnings and Other Characteristics of Organized Workers, May 1980*, Bulletin 2105 (Bureau of Labor Statistics, September 1981).

[7] When controlling for both industry and occupation simultaneously, Martin Feldstein found that not only was the male/female layoff differential reduced but it was actually reversed, women having a significantly higher layoff rate than men. However, he expressed surprise over the size of the differential and thought that it may have reflected an overadjustment for occupation and industry attachment. Feldstein, "The Effect of Unemployment Insurance," p. 841.

[8] Richard E. Caves, "The Structure of Industry," in Martin Feldstein, ed., *The American Economy in Transition* (Chicago, University of Chicago Press, 1980), pp. 501–45.

[9] Curtis L. Gilroy, "Job losers, leavers, and entrants: traits and trends," *Monthly Labor Review*, August 1973, pp. 3–15.

[10] Thomas F. Bradshaw and Janet L. Scholl, "Workers on layoff: a comparison of two data series," *Monthly Labor Review*, November 1976, pp. 29–33.

[11] An examination of actual trough to peak changes in the number of layoffs relative to changes in the number of unemployed for the same dates yields the following: May 1969 to September 1971, 24.7 percent; October 1973 to June 1975, 40.5 percent; June 1978 to July 1980, 54.0 percent; and July 1981 to September 1982, 39.5 percent. The extent of layoffs relative to total unemployment in the 1973–75 and 1981–82 recessions was similar.

[12] Lilien, "The Cyclical Pattern of Temporary Layoffs," p. 24.

[13] The data on layoffs are from Phase III and IV covering the April 1981 to December 1982 period. The sample size each month was approximately 800 persons (200 respondents leave and 200 others enter the sample each month yielding an approximate cumulative sample size of 4,000 over the sample period) drawn from four areas—Chicago, Scranton, San Antonio, and rural Georgia.

[14] Feldstein, "The Importance of Temporary Layoffs," p. 732.

[15] Reported and described in Bradshaw, "The Extent of Job Search," pp. 517–18.

[16] A related question in the literature (Feldstein, "The Importance of Temporary Layoffs," pp. 744–45) has to do with whether nonsearchers on layoff are concentrated in high-wage industries. Unfortunately, such information was generally not available from Methods Development Survey data. However, it is possible to gain some insight into this issue from regular monthly CPS data. Individuals on layoff can be classified into two groups: those with a definite date of expected recall within 30 days are classified as on "temporary layoff," while all others are classified as on "indefinite layoff." It is assumed that those on indefinite layoff would be more likely than those on temporary layoff to search for work. Some support for this assumption is available from Methods Development Survey data. Remember, one factor that sets persons on temporary layoff apart from those on indefinite layoff is that the former *must* have a definite expected recall date. In the Methods Development Survey, persons on layoff were asked if they had a specific date to return to work. Nearly 70 percent of those on layoff *without* a specific recall date had looked for work, as opposed to 45 percent for those *with* a specific recall date. The examination of temporary versus indefinite layoff data, or the assumed nonsearchers versus searchers, by detailed industry revealed the following. First, each industry was classified as high- or low-wage based upon whether its average hourly wage was higher or lower than the average for all industries. If the assertion about nonsearchers in high-wage industries was correct, then one would expect that the percentage of those on temporary layoff in high-wage industries would be greater than their percentage in all industries. Actually, the percentages were relatively the same, one-fourth. Thus, it does not appear that nonsearching while on layoff is a function of wages.

[17] Lilien, "The Cyclical Pattern of Temporary Layoffs," p. 25.

[18] *Using the Current Population Survey as a Longitudinal Data Base*, Report 608 (Bureau of Labor Statistics, 1980).

[19] A readily available May–June 1976 CPS match file was the reason this time period was chosen. Eighty-five percent of the job losers in May who also would have been sampled in June were matched: 352 persons on layoff and 929 other job losers.

[20] Under this definition, 14 percent of the workers employed in May were employed in a different job in June. Of course, some of this "job change" could have been the result of reporting errors; that is, the respondent does not actually change jobs but, because of recording or coding error, the detailed industry category is different in successive months. However, in 1982, Wesley Mellow and Hal Sider compared 4,523 CPS respondents' description of their jobs with that provided by the employer and found a fairly high level of agreement (84 percent) in worker and employer responses to industry affiliation at the 3-digit level. (See Wesley Mellow and Hal Sider, "Accuracy of Response in Labor Market Surveys: Evidence and Implications," *Journal of Labor Economics*, forthcoming.) Assuming that 84 percent of the May–June 1976 job changes were actually job changes and not the result of reporting errors, the job mobility rate would drop a little to 12.5 percent. A study designed specifically to measure job mobility in 1961 found that 10 percent of the number who worked shifted from one employer to another during that year. See Gertrude Bancroft and Stuart Garfinkle, "Job Mobility in 1961," *Monthly Labor Review*, August 1963, pp. 897–906.

[21] It should be noted that CPS data do not indicate if persons on layoff actually returned to their previous jobs, but only that there was a change in labor force status between measurements. However, a special followup survey of the unemployed in July 1982 that was taken 2 weeks after the reference week found that, of the persons who had been reported on layoff initially but were working in the followup, 72 percent had been called back to their previous job and 22 percent had found another job. The subsequent labor force status for a small percentage could not be identified. The 68-percent recall rate within 6 months for laid-off workers in the manufacturing industry estimated by David Lilien in "The Cyclical Pattern of Temporary Layoffs in U.S. Manufacturing" (Ph.D dissertation, Massachusetts Institute of Technology, 1977) was also in line with the estimate here.

[22] With the publication of data for December and annual averages for 1981, the Bureau discontinued publication of labor turnover survey data. See Carol Utter, "Labor Turnover Survey Discontinued," *Employment and Earnings*, March 1982, p. 13.

[23] For a description of labor turnover concepts, see the Establishment Data section of "Explanatory Notes" in any issue of *Employment and Earnings* prior to February 1982.

[24] Feldstein, "The Importance of Temporary Layoff," p. 735.

[25] Carol Utter, "New Series on Recalls from the Labor Turnover Survey," *Employment and Earnings*, December 1977, pp. 10–11.

[26] See footnote 21 for detailed description of July followup survey.

[27] The mean duration of unemployment was estimated using the midpoints of the available duration of unemployment distribution categories: less than 5 weeks, 5 to 10 weeks, 11 to 14 weeks, 15 to 26 weeks, and 27 weeks and longer; 52 weeks was the assumed midpoint of the last category. Applying this method to 1982 annual average duration of total unemployment categories resulted in a mean of 15.4 weeks, very close to the actual mean of 15.6 weeks.

[28] Joyanna Moy and Constance Sorrentino, "Unemployment, labor force trends, and layoff practices in 10 countries," *Monthly Labor Review*, December 1981, pp. 3–13.

[29] Bernard M. Grais, *Layoffs and Short-time Working in Selected Organization for Economic Cooperation and Development Countries* (Paris, Organization for Economic Cooperation and Development, 1983).

[30] International Labor Organization, *Thirteenth International Conference of Labor Statisticians*, Geneva, ICLS/13/D11 (Final Version), October 18–19, 1982.

Motion-related wrist disorders traced to industries, occupational groups

Jobs that involve repetitive motions of the hand contribute disproportionately to a number of injuries and illnesses; analysis of workers' compensation claims data shows workers in manufacturing, construction, and agriculture to be most at risk

ROGER C. JENSEN, BRUCE P. KLEIN, AND LEE M. SANDERSON

Tasks which require workers to perform certain repetitive motions have been reported to contribute to the incidence of a variety of occupational diseases.[1] The Bureau of Labor Statistics 1979 annual survey of occupational injuries and illness found 21,900 cases that were associated with work activities involving repeated motions, vibrations, or pressure.[2] But while this statistic may help one to appreciate the magnitude of the problem, the annual survey does not obtain data pertaining to body part involved, which would permit the identification of anatomical areas most frequently affected by the stress of repetitive motions; nor does it permit identification of jobs most associated with repetitive motion disorders.

Fortunately, the Bureau has developed an alternate database, the Supplementary Data System (SDS), that does make such analysis possible. The following discussion demonstrates the use of the SDS, which is derived from State records of workers' compensation claims, in investigating the occurrence of one group of motion-related disorders—those involving the soft tissues of the wrist and hand. Such disorders are of interest because many industrial tasks require repetitive motions that subject the soft tissues of the wrist and hand to a low level, high frequency form of trauma.[3] Earlier studies, on a more limited scale, have shown that several disorders of the wrist (including carpal tunnel syndrome, tendinitis, and tenosynovitis) have a larger incidence among workers whose occupations entail frequent, repetitive hand movements.[4]

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The database

The BLS Supplementary Data System was the primary information source for this investigation. The SDS program became functional in 1976 as a Federal-State cooperative

Table 1. Industrial work force by major industrial group, total and for the 26 SDS States combined, 1979

[Numbers in thousands]

Industrial group	Total U.S. work force	Workers in 26 SDS States	Industry-specific percent of work force represented by 26 SDS States
Total	74,564.6	32,070.7	43.0
Agriculture	1,414.0	677.0	47.9
Construction	4,528.4	1,964.2	43.4
Manufacturing	21,069.0	8,871.4	42.1
Transportation	5,110.2	2,166.7	42.4
Trade	20,308.9	8,956.3	44.1
Finance	4,980.5	2,063.6	41.4
Services	17,153.6	7,371.5	43.0

system to provide information about occupational injury and illness.[5] The States participating in the SDS program classify workers' compensation information according to a uniform format[6] and submit the data to BLS on an annual basis. Data from 26 States which reported current cases for the year 1979 were used for this assessment.[7] To be included in the analysis, a wrist compensation claim had to relate to inflammation or irritation of joints, tendons, or muscles; or diseases of the nerves and peripheral ganglia. The disorder also had to be attributable to one of the following types of accident or exposure: repetitive pressure; voluntary motions; overexertions; lifting objects; pulling objects; throwing objects; or nonspecific overexertion.[8] The claims which met these criteria are hereinafter referred to as "nonimpact wrist disorders."

Employment data by industry were obtained from BLS for each of the 50 States.[9] These data allowed for the calculation of the percentage of industrial work force represented by the 26 States (see table 1, page 13), and provided a means for comparing the number of workers' compensation claims in an industry to the number of workers employed.[10] The 26 States represented 43 percent of the total U.S. work force employed in the seven major industry groups.

Differences among State workers' compensation coverage and reporting requirements have been cited as limitations of the SDS program.[11] Furthermore, it must be emphasized that compensation claim data reflect the likelihood of a worker filing a claim for a specific injury or illness and do not directly indicate the incidence of the injury or illness. With these differences acknowledged, it is our view that the SDS program is the most comprehensive data source available for making comparative assessments of serious and moderately serious injuries and illnesses across industries and occupations.

High-risk groups isolated

Data in table 2 show that there were 3,027 workers' compensation claims reported in 1979 for nonimpact wrist disorders in the 26 States included in this analysis. These account for more than 6 percent of all compensable cases involving the wrist, and are most important in the manufacturing industries, where they account for more than 10 percent of all wrist injury claims.

Table 2. Distribution of nonimpact wrist disorder claims and total wrist injury or illness claims in 26 SDS States combined, by industry, 1979

Industrial group	Number of nonimpact wrist disorder claims	Total wrist injury claims	Nonimpact claims as a percent of total wrist injury claims
Total	3,019	48,299	6.2
Agriculture	65	1,216	5.4
Construction	198	5,769	3.4
Manufacturing	2,107	20,013	10.5
Transportation	56	2,925	1.9
Trade	367	9,899	3.7
Finance	22	674	3.3
Services	204	7,803	2.6

Table 3. Mean indemnity compensation and medical payments for selected types of workers' compensation claims closed in 1979, seven SDS States

Nature of illness or injury[1]	Indemnity compensation: Number of cases reporting cost data	Indemnity compensation: Mean cost per case
Fractures	3,116	$2,688
Cuts, lacerations, or punctures	763	1,206
Nonimpact wrist disorders	762	1,026
Sprains or strains	2,953	985
Contusions, crushing, or bruises	581	910
	Medical payments	
Nonimpact wrist disorders	202	618
Fractures	937	567
Cuts, lacerations, or punctures	328	312
Sprains or strains	770	190
Contusions, crushing, or bruises	207	186

[1] Table lists only those categories with cost data reported for more than 100 cases.

Another index of the impact of an occupational injury or illness is the mean compensation cost per case. Data in table 3 indicate that, compared to other common kinds of cases, nonimpact wrist disorders are important with reference to both medical payments and indemnity compensation; on average, they cost $618 in medical payments and $1,026 in indemnity compensation per case.[12]

With reference to gender differences for nonimpact wrist disorders, the percentages of claims submitted by men (50.6 percent) and by women (49.4 percent) were similar. However, gender-specific employment figures for 1979 show that the combined work force in the SDS States was 58.6 percent male and 41.4 percent female.[13] The mean age of claimants in the two groups revealed women (33.7 years) to be 3.8 years older than men (29.9 years). (This difference in age between genders was found to be statistically significant at the .0001 level.)

Industry. The number of nonimpact wrist injury compensation claims across the 26 States used in this analysis reveals that manufacturing produced the largest number of claims (2,107), representing 69.6 percent of the total. Table 4 shows an incidence rating for nonimpact wrist compensation claims for each of the seven industrial groups. This ratio was calculated by dividing the industry-specific number of claims for the 26 SDS States by the respective industry-specific number of workers employed in these States, and multiplying by 100,000. Again, manufacturing led the seven industries with a ratio of 23.8 claims per 100,000 workers. Construction, which reported the fourth largest number of claims, had the second largest incidence ratio (10.1 claims per 100,000 workers), followed by agriculture (9.6 claims per 100,000 workers).

In an effort to more accurately identify the specific industries with the most nonimpact wrist disorder claims, the major industrial categories (agriculture, construction, and so forth) were broken down according to four-digit Standard

Industrial Classification (SIC) codes.[14] As shown in table 5, meatpacking plants accounted for the largest number of claims (245), some 8 percent of all compensation claims filed for nonimpact wrist disorders in the 26 SDS States.

Occupation. Coding of worker job titles by the SDS program allowed for the retrieval of figures on compensation claims according to general occupation (table 6). Meatcutters and butchers (manufacturing) were, by far, at largest risk of filing nonimpact wrist disorder claims, with 498.8 claims per 100,000 workers.

Interpreting the results

It must be stressed that the number of workers' compensation claims for nonimpact wrist disorders understates the incidence of such cases. The use of workers' compensation claim data restricts the focus of analysis to employees seeking medical attention for the condition or filing for compensation benefits, or both, which is not synonymous with the number of workers experiencing this occupational disorder. For example, in a study of one large manufacturing operation, it was found that, out of 30 workers with a diagnosed case of carpal tunnel syndrome, only 16 became workers' compensation cases.[15]

Several factors may contribute to the discrepancy between the occupational incidence of nonimpact wrist disorders and the incidence of compensation claims reported by State compensation agencies. First, many workers, such as farm owners and their families, railroad employees, maritime workers, and Federal employees, are not covered by State workers' compensation programs. Second, some of the States included in this analysis provide information which is limited to cases in which the worker was unable to work for a specified length of time, depending on State law. Thus, some workers who actually suffer from the disorder but are able to continue working are not identified from compensation data. In addition, such workers may be reassigned to other jobs which reduce their symptoms to the point where it is unnecessary to file a claim. Finally, because repetitive motion disorders occur without an easily recognizable traumatic incident, many workers may not file a claim because they fail to recognize the causative relationship between the repetitive activity and their symptoms.

Table 4. Industry-specific incidence ratios for nonimpact wrist disorders in the 26 SDS States, 1979

Industry	Claims per 100,000 workers
Manufacturing	23.8
Construction	10.1
Agriculture	9.6
Average	9.4
Trade	4.1
Services	2.9
Transportation	2.6
Finance	1.1

Table 5. Nonimpact wrist compensation claims by four-digit SIC code, 1979

SIC code	Industry	Division	Number of claims	Percent of all nonimpact wrist claims
2011	Meatpacking plants	Manufacturing	245	8.0
3714	Motor vehicle parts and accessories	Manufacturing	116	3.8
3711	Motor vehicle and passenger car bodies	Manufacturing	102	3.3
2421	Sawmills and planing mills	Manufacturing	83	2.7
2016	Poultry dressing plants	Manufacturing	77	2.5
5812	Eating places	Retail trade	51	1.7
5411	Grocery stores	Retail trade	51	1.7
3519	Internal combustion engines	Manufacturing	46	1.5
3079	Miscellaneous plastics products	Manufacturing	43	1.4

We are unable to ascribe much significance to our findings on the gender and age of claimants because of inadequate information on the diagnosis of each compensation claim, and lack of data on the gender and age distributions of workers who perform repetitive motion tasks. We acknowledge the multitude of etiological factors which can contribute to the incidence of such conditions as carpal tunnel syndrome, and believe that the effects of age and gender can be better addressed by population-based epidemiological studies.

The manufacturing industries accounted for 69.6 percent of the reported compensation claims secondary to nonimpact wrist disorder, a ratio of 23.8 claims per 100,000 workers. Further breakdown of this information according to specific industrial category revealed the largest number of reported claims to be from the meatpacking and the motor-vehicle manufacturing industries. However, the assessment of specific risk factors is not possible with these data because we lack information on the types of tasks performed and the length of exposure to specific tasks.

The agricultural industries produced the third largest incidence ratio for nonimpact wrist disorders (9.6 claims per 100,000 workers), even though employment tends to be

Table 6. Number and incidence ratio of nonimpact wrist disorder claims in 26 SDS States, high-risk occupations, 1979

Occupation	Number of claims	Estimated employment	Claims per 100,000 workers
Meatcutters and butchers (manufacturing)	222	44,509	498.8
Miscellaneous laborers	171	102,387	167.0
Bottling, canning operatives	33	32,416	101.8
Filers, polishers, sanders, and buffers	47	60,069	78.2
Meat wrappers (retail trade)	15	21,984	68.2
Shoemaking machine operators	19	31,631	60.1
Nonspecified laborers	127	212,709	59.7
Sawyers	35	58,764	59.6
Assemblers	326	550,242	59.3
Punch and stamping press operatives	52	91,175	57.0
Freight and materials handlers	136	257,299	52.9
Packers and wrappers, except meat and produce	124	247,574	50.1

seasonal and performed, to some extent, by migrant workers who may not file claims as often as other wage workers. Further investigation into the occurrence of nonimpact wrist disorders in agriculture appears warranted.

Finally, with regard to occupation, we found that meatcutters and butchers, miscellaneous laborers, and bottling and canning operators accounted for the largest numbers of nonimpact wrist disorders. Again, however, these observations should be interpreted cautiously, because our analysis is based on data which are available for only very general occupational groups.

RESEARCH PERFORMED IN A VARIETY of industrial settings has supported a positive association between repetitive hand motions and the incidence of various wrist disorders.[16] Our analysis of workers' compensation claims provides further evidence of this association by showing large differences in claim ratios (claims per 100,000 employees) for different occupations, with the largest ratios occurring in occupations that entail repeated motions and exertions of the hand. Our study, and similar studies of other job-related disorders, should also be useful in the establishment of priorities for both research and regulatory activities in the field of occupational safety and health. However, the etiological components, including the role of specific hand motions, must be more thoroughly assessed if the factors contributing to the incidence of nonimpact wrist disorders are to be identified and altered. □

———*FOOTNOTES*———

[1] Leo Hymovich and Miriam Lindholm, "Hand, wrist and forearm injuries, the result of repetitive motions," *Journal of Occupational Medicine*, November 1966, pp. 573–77; and Norman M. Hadler, "Industrial rheumatology: clinical investigations into the influence of the pattern of usage on the pattern of regional musculo-skeletal disease," *Arthritis and Rheumatism*, May 1977, pp. 1019–25.

[2] Data are from *Occupational Injuries and Illnesses in 1979: Summary*, Bulletin 2097 (Bureau of Labor Statistics, 1981), p. 29.

[3] Thomas J. Armstrong, "Carpal tunnel syndrome and the female worker," *Transactions of the Forty-third Annual Meeting of the American Conference of Governmental Industrial Hygienists* (Cincinnati, Ohio, American Conference of Governmental Industrial Hygienists, Inc., 1982), pp. 26–35.

[4] Lawrence J. Cannon, Edward J. Bernacki, and Stephen D. Walter, "Personal and occupational factors associated with carpal tunnel syndrome," *Journal of Occupational Medicine*, April 1981, pp. 255–58; Tuulikki Lupopajarvi, Ilkka Kuorinka, Markku Virolainen, and Mia Holmberg, "Prevalence of tenosynovitis and other injuries of the upper extremities in repetitive work," *Scandinavian Journal of Work, Environment and Health*, 1979, Suppl. 3, pp. 48–55; M.Q. Birkbeck and T.C. Beer, "Occupation in relation to carpal tunnel syndrome," *Rheumatology and Rehabilitation*, November 1975, pp. 218–21; and Teresa W. Lewis, "An unnecessary byproduct of industry," *Ohio Monitor*, March 1980, pp. 14–16.

[5] Norman Root and David McCaffrey, "Producing more information on work injury and illness," *Monthly Labor Review*, April 1978, pp. 16–21.

[6] *Supplementary Data System, Microdata Files User's Guide, 1978–1979* (Bureau of Labor Statistics, 1980).

[7] The 26 States included in this analysis of the 1979 SDS survey are Alaska, Arizona, California, Colorado, Hawaii, Idaho, Indiana, Iowa, Kentucky, Maine, Maryland, Michigan, Minnesota, Missouri, Montana, Nebraska, New Jersey, New Mexico, Oregon, South Dakota, Tennessee, Utah, Vermont, Washington, Wisconsin, and Wyoming. Two States (Massachusetts and Ohio) which also provide current case data were not used for this analysis because their occupational classification system differs from that for the BLS employment data.

[8] Compensation claims attributed to vibration were excluded from this study.

[9] Employment figures for manufacturing; construction; wholesale and retail trade; finance, insurance, and real estate; transportation; services; and government were obtained from *Supplement to Employment and Earnings, States and Areas, Data for 1977–80*, Bulletin 1370–15 (Bureau of Labor Statistics, 1981). Agricultural employment is from "Current Population Survey" (Bureau of Labor Statistics, 1979), table A (unpublished), pp. 1547–49.

[10] The SDS data on compensation claims secondary to nonimpact wrist disorders included figures from nine industrial groups (agriculture; mining; construction; manufacturing; wholesale and retail trade; finance, insurance, and real estate; transportation; services; and government). Because of the variance which exists in coverage and reporting procedures for compensation claims among governmental employees, this industrial classification was omitted from tables 1, 2, and 4. The mining industries were also excluded from the analysis because data for the 26 States were not representative of the work force in mining, and because there were only eight cases that met our criteria.

[11] Root and McCaffrey, "Producing more information," p. 17.

[12] Medical and indemnity compensation cost data were submitted on closed workers' compensation claims by seven States (Arkansas, Colorado, Delaware, Montana, North Carolina, Virginia, and Wisconsin).

[13] *Geographic Profile of Employment and Unemployment, 1979*, Report 619 (Bureau of Labor Statistics, 1980), table 1.

[14] See U.S. Office of Management and Budget, *Standard Industrial Classification Manual, 1972* (Washington, U.S. Government Printing Office).

[15] Cannon, Bernacki, and Walter, "Personal and occupational factors."

[16] See Hymovich and Lindholm, "Hand, wrist and forearm injuries"; Cannon, Bernacki, and Walter, "Personal and occupational factors"; Armstrong, "Carpal tunnel syndrome"; and Birkbeck and Beer, "Occupation."

Productivity growth in plastics lower than all manufacturing

During 1972–81, output per hour increased at an annual rate of 1.4 percent, slowing to less than 1 percent after 1976; growth in productivity has been linked to improved technology

JAMES D. YORK

Despite rapid output growth during 1972–81, productivity in the miscellaneous plastics products industry increased at a somewhat slower rate than that for all manufacturing. Productivity rose at an average annual rate of 1.4 percent over the period, while the rate for all manufacturing was 1.8 percent.[1] The rapid rise in output, at an average annual rate of 5.5 percent, was accompanied by an increase in employee hours of 4 percent annually. (See table 1.) Industry productivity benefited from improvements in resins and faster processing equipment, and from the growing use of microprocessor controls for production machinery.

Productivity trends fluctuated during 1972–81, as output and hours responded to cyclical forces in the economy. The output of the plastics industry encompasses a wide range of products consumed in many sectors of the economy. Consequently, industry output tends to be strongly influenced by trends in the overall level of economic activity. A sharp downturn in the economy led to sizable declines in the output of plastics products: 9.0 percent in 1974 and 12.5 percent in 1975. Reductions in employee hours lagged initially, with a decrease of only 1.1 percent in 1974. With output declining much more than hours in that year, productivity posted a 7.9-percent decrease. In 1975, however, the rate of decline in hours accelerated to 12.6 percent, virtually matching the decrease in output. With the changes in output and hours offsetting each other, productivity showed no change for that year.

With an improving economy, output increased very rapidly in 1976 and 1977, rising by 18.9 percent and 24.4 percent. These gains outpaced the corresponding increases in hours of 14.5 and 11.4 percent and productivity consequently rose by 3.8 and 11.7 percent. In 1978, output still showed a sizable increase of 10.7 percent but this was more nearly matched by the rise in hours of 9.8 percent, resulting in a productivity gain of only 0.8 percent. Employee hours continued increasing in 1979, by 4.7 percent, despite a decrease in output of 1.5 percent, yielding a 6-percent drop in productivity. The economy experienced another downturn in 1980 and industry output decreased by 5.1 percent. Hours were reduced even more, however, by 6.1 percent, and productivity managed to post a gain of 0.9 percent. The economy began to improve after the sharp downturn in the first half of 1980 and this improvement continued into 1981. Industry output benefited, rising 6.9 percent, which outpaced the 3.9-percent increase in hours and resulted in a productivity gain of 2.9 percent.

Employment and plant size

Employment in the industry grew quite rapidly during 1972–81, rising from 342,500 to 477,200, equivalent to an

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average annual rate of increase of 4.0 percent. Employee hours advanced at the same rate during this period. By comparison, the rate of increase for all manufacturing employment was 0.7 percent and the rate for hours was 0.6 percent.

Because the output of plastics products serves such a wide range of markets, trends in the industry's employment are strongly influenced by cyclical swings in the overall economy. Despite rapid employment growth in plastics products during the 1972–81 period as a whole, there were declines of 0.1 percent in 1974 and 12.7 percent in 1975—years in which the economy was in recession. Employment growth was strong in each of the following years until 1980, the next recession year. In that year, employment dropped 5.5 percent. It recovered again in 1981, however, rising by 3.5 percent.

Most of the establishments in the plastics industry are small. Data available for 1977 indicate that about 57 percent of the industry's establishments employ fewer than 20 employees. Most of the employment, however, appears to be concentrated in medium size establishments. Nearly half of total industry employment in 1977 was in establishments with 50 to 249 employees. The establishments with fewer than 20 employees accounted for only about 7.5 percent of industry employment, despite their large share of the total number of establishments. Very large establishments are unusual, with less than 0.2 percent of all establishments employing 1,000 or more workers in 1977. The average number of employees per estabishment hardly changed during 1972–77, declining from 45 employees in 1972 to 44 in 1977.

Data on the skill composition of employment are available for broad occupational groups in the miscellaneous plastics products industry for 1980. These data indicate that operatives are the major occupational group, constituting almost 56 percent of total industry employment, as compared with the all-manufacturing average of just over 43 percent. This job category includes such occupations as assemblers and machine operatives. Craft and related workers, which include machinists and tool-and-die-makers, were another substantial category with almost 16 percent of total industry employment, slightly less than the all-manufacturing proportion of just under 19 percent. Professional, technical, and related workers constituted a somewhat lower proportion of total employment than for all manufacturing—less than 4 percent in the plastics industry compared with over 9 percent for all manufacturing. By contrast, the share of industry employment composed of managers, officials, and proprietors was nearly the same as that for all manufacturing—about 6 percent.

Table 1. Productivity and related indexes for miscellaneous plastics products, 1972–81

[1977 = 100]

Year	Output per empoylee hour	Output	Employee hours	Employees
1972	86.6	70.3	81.2	81.0
1973	93.6	84.9	90.7	91.0
1974	86.2	77.3	89.7	90.9
1975	86.2	67.6	78.4	79.4
1976	89.5	80.4	89.8	90.2
1977	100.0	100.0	100.0	100.0
1978	100.8	110.7	109.8	109.6
1979	94.8	109.0	115.0	115.5
1980	95.7	103.4	108.0	109.1
1981	98.5	110.5	112.2	112.9
	Average annual rates of change (in percent)			
1972–81	1.4	5.5	4.0	4.0
1976–81	0.8	4.9	4.1	4.2

Major markets

An important reason for the rapid growth of industry output is that new markets for plastics products have been continually opening up. The development over time of new and improved resins has been an important underlying factor in making this possible. Plastics made from these improved resins have been able to meet more stringent performance criteria in areas such as strength and heat resistance. With these improved properties, plastics became suitable for the manufacture of many products from which they had previously been excluded. As a result, plastics began penetrating product markets formerly dominated by other materials. For example, plastic pipe has increasingly been substituted for other types of pipe, such as copper and cast iron, as building codes have been altered to acknowledge its suitability. The greater ease of installation of plastic pipe has also meant that semiskilled workers could be employed to install it. The benefits of plastics in terms of such factors as price, weight, and corrosion resistance have made them a popular alternative to competing materials in many product lines.

Building and construction. The building and construction industry is an important market for plastics products. Plastics products for this market include such items as panels, doors, moldings, pipes, and insulation. By far, pipes are the most popular item: shipments nearly tripled during 1972–77. The advantages of plastic pipe (such as corrosion resistance) have helped it to penetrate markets previously dominated by other materials.

Agriculture. Agricultural uses are an important market for plastic pipe. The need to increase food production during the 1970's served as a stimulus to the demand for agricultural pipe. Plastic was promoted in drainage and irrigation systems. For example, corrugated polyethylene tubing began to replace more expensive and cumbersome concrete drainage tile. The use of plastic pipe in irrigation has benefited from increased emphasis on agricultural efficiency.[2]

One of the biggest markets for plastics products is in film, sheets, and sheetings. There are a number of types of these items such as cellulosic, polyethylene, polypropylene, polystyrene, and vinyl and vinyl copolymer. Useful for mulching

applications, when spread upon an agricultural bed, film controls moisture evaporation, prevents leaching of fertilizer, accelerates growth, and increases yield.

The value of shipments of film and sheet proucts for all markets, including agriculture, increased considerably from 1972 to 1977. Shipments of polypropylene film and sheet more than quadrupled during this period. Cellulosic and polystyrene also increased rapidly and polyethylene, one of the biggest categories, more than doubled. Sheets are also produced in laminated form. Data for laminated sheets, which are available in combined form with data for laminated rods and tubes, indicate that shipments nearly doubled during 1972–77.

Plastics products have found a growing number of applications in agriculture besides sheeting and pipe. Injection molded plastic parts on many types of agricultural equipment are increasingly substituted for metal parts. Parts for seed drills, combines, planters, and tractors are more frequently being made of plastic. Some of the advantages of plastics include cost and weight reduction and corrosion resistance.

Packaging. Another important market for plastics has been packaging applications. Blow molded milk containers, for example, which are large, break-resistant, and light weight, have achieved a high level of market penetration because of their advantages. Plastic containers for other types of food products have also grown in popularity. Shipments of jars and tubs for food products nearly tripled during 1972–77. Advances in blow molding technology around the beginning of this period helped push plastic drums into competition with steel, offering advantages in reusability and resistance to denting and corrosion as well as lighter weight.

Transportation equipment. Much of the output of the plastics industry is used in the manufacture of transportation products. By far the largest portion of this output goes into the production of motor vehicles. In 1977, nearly 80 percent of plastics output, by value of shipments, going into the transportation market, was used for motor vehicles. The remaining 20 percent went into aircraft, space and missile, and other transportation equipment. About two-thirds of the portion going into motor vehicles was in the form of components, housing, accessories, and parts. The rest was in the form of foam products for such items as seating and dash. Substitution of plastics for metals has contributed to output growth. Light weight has helped make plastics products suitable for a multitude of applications in the automotive area.

Smaller markets. A smaller but still sizable market for plastics is the electrical and electronic products market. One of the biggest segments of this market—household and commercial appliances—showed little change in output during 1972–77 but items in the computing and data processing category grew rapidly. Furniture components and furnishings also represent a fairly sizable market for industry output.

Technological advances

The plastics industry produces an extremely wide assortment of products. The resins used as raw material can be formed into a wide variety of shapes using various processes such as molding and extrusion.[3] The equipment used in these processes has been improving over time, aiding industry productivity gains.

One of the most widely used production processes is injection molding. This process involves heating and working plastics granules or compounds until they are able to flow. This plasticized material is then forced under pressure into a closed mold cavity where it can cool or cure to form the desired part. Productivity in this process has benefited from the adoption of equipment which utilizes a rotating screw to perform the injection operation. Raw material is fed from a hopper onto the screw which is kept rotating by a motor. The material is forced over the flights of the screw and is heated by the barrel and friction from the turning screw. This process heats and plasticizes the material. As the hot material forces its way to the front of the screw, it drives the screw backward. The screw stops turning when the right amount of material reaches the tip. The screw is then forced forward and injects the hot plastic material through the nozzle of the barrel and then through a sprue and runner system into the mold cavities. Use of the screw has resulted in the material being more plasticized when it enters the mold, reducing cycle time. Better resins tailored to injection molding have become available and these have facilitated plasticization and have reduced problems arising when plastic material sets up in the barrel and must be removed.

In recent years, a type of injection molding known as reaction injection molding (RIM) has come into use.[4] RIM involves the injection of two liquid plastic materials into a mold. This is done at low pressure rather than the usual high pressure. Many improvements in RIM equipment use have contributed to productivity growth. Improved output metering units have resulted in more rapid mold fill, and press speeds have also been increased. The introduction of faster-cure materials has largely eliminated the need for presses with tilt features which extend the cycle time.[5]

Machine controls have continually improved over the years. An important development in this regard has been the increasing adoption of microprocessor controls as they have become more affordable. They provide an integrated system of controls over such production variables as time, temperature, position, and pressure. They offer production monitoring capabilities and can maintain various parameters such as injection velocity and cavity pressure at optimal, preset levels in spite of fluctuations in operating conditions. The ability of microprocessors to detect and adjust for changes in operating conditions enables them to keep production

machinery operating at peak efficiency. Their preprogramming capabilities reduce the needed startup time and their precise control reduces the reject rates.

Reductions in molding cycle time have also aided productivity. Improvements in mold cooling systems have contributed to reduced molding time. More sophisticated mold designs have also reduced the time required for the molding operation. Continual improvements in resins have made important contributions to productivity gains in molding. Improved resins offer such advantages as faster flow, easier ejection, and reduced mold deposit. The advantages of these resins have reduced the cycle time in many molding operations.[6]

A significant development in materials handling has been the adoption of robots for the performance of operations involving such activities as lifting, tilting, twisting, positioning, aligning, or transferring of items. Robots have been used for a number of premolding and postmolding operations, such as loading and unloading presses and the handling and orienting of finished parts for takeaway. Robots offer the advantage of working tirelessly without interruption, improving product quality and shortening cycle time. In addition to their role with molding machines, robots are also being used in such downsteam processes as trimming and deflashing. Robots have also proven beneficial for spray coating plastic parts. The robots offer more uniform and accurate coating weights and fewer rejects, while performing at higher levels of productivity.

The use of lasers has been growing in the plastic processing industry. Lasers have been adopted for cutting and drilling uses and also for their capacity to measure and inspect accurately and quickly. Measuring systems can use interruption of laser scans to determine dimensions while inspection units detect disruptions of the beam when it hits defects, such as bubbles or other flaws, in the surface. Analysis of the reflected/refracted light, generally by computer control, provides information on the defects. The laser can be connected with process controls, thus permitting adjustment of process parameters in response to detected defects. Lasers can cut thick plastics in a single step, providing clean, smooth edges which do not require abrasive finishing. The speed and precision of lasers and their ability to replace manual operations have enabled them to contribute to industry productivity gains.

Outlook for technology

More frequent adoption of microprocessor controls for production equipment probably will be an important part of the future automation of the industry. A move toward almost total computer control of many plants appears to be a very real possibility. Microprocessor controls for individual machines could be linked to central computers which coordinate and control the overall manufacturing operation.[7]

Increased adoption of robots also appears likely as part of the push for greater efficiency; not only will there be more robots but the capabilities of those robots almost certainly will expand. Laser systems will probably also continue to be adopted.

Improvements in resins have been an important factor in productivity growth and the industry should continue to benefit from the development and introduction of better resins. Modifications in production machinery to take advantage of new resins may also be beneficial to productivity gains.

Demand for industry output should grow relatively well in coming years, as plastics are substituted for other materials in the manufacture of various products. Any further declines in petroleum prices would also benefit the price competitiveness of plastics products by reducing the cost of raw materials. □

FOOTNOTES

[1] Average annual rates of change are based on the linear least squares trends of the logarithms of the index numbers. The miscellaneous plastics products industry is composed of establishments primarily engaged in molding primary plastics for the trade and fabricating miscellaneous finished plastics products. The industry is designated as SIC 3079 in the *Standard Industrial Classification Manual,* 1972 Edition, issued by the Office of Management and Budget. Extension of the indexes appears in the annual BLS Bulletin, *Productivity Measures for Selected Industries.*

[2] For more information on the subject of pipe, see "Agpipe Picks Up," *Modern Plastics,* March 1975, pp. 54–55; and "Volume Pipe Resin: A Million-Ton 1977 Market Will Grow 30 percent by 1980," *Modern Plastics,* December 1977, pp. 34–37.

[3] For descriptions of the various processes and definitions of many of the terms used in the miscellaneous plastics products industry, see *Standards and Practices of Plastics Molders and Plastics Molded Parts Buyers Guide* (New York, The Society of the Plastics Industry, Inc., 1965), pp. 35–46.

[4] See "Many New Developments in RIM Machines," *Plastic World,* September 1979, pp. 49–51.

[5] "New High-Productivity Equipment Transforms Conventional Processing," *Modern Plastics,* December 1980, pp. 52–54.

[6] See "High Productivity and Economy in New Grades of Engineering Resins," *Modern Plastics,* October 1980, pp. 52–53.

[7] See Frank Nissel, "Extrusion's Next Goal Should Be More Productivity," and Jack Alger, "The New World of Computer-Integrated Production Systems," *Modern Plastics,* June 1982, pp. 90 and 94–95.

APPENDIX: Measurement techniques and limitations

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

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

In the absence of adequate physical quantity data, the output index for this industry was constructed by a deflated value technique. The value of shipments of the various product classes were adjusted for price changes by appropriate Producer Price Indexes to derive real output measures. These, in turn, were combined with employee hour weights to derive the overall output measure. These procedures result in a final output index that is conceptually close to the preferred output measure.

Employment and employee hour indexes were derived from BLS data. Employee and employee hours are each considered homogeneous and additive, and thus do not reflect changes in the qualitative aspects of labor, such as skill and experience.

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

Errata

In "Labor market contrasts: United States and Europe" by Janet L. Norwood in the August *Monthly Labor Review*, two lines were inadvertently dropped from the paragraphs beginning at the bottoms of page 3 and page 4. The paragraphs are reproduced below with the missing lines in boldface.

Paragraph beginning at the bottom of page 3:

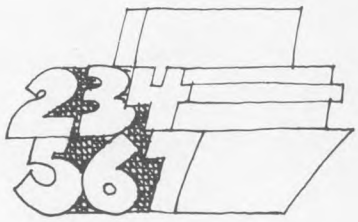
The differences and their effects on attitudes toward policy were discussed at a recent conference in England by experts from Western Europe and North America. The question **"Has Full Employment Gone Forever?" was answered** far more pessimistically by the Europeans than by the Americans. The attitudes at the conference were shaped by the historical framework and expectations of future developments. The Western European countries had very little job growth during the decade of the 1970's; and in most of the European countries, there was little if any expansion of the labor force.

Paragraph beginning at the bottom of page 4:

Youth unemployment high. Young people also tend to be concentrated in low-paying jobs—when they work. Youth unemployment rates are at very high levels in both Europe and in the United States. More than 1 of 5 teenagers in the U.S. labor force is unemployed, as is 1 of 7 young adults **aged 20 to 24. Unemployment rates among British, French,** Italian, and Dutch youth now meet or surpass these high U.S. levels, while West Germany manages to maintain much lower rates, especially for teenagers. (See table 3.)

Reprints of the article are available from the Bureau of Labor Statistics, Division of Information Services, Washington, D.C. 20212.

The Anatomy of Price Change



Inflation patterns in the initial stages of recovery

DAVID CALLAHAN, DOUGLASS ROBERTSON, AND LORIE SCHEIBEL

The newly-modified Consumer Price Index for All Urban Consumers (CPI-U) advanced at a seasonally adjusted annual rate of 2.9 percent for the first 6 months of 1983, compared with a 3.9-percent rate during 1982.[1] Prices in the first quarter continued the general experience of the fourth quarter of 1982 with the overall price level virtually unchanged. This was followed by a moderate upswing, at an annual rate of 5.4 percent, during the second quarter. (See table 1). Energy prices have been a dominant factor in the moderation in the CPI during the economic slowdown, and this continued into the first stages of the recovery. Following a decline in the first quarter, the reversal in energy prices was largely responsible for the second quarter acceleration. The initial surge in energy prices coincided with the imposition of the 5-cent-a-gallon tax on gasoline on April 1.

During the first 6 months of the year, the Producer Price Indexes (PPI) for finished goods and for intermediate materials showed slight decreases, while that for crude materials registered a moderate increase. The difference in the annual rate during the first half of 1983 and during the 12 months ended in December 1982 for producer costs of crude materials was largely attributable to a sharp upturn in the prices of foodstuffs and feedstuffs and in nonfood materials less energy. (See table 2.) The large decrease in intermediate materials and finished goods prices in the first quarter followed a corresponding change for crude materials in the second half of 1982. As in the CPI, energy prices were a major factor in the first quarter deceleration and subsequent second quarter increase.

Energy prices fall, then spurt

Energy costs declined at a seasonally adjusted annual rate of 4.8 percent during the first half of 1983. An annual rate of decrease of 25.1 percent in the first quarter was nearly offset by a second quarter increase at an annual rate of 21 percent. (See table 3.) This large second quarter spurt in energy costs accounted for more than 40 percent of the second quarter rise in the overall CPI. Energy prices had increased 1.3 percent during all of 1982.

The first quarter drop in energy prices was largely due to a continued abundance of crude oil supplies, as OPEC members failed until March to administer production quotas which would bring oil supply more closely in line with reduced oil demand. The slack domestic oil demand in the first quarter occurred because there was mild winter weather in the oil-consuming Northeast region and low industrial demand for energy resources during the first months of the recovery. Of the major individual components in the energy index, lower prices for fuel oil, electricity, and motor fuels were primarily responsible for the large decline in the first quarter index. These falling prices were followed by partially offsetting second quarter price increases. The only major energy component to vary from this pattern was piped gas, which posted sizable increases in both quarters.

Prices of motor fuels, which account for half of the energy index, demonstrated the most dynamic quarter-to-quarter swing. From a first-quarter plunge at a seasonally adjusted annual rate of 36.3 percent, the index jumped at a rate of 41.4 percent in the second quarter. Abundant oil supplies, which had lowered motor fuel prices 6.5 percent in 1982, continued through the first quarter of 1983. By March, the index for gasoline prices had declined to its January 1980 level.

The second quarter, however, saw the drying up of surplus oil supplies as OPEC production quotas designed to stabilize a $29 per barrel price for crude oil took effect. Along with tightening supplies and the approach of the high-demand summer driving season, a Federal excise tax of 5 cents a gallon was imposed in April. Most refineries appear to have taken advantage of consumers' expectations of higher pump prices associated with the tax to pass on additional increases. Several States also increased their own gasoline taxes. The total increase in motor fuel prices following the imposition of the Federal excise tax was substantially larger than the 5 cents. The March to June increase in pump prices was almost 13 cents a gallon.

Household fuel prices account for the other half of the energy index. Compared with the behavior of motor fuels prices, their 8.5 percent rate of decline in the first quarter

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and 4.5 percent increase in the second quarter were decidedly less volatile. The decrease in fuel oil prices in the first quarter (43.6 percent) and the moderate drop in charges for electricity (4.1 percent) were partially offset by a 14.3-percent increase in the index for piped gas. A second quarter turnaround in the indexes for fuel oil and electricity, which were up at annual rates of 2.1 and 2.6 percent, in part, moderated another sizable increase in piped gas of 17.6 percent.

The continued climb in piped natural gas prices reflects the continuing effects of decontrol and take-or-pay contracts. However, as the result of attempted renegotiations in long-term take-or-pay contracts, the piped gas index fell four-tenths of a percent from May to June. This was the first decline in piped gas prices since August 1982.

An omen of future piped gas price changes, the PPI for natural gas decreased during the second quarter at an annual rate of 14.8 percent. Further piped gas price reductions are possible as suppliers attempt to stabilize prices to discourage users from switching to cheaper fuel oil.

Electricity rates followed the general trend of other energy prices as oil-fired plants took advantage of the lower first-quarter fuel oil prices. As fuel oil prices increased in the second quarter, electricity rates increased at a 2.6-percent annual rate.

Increase in shelter costs

The index for services less energy rose at a 4.2-percent annual rate in the first 6 months of 1983, following a 3.4-percent rise in 1982. (See table 4.) Costs of shelter services and other household services accounted for much of the increase. The index for owners' equivalent rent, which represents the cost of shelter services of owner-occupied housing, advanced at a 4.4-percent annual rate, and the residential rent component increased at a 4.5-percent rate during the first half of the year. Other renters' costs, despite a sharp increase in charges for out-of-town lodging, registered a smaller rate of increase during the first half of 1983 than during 1982.

Among other household services, prices for maintenance and repair services accelerated from the preceding year, as increased activity in construction was accompanied by higher labor charges. Prices for telephone and water and sewage services rose sharply in the first 3 months, then moderated

Table 1. Changes in selected components of the Consumer Price Index for All Urban Consumers, 1982–83

Index	Relative importance, Dec. 1982	12-month percent change, Dec. 1981 to Dec. 1982	Compound annual rate, seasonally adjusted, except as noted, for 3 months ended—				Annualized effect[1] for 3 months ended	
			1982		1983		Mar. 1983	June 1983
			Sept.	Dec.	Mar.	June		
All items	100.000	3.9	4.1	0.5	0.4	5.4	0.4	5.4
Food and beverages	20.069	3.2	.9	.9	3.0	1.9	.6	.3
Food at home	12.867	2.2	−1.8	−1.1	3.5	.3	.4	.0
Food away from home	6.097	5.0	6.2	5.0	2.2	4.4	.1	.3
Alcoholic beverages	1.106	4.0	4.3	3.5	5.2	3.6	.1	.0
Housing	37.721	3.6	3.2	−2.4	1.6	4.3	.5	1.6
Shelter	21.339	2.4	2.0	−7.2	3.9	5.3	.8	1.1
Renters' costs	6.932	[2]	[2]	[2]	4.5	4.8	.3	.3
Homeowners' costs[3]	13.881	[2]	[2]	[2]	3.6	5.3	.5	.8
Maintenance and repairs[3]	.526	4.2	2.8	−.7	2.5	6.3	.0	.0
Fuel and other utilities	8.377	9.7	10.7	14.2	−4.8	4.2	−.4	.3
Household furnishings and operation	8.005	3.5	1.7	3.8	1.2	1.9	.1	.1
Apparel and upkeep	5.205	1.6	2.7	−.2	2.9	5.0	.1	.3
Apparel commodities	4.422	.9	2.0	−1.5	3.1	4.7	.1	.2
Apparel services	.783	6.2	7.9	6.6	2.1	6.0	.0	.0
Transportation	21.791	1.7	5.7	.3	−8.9	11.7	−2.0	2.4
Private transportation	20.250	1.4	5.5	.1	−9.6	12.0	−2.0	2.3
New vehicles	3.936	1.5	5.0	−1.0	6.6	−3.1	.2	−.1
Used cars	4.056	10.9	4.2	8.6	11.1	9.2	.4	.6
Motor fuel	6.191	−6.5	9.2	−4.8	−36.3	41.1	−2.7	2.0
Public transportation[3]	1.541	6.5	9.2	2.6	−1.2	7.8	.0	.1
Medical care	5.995	11.0	11.6	10.0	8.8	5.5	.5	.3
Medical care commodities	.976	9.6	10.1	8.7	8.3	7.3	.1	.1
Medical care services	5.019	11.2	11.9	10.1	9.1	5.0	.4	.3
Entertainment	4.206	5.6	5.4	4.6	4.6	2.0	.2	.1
Other goods and services	5.014	12.1	10.3	18.4	9.1	6.8	.5	.3
All items	100.000	3.9	4.1	.5	.4	5.4	.4	5.4
Food	18.963	3.1	.6	.8	2.8	1.7	.5	.3
Energy	12.405	1.3	8.1	10.2	−25.1	21.0	−3.2	2.3
Commodities less food and energy	26.201	5.8	2.4	5.4	5.7	2.9	1.4	.8
Services less energy	42.431	3.4	4.6	−4.8	3.7	4.6	1.7	2.0
All items	100.000	3.9	4.1	.5	.4	5.4	.4	5.4
Commodities	52.908	3.6	3.2	3.0	−2.4	6.1	−1.5	3.2
Services	47.092	4.3	5.1	−2.8	3.7	4.7	1.9	2.2

[1] The amount of the "all items" percent change caused by the specific component at a compound annual rate, seasonally adjusted except as noted.

[2] Data are not available.

[3] Data are not seasonally adjusted.

from March to June, increasing at an annual rate of 6.5 percent during the first 6 months of 1983.

The increase in charges for medical care services slowed to a 7-percent annual rate in the first 6 months of 1983, compared to 11.2 percent in 1982. The cost of hospital rooms continued to rise substantially, but at a slower rate than in the last 2 years. Charges for professional services—physician, dental, and other professional services—accelerated somewhat, increasing at an annual rate of 8.3 percent in the first half of 1983, following a 6.9-percent increase in 1982.

Among other services, the transportation service index increased at a slower rate this year than in 1982, due to larger declines in auto financing charges and a slower rate of increase in automobile registration fees and most forms of public transportation. Declining fuel costs and competition-induced discount airline fares were largely responsible for the first-quarter decline in public transportation price increases. An increase in airline fares, partially due to fewer discount fares, and a sharp jump in intercity bus fares, were responsible for the second-quarter advance of 7.8 percent. Prices for most other types of services, including entertainment, personal care, apparel, and personal and educational expenses also decelerated in the first half of 1983.

Food price increases small

For the 6 months ended in June, retail food prices increased at an annual rate of 2.2 percent. (See table 5.) Although larger than the increase during the second half of 1982, the annual rate for food price increases was still smaller than the rate for 1982 as a whole. Adequate to abundant supplies at the wholesale level, lower energy costs, and reduced demand contributed to the slowdown of retail food prices. All major grocery store food groups recorded small increases in the first half. At the farm level, the PPI for crude foodstuffs and feedstuffs advanced at a 9.1-percent annual rate from December to June with smaller increases reflected in the intermediate and finished consumer foods series. The second-quarter increases at all three stages of processing, however, were markedly less than during the first quarter.

Of all the major food groups, fruits and vegetables, being particularly sensitive to weather conditions, exhibited the greatest month-to-month price fluctations. Nearly offsettng large monthly price swings resulted in a 6-month annual rate of increase of 2.7 percent. Fresh vegetable prices rose sharply during the first 6 months, at a 14-percent seasonally adjusted annual rate. Heavy rains during the winter and early spring in Florida, California, and western Mexico (an important U.S. supplier of winter and spring vegetables) disrupted planting and harvesting schedules, delayed growth, reduced yields, and damaged crops. Prices were sharply higher for potatoes and lettuce in the second quarter, while tomato prices shot up during the first quarter and then fell in the second quarter to levels substantially lower than 12 months earlier. By June, prices for most fresh vegetables had declined from their spring levels. Fresh fruit prices were down at a 4.3-percent annual rate in the first half of the year, as a large drop in the first quarter was partially offset by a small increase in the second. Unfavorable weather conditions in Central America pushed up prices for bananas, while a large Florida citrus crop kept price increases in other fresh fruits indexes small. Prices for apples, oranges, and other fresh fruits remain well below those of a year ago.

The index for meats, poultry, fish, and eggs recorded a slight increase during the first half. A sharp jump in egg prices, coupled with moderate price increases in poultry and fish and seafood, were enough to offset the declines in pork and beef prices. Ample supplies and sluggish demand resulted in a sharp drop in pork prices, while less than seasonal

Table 2. Changes in producer prices, by stage of processing, 1982–83

Item	Relative importance Dec. 1982	12-month percent change Dec. 1981 to Dec. 1982	Compound annual rate, seasonally adjusted except as noted, for 3 months ended—			
			1982		1983	
			Sept.	Dec.	Mar.	June
Finished goods	100.000	3.7	4.2	5.2	−4.7	2.9
Finished consumer goods	77.495	3.6	4.4	5.8	−6.8	3.4
Finished consumer foods	23.702	2.1	−7.7	.8	3.6	.2
Finished energy goods	13.189	−.1	30.9	7.0	−34.3	10.1
Finished consumer goods less food and energy	40.607	5.3	4.2	7.9	−2.3	2.9
Capital equipment	22.502	3.9	3.5	3.6	3.3	.8
Intermediate materials	100.000	.2	1.4	1.3	−4.4	4.1
Intermediate foods and feeds	4.802	.0	−13.7	−4.5	9.9	6.1
Intermediate energy goods	16.481	−.7	7.3	6.6	−25.7	5.3
Immediate materials less foods and energy	78.717	.6	1.0	1.0	1.1	2.5
Crude materials	100.000	.4	−12.2	1.5	3.6	5.2
Crude foodstuffs and feedstuffs	51.183	1.5	−26.4	1.3	18.1	.8
Crude energy materials[1]	34.388	2.6	8.7	6.4	−7.6	−6.5
Crude nonfood materials less energy	14.429	−7.6	2.9	−8.0	−15.7	58.5

[1] Data are not seasonally adjusted.

Table 3. Changes in consumer prices for energy-related items 1982–83

Index	Relative importance Dec. 1982	12-month percent change Dec. 1981 to Dec. 1982	Compound annual rate, seasonally adjusted except as noted, for 3 months ended—			
			1982		1983	
			Sept.	Dec.	Mar.	June
Energy	12.405	1.3	8.1	10.2	−25.1	21.0
Household fuels	6.214	10.5	12.3	17.1	− 8.5	4.5
Fuel oil	1.340	−.7	11.6	10.6	−43.6	2.1
Electricity	2.588	6.4	5.0	8.8	− 4.1	2.6
Gas (piped)[1]	2.073	25.4	17.4	27.1	14.3	17.6
Motor fuel	6.191	−6.5	9.2	−4.8	−36.3	41.1
Gasoline	–	−6.6	9.2	−5.1	−36.2	41.7

[1] Data are not seasonally adjusted.

increases yielded a small seasonally adjusted decrease in beef prices. Although registering a small rise during the first 6 months of 1983, poultry prices, like those of beef and pork, have declined over the past 12 months. The U.S. Department of Agriculture (USDA) estimates that red meat and pork supplies will remain well above those of a year earlier. Plentiful supplies also characterized the poultry industry, but increased feed costs and lower profitability are expected to result in monthly supplies that will be the same or slightly less than in the preceding year. Retail egg prices increased sharply in the first half, as production decreased.

Prices for dairy products have increased at a 1.6-percent annual rate, reflecting continued burdensome milk supplies during the first 6 months. Because of this oversupply, and in order to reduce price support costs to the Government, a 50-cent-per-hundredweight tax on producers of all commercial milk was implemented in April 1983. The impact of this action, combined with high feed costs and slowing gains in milk production, may increase retail prices for most dairy products later in the year.

Spurred by a stronger economy, overall per-capita food consumption is likely to rise in 1983. Despite increased demand, continuing ample supplies should yield only moderate price increases for most food items. The recently implemented PIK (payment-in-kind) and other acreage reduction programs designed to reduce surplus grains and booster prices at the farm level are expected to have little or no effect through the remainder of this year, and will push up retail food prices only slightly next year, according to USDA. Because idled acres will be those that are least productive, yields per acre are likely to increase although total production is expected to decline. Estimated production declines associated with the 1983 acreage decrease are 10, 50, and 45 percent for wheat, rice, and corn. Recent drought conditions may further restrict supplies and eventually drive up grain prices.

Table 4. Changes in prices for consumer services, less energy, 1982–83

Index	Relative importance Dec. 1982	12-month percent change Dec. 1981 to Dec. 1982	Compound annual rate, seasonally adjusted except as noted, for 3 months ended—			
			1982		1983	
			Sept.	Dec.	Mar.	June
Services less energy	42.431	3.4	4.6	−4.8	3.7	4.6
Rent of shelter[1]	20.340	(2)	(2)	(2)	4.1	5.2
Rent, residential[1]	6.029	6.6	8.0	7.1	4.9	4.0
Owners' equivalent rent[1]	13.490	(2)	(2)	(2)	3.2	5.7
Other renters' costs	.904	8.7	18.4	−2.3	.0	10.7
Household services less rent of shelter[1]	9.810	(2)	(2)	(2)	6.6	10.6
Maintenance and repair services[1]	.284	4.5	3.7	−1.2	5.8	5.3
Household insurance[1]	.391	(2)	(2)	(2)	6.1	3.6
Telephone service[1]	1.487	7.3	5.8	6.7	9.6	3.1
Water and sewage maintenance	.491	9.2	9.6	4.2	12.2	3.9
Housekeeping services[1]	2.228	2.6	2.2	2.1	1.8	2.7
Apparel services	.783	6.2	7.9	6.6	2.1	6.0
Transportation services	6.863	5.3	5.5	1.1	.3	2.3
Auto maintenance repair	1.707	6.2	6.2	3.7	2.7	4.5
Other private transportation[1]	3.615	4.4	3.7	−.7	−.4	−.9
Public transportation[1]	1.541	6.5	9.2	2.6	−1.2	7.8
Medical care services	5.019	11.2	11.9	10.1	9.1	5.0
Entertainment services[1]	1.721	6.8	8.4	5.2	6.4	4.7
Personal care services[1]	1.007	5.8	6.1	6.8	2.3	3.3
Personal and educational services	1.549	12.6	11.5	13.0	8.6	11.4

[1] Data are not seasonally adjusted.
[2] Data are not available.

Table 5. Changes in consumer food prices, 1982–83

Index	Relative importance Dec. 1982	12-month percent change Dec. 1981 to Dec. 1982	Compound annual rate, seasonally adjusted except as noted, for 3 months ended—			
			1982		1983	
			Sept.	Dec.	Mar.	June
Food	18.963	3.1	0.6	0.8	2.8	1.7
Food at home	12.867	2.2	−1.8	−1.1	3.5	.3
Cereals and bakery products[1]	1.700	3.1	1.4	2.4	5.0	3.6
Meats, poultry, fish, and eggs	4.216	3.1	0.8	−7.0	2.5	−2.0
Dairy products[1]	1.699	.9	1.1	1.3	2.9	.3
Fruits and vegetables	1.860	.4	−15.9	2.3	3.4	2.1
Other foods at home	3.391	2.5	1.0	1.4	4.9	.5
Food away from home	6.097	5.0	6.2	5.0	2.2	4.4

[1] Data are not seasonally adjusted.

Commodity prices decelerate

Prices for commodities excluding food and energy rose at a 4.3-percent seasonally adjusted annual rate during the first half of 1983, a notable slowdown from the 5.8-percent rate for all of 1982. A 5.7-percent increase in the first quarter slowed to a 2.9-percent rate from March to June. (See table 6.) Within this category, new cars, tobacco products, and textile housefurnishings experienced the most dramatic shift in prices from quarter to quarter, but most other commodities also slowed down during the recent quarter.

New vehicle prices increased at an annual rate of 1.6 percent during the first 6 months of the year, largely repeating the 1982 experience of 1.4 percent for the year as a whole. From December to March, prices rose 6.8 percent, then they fell 3.5 percent in the second quarter. The price hike associated with the introduction of the 1983 cars was delayed as dealers tried to move large inventories of 1982 cars in the latter part of last year. As a result, the easing of prices, which in the past occurred in February and March, did not happen, causing the large seasonally adjusted increase. On the other hand, manufacturers in the recent past have phased in introductory price increases in a quarterly basis, usually between January and April. To encourage sales, the usual April increase was deferred this year. In addition, several companies continued rebate programs, leading to a significant decrease in the second quarter.

Table 6. Changes in prices for consumer goods other than food and energy, 1982–83

Index	Relative importance Dec. 1982	12-month percent change Dec. 1981 to Dec. 1982	Compound annual rate, seasonally adjusted except as noted, for 3 months ended—			
			1982		1983	
			Sept.	Dec.	Mar.	June
Commodities less food and energy	26.201	5.8	2.4	5.4	5.7	2.9
Food and beverage:						
Alcoholic beverages	1.106	4.0	4.3	3.5	5.2	3.6
Housing:						
Maintenance and repair commodities[1]	.242	3.3	−.9	1.2	−1.2	7.3
Textile housefurnishings	.574	5.1	2.9	3.7	8.9	−3.0
Furniture and bedding	1.300	2.7	.8	4.2	−1.1	6.7
Appliances, including radio and t v.	1.208	2.4	.3	0	1.1	−1.3
Other household equipment[1]	1.009	3.9	−3.4	4.1	4.4	1.4
Housekeeping supplies	1.686	5.4	5.6	4.9	2.1	1.2
Apparel and upkeep:						
Apparel commodities less footwear	3.744	1.0	2.5	−1.3	3.0	5.7
Footwear	.678	.1	−.8	−2.7	4.6	−.4
Transportation:						
New vehicles	3.936	1.5	5.0	−1.0	6.6	−3.1
Used cars	4.056	10.9	4.2	8.6	11.1	9.2
Auto parts and equipment[1]	.643	−.5	−8.1	.6	−2.9	−6.6
Medical care:						
Medical care commodities	.976	9.6	10.1	8.7	8.3	7.3
Entertainment:						
Entertainment commodities	2.485	4.9	3.6	4.2	3.7	.0
Other goods and services:						
Tobacco products[1]	1.387	20.1	16.0	48.2	17.2	3.7
Toilet goods and personal care applicances[1]	.850	7.5	4.6	5.1	8.0	6.9
School books and supplies	.220	11.3	13.1	6.8	11.5	12.5

[1] Data are not seasonally adjusted.

Used car prices, which increased 10.9 percent in 1982, advanced at about the same rate (10.1 percent) during the first half of 1983. Prices had soared from December 1979 to December 1981, increasing at an annual rate of nearly 20 percent, because of the robust secondary market associated with dismal performance of new car sales.

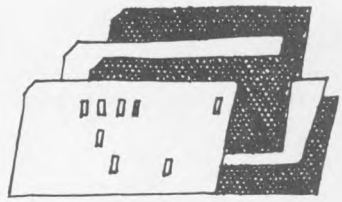
Tobacco products also showed a major deceleration of prices between the first and second quarter. The price increase, at a 3.7-percent annual rate from March to June, was significantly below the 17.2- and 48.2-percent rates recorded in the previous two quarters. Last summer, the Federal Government enacted an increase of 8 cents per pack in the Federal excise tax on cigarettes, effective January 1, 1983. Manufacturers steadily increased prices in the latter part of 1982, ostensibly to avoid a large one-time price hike, thus causing the sharp advance in the fourth quarter of last year. With the actual imposition of the tax, a large increase was reflected early in the first quarter, with relatively moderate price increases afterwards.

Most other commodities within this grouping showed some price moderation between 1982 and the first half of 1983. The major exception was clothing prices, which rose at an annual rate of 3.9 percent in 1983, following a 0.9-percent increase in 1982. □

FOOTNOTE

[1] Beginning in January 1983, the CPI-U used an improved method based on rental equivalence to measure homeowners costs. The rental equivalence approach calculates homeowner costs of the shelter based on the implicit rent owners would have to pay to rent the homes they occupy. The CPI-U which used the asset approach to homeownership (old series), showed a 2.5 percent annual rate of increase after seasonal adjustment.

Research Summaries



Employment and wages reported by California farmers in 1982

GARY JOHNSTON AND PHILIP L. MARTIN

In California, the Nation's largest agricultural State, 82,000 farms reported employing an annual average of 66,000 farmers and family workers and 223,000 hired workers to produce crops and livestock worth $14 billion in 1982. The vitality of California agriculture obviously has a significant influence on the health of the State's economy.

Most farms in the United States and in California are owned and operated by farmers and their families. Throughout the Nation, farmers do 70 percent of all farm work, but in California hired workers do 70 percent of the State's farm work and farmers, only 30 percent.

Farm labor statistics are confusing and contradictory. The Federal Government collects information on farm labor in the Census of Agriculture. The U.S. Department of Agriculture sends an employment questionnaire to farmers in July and publishes the results in *Farm Labor*. The department also contracts with the Bureau of the Census to ask the 60,000 households in the Current Population Survey questions about farmwork every other December and publishes the results from about 1,500 farmworker households in biennial *The Hired Farm Work Force* reports. California's local Job Service offices submit monthly estimates of agricultural employment that are published in 881 reports of the State's Economic Development Department. These information gathering efforts have different purposes and utilize different survey techniques, so each deals with a different part of the heterogeneous farm labor market. A further complication is the presence of the unreported illegal or "undocumented" workers who pour into the market, mostly from Mexico.

The Census of Agriculture reported that more than half of California farms hired a total of 800,000 farmworkers in 1978 (a worker employed on two farms would be counted twice). The July 1982 survey of employers reported in *Farm Labor* that California farms employed 240,000 workers who averaged 43 hours of work each week. Wages averaged $4.39 for hourly workers and $6.63 per hour for piece-rate workers. The 1981 Hired Farm Work Force survey interviewed a sample of farmworkers and reported that 334,000 persons worked at least 1 hour for wages in California, Arizona, Hawaii, and Nevada. Of this number, about 49 percent were Hispanic. California's monthly estimates show hired farmworker employment ranging from 175,000 in March to 270,000 in September, or an annual average of 223,000 hired farmworkers.

The farm labor data collected regularly by Federal and State agencies are confusing to policymakers and of limited use to farmers and farmworker representatives because each statistical system paints a different but unclear picture of the farm labor market. Much as the blind men describing the elephant, generalizations from a single data series may give a misleading impression of the job market in a particular commodity or region. To generate more detailed information, a farm labor questionnaire was mailed to California farmers by several farm organizations in 1982.[1] Farmers were asked 13 questions about commodities grown, the number of year-round and seasonal employees, hours of work and wages, and employer satisfaction with the quality and quantity of farmworkers.

The 1982 survey

More than 800 employers responded to the survey, and they represented the spectrum of crops and livestock produced in California. More than half were growers. Most of the respondents (58 percent) produced or worked in the fruit and nut industry. The survey was mailed to employers throughout the State, and 64 percent of the responses came from the San Joaquin Valley, the State's major agricultural area.

The farmers reported that they employed 42,000 year-round workers and 139,000 seasonal workers in 1981. The 619 farms that employed year-round workers averaged 68

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Table 1. Year-round farmworkers and hourly wages by region and crop

Region	Employees					Hourly wages				
	Number of farms	Mean	Standard deviation	Minimum	Maximum	Number of farms	Mean	Standard deviation	Minimum	Maximum
All regions										
Multiregion[1]	619	67.7		1	1,820	610	$4.91	$1.25	$3.35	$12.80
All crops	22	112.5		3	700	18	6.11	1.35	4.00	10.25
Vegetables	11	157.1	209.9	3	700	9	6.77	1.80	4.00	10.25
Fruits and nuts	7	61.8	96.2	5	275	5	5.86	0.97	5.00	7.50
Livestock	1	250.0	—	—	—	1	4.60	—	—	—
Diversified	3	22.0	13.6	6.0	30	3	5.41	1.11	4.75	6.70
Southern California[2]										
All crops	75	160.7	239.1	1	1,820	68	4.77	0.97	3.35	10.00
Field crops	7	11.4	17.7	1	50	7	4.97	0.49	4.35	5.90
Vegetables	26	94.8	165.5	2	700	24	4.71	1.40	3.35	10.00
Fruits and nuts	15	450.3	634.6	1	1,820	11	5.18	0.88	3.35	6.50
Nurseries	7	203.8	272.1	14	600	6	4.36	0.54	3.65	5.00
Livestock	4	9.5	4.7	3	14	3	4.25	0.75	3.50	5.00
Diversified	16	80.8	129.2	2	400	17	4.75	0.81	3.50	6.50
South coast[3]										
All crops	46	57.9	77.6	1	500	46	6.00	1.17	3.83	10.45
Field crops	3	23.3	20.1	1	40	4	6.37	0.68	5.80	7.30
Vegetables	38	57.2	91.3	2	500	37	6.09	1.28	3.83	10.45
Fruits and nuts	1	375.0	—	—	—	1	5.26	—	—	—
Diversified	4	11.7	10.7	2	22	4	5.08	0.99	4.00	6.00
Central coast[4]										
All crops	54	76.2	129.7	1	825	53	6.40	1.68	3.75	12.80
Field crops	1	5.0	—	—	—	1	4.50	—	—	—
Vegetables	44	87.7	152.7	2	825	42	6.68	1.96	3.75	12.80
Fruits and nuts	4	24.2	24.3	1	50	5	5.61	1.16	4.00	7.00
Nurseries	3	50.0	63.3	9	123	3	4.68	0.35	4.30	5.00
Livestock	1	1.0	—	—	—	1	5.00	—	—	—
Diversified	1	4.0	—	—	—	1	7.50	—	—	—
San Joaquin Valley[5]										
All crops	363	51.6	151.6	1	1,594	372	4.55	0.86	3.35	10.00
Field crops	17	24.4	40.3	2	175	17	4.37	0.68	3.40	6.35
Vegetables	27	16.7	21.0	1	100	23	4.89	1.12	3.65	7.50
Fruits and nuts	260	41.7	144.4	1	1,594	278	4.52	0.87	3.35	10.00
Nurseries	1	160.0	—	—	—	1	5.00	—	—	—
Livestock	8	9.6	10.1	1	30	5	4.38	1.16	3.50	6.30
Diversified	50	136.3	323.4	1	1,560	48	4.69	0.77	3.50	7.30
North coast[6]										
All crops	16	12.9	14.1	1	50	15	4.52	1.17	3.50	7.71
Fruits and nuts	9	16.2	18.8	1	50	10	4.66	1.31	3.50	7.71
Nurseries	1	26.0	—	—	—	1	4.00	—	—	—
Livestock	6	5.8	9.4	1	25	4	6.42	1.13	3.50	6.00
Sacramento Valley[7]										
All crops	43	37.5	76.3	1	1,000	38	4.69	0.92	3.60	7.50
Field crops	10	14.2	13.69	1	40	9	4.78	0.80	3.65	6.22
Vegetables	3	6.0	3.6	3	10	2	5.12	0.17	5.00	5.25
Fruits and nuts	19	7.5	7.2	1	30	19	4.39	0.95	3.60	7.50
Nurseries	2	36.5	40.3	8	65	1	5.25	0.80	—	—
Diversified	9	137.5	324.4	2	1,000	7	5.23	1.25	4.00	6.35

[1] Employers with locations in several regions.
[2] Los Angeles, San Bernardino, Orange, Riverside, Imperial counties.
[3] Ventura, Santa Barbara, San Luis Obispo counties.
[4] Monterey, San Benito, Santa Cruz, Santa Clara, San Mateo, Alameda, Contra Costa counties.
[5] Kern, Inyo, north through San Joaquin, Calaveras, and Alpine counties.
[6] Marin, Napa, Sonoma, Lake, Mendocino, Trinity, Humboldt, Del Norte counties.
[7] Solano, Sacramento, Yolo, Amador, north through Siskiyou and Modoc counties.

SOURCE: Field Workweek Survey, 1982.

per farm, with a range of 1 to 1,820. (See table 1.) Most of the farms employed fewer than 10 year-round workers; 81 percent surveyed had fewer than 50.

A total of 755 farms employed 139,000 seasonal workers sometime in 1981 (seasonal workers are double-counted if they work for two responding employers). (See table 2.) Respondents employed an average of 184 seasonal farmworkers, ranging from a low of 2 to a high of 15,000 seasonal workers (one vegetable farm in Southern California). More than 41 percent of responding farms reported that they hired between 11 and 50 seasonal workers. Farms in Southern California employed most of the seasonal workers: 29 vegetable farms averaged 750 seasonal workers each, and 13 fruit and nut farms averaged 890 seasonal employees each.

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Some seasonal workers leave the area or the State after the harvest and then migrate back to California the following season. However, only 39 percent of the seasonal workers were reported to have migrated to their farm jobs from other areas. Workers who resided in the area made up 45 percent of all seasonal farmworkers, and an additional 16 percent commuted to their jobs. Generally, livestock and nursery

Table 2. Seasonal farmworkers and hourly wages by region and crop

Region	Employees					Hourly wages				
	Number of farms	Mean	Standard deviation	Minimum	Maximum	Number of farms	Mean	Standard deviation	Minimum	Maximum
All regions										
Multiregion[1]	755	183.7	627.07	2	15,000	711	$4.85	$1.71	$3.00	$20.00
All crops	24	279.2	321.9	6	1,300	22	6.64	2.95	3.50	18.00
Vegetables	13	376.6	403.5	6	1,300	12	7.53	3.74	4.00	18.00
Fruits and nuts	7	178.0	136.3	15	350	6	6.20	2.49	4.50	11.00
Livestock	1	270.0	—	—	—	1	4.35	—	—	—
Diversified	3	96.6	106.9	30	220	3	4.73	1.72	3.50	6.70
Southern California[2]										
All crops	76	492.3	1,304.2	3	15,000	70	4.47	1.03	3.35	10.00
Field crops	7	38.7	50.9	4	150	7	4.45	0.89	3.75	6.30
Vegetables	29	750.2	2,753.9	6	15,000	28	4.65	1.47	3.35	10.00
Fruits and nuts	13	889.7	1,034.9	4	4,000	12	4.67	0.61	3.40	5.50
Nurseries	7	227.5	310.3	17	750	4	3.70	0.40	3.35	4.25
Livestock	4	16.7	13.3	3	38	3	4.08	0.52	3.50	4.50
Diversified	16	135.6	201.5	6	800	16	4.31	0.91	3.40	6.50
South coast[3]										
All crops	43	166.3	196.1	8	1,200	40	6.42	2.19	3.75	16.66
Field crops	2	72.0	60.8	29	115	1	5.90	—	—	—
Vegetables	36	175.9	207.6	8	1,200	34	6.59	2.41	3.75	16.66
Fruits and nuts	1	134.0	—	—	—	1	4.90	—	—	—
Diversified	4	135.7	210.1	8	450	4	5.56	1.47	4.00	7.50
Central coast[4]										
All crops	59	160.5	213.7	3	1,500	56	6.78	2.78	3.50	20.00
Field crops	1	150.0	—	—	—	1	4.50	—	—	—
Vegetables	46	175.1	246.0	5	1,500	43	7.36	3.36	4.00	20.00
Fruits and nuts	7	67.4	42.1	6	120	7	5.09	1.57	3.50	7.50
Nurseries	2	17.5	9.1	11	24	2	4.10	—	4.10	4.10
Livestock	2	351.5	492.8	3	700	2	4.50	0.35	4.25	4.75
Diversified	1	60.0	—	—	—	1	6.00	—	—	—
San Joaquin Valley[5]										
All crops	490	149.7	301.4	2	2,700	463	4.48	1.01	3.35	10.00
Field crops	17	94.0	110.4	5	460	16	3.76	0.30	3.40	4.42
Vegetables	28	203.3	283.3	4	1,221	26	4.65	1.11	3.35	8.00
Fruits and nuts	390	120.2	235.8	2	2,100	367	4.52	1.05	3.00	10.00
Nurseries	1	300.0	—	—	—	1	4.40	—	—	—
Livestock	3	25.3	14.0	12	40	4	4.17	0.73	3.40	5.00
Diversified	51	368.7	590.4	7	2,700	49	4.36	0.98	3.35	9.00
North coast[6]										
All crops	15	55.8	82.0	5	350	15	5.23	1.40	3.00	8.00
Fruits and nuts	12	65.2	97.1	8	350	11	5.46	1.30	3.50	8.00
Livestock	3	18.6	21.9	5	44	4	4.62	1.70	3.00	7.00
Sacramento Valley[7]										
All crops	48	77.8	112.8	6	600	45	4.48	0.73	3.50	7.50
Field crops	10	38.0	26.6	9	85	10	4.50	0.88	3.50	6.68
Vegetables	4	49.5	26.2	15	70	3	5.11	0.95	4.10	6.00
Fruits and nuts	23	62.1	63.7	6	300	20	4.06	0.42	3.50	5.00
Nurseries	1	70.0	—	—	—	2	4.70	0.28	4.50	4.91
Diversified	10	166.1	210.2	6	600	10	5.08	1.25	4.00	7.50

[1] Employers with locations in several regions.
[2] Los Angeles, San Bernardino, Orange, Riverside, Imperial counties.
[3] Ventura, Santa Barbara, San Luis Obispo counties.
[4] Monterey, San Benito, Santa Cruz, Santa Clara, San Mateo, Alameda, Contra Costa counties.
[5] Kern, Inyo, north through San Joaquin, Calaveras, and Alpine counties.
[6] Marin, Napa, Sonoma, Lake, Mendocino, Trinity, Humboldt, Del Norte counties.
[7] Solano, Sacramento, Yolo, Amador, north through Siskiyou and Modoc counties.

SOURCE: Field Workweek Survey, 1982.

workers resided locally; seasonal field crop workers tended to commute to their jobs. Seasonal workers on field, fruit and nut, and diversified farms were most likely to migrate. Of the average 186 seasonal workers employed on responding farms, 84 were local residents, 73, migrants, and 29, commuters.

Hourly wages

Average hourly wages were $5.16 for year-round workers and $5.14 for seasonal farmworkers. These wages, which are higher than State estimates, are gross wages that reflect cash and piece-rate wages paid to workers. The wages do *not* include mandatory taxes for social security (13.4 percent of base wages), unemployment insurance (4 to 6 percent), and workers' compensation insurance (6 to 18 percent). Nor do they include the cost of fringe benefits, such as health insurance, vacation, pension contributions, and transportation allowances. Respondents reported one average wage for all their year-round workers and another for seasonal workers, so these sample averages obscure the variation in wages on each farm.

Reported farmworker wages varied widely across California. Hourly wages for year-round workers ranged from $3.35 to $12.80. Year-round vegetable workers in the Central Coast region that includes the Salinas Valley averaged $6.68 hourly, and vegetable wages elsewhere ranged from $6.77 hourly on multiregion farms to $4.71 on Southern California vegetable farms. Year-round livestock and field

crop workers received the lowest hourly wages, usually $4.25 to $4.75. The highest wages were reported by a Salinas vegetable farm that paid its year-round workers an *average* hourly wage of $12.80; the lowest, by Southern California fruit and vegetable farms that paid their year-round workers $3.35 hourly.

Seasonal workers averaged $5.14 hourly, with a range of $3 to $20. Seasonal vegetable workers in the Central Coast region averaged $7.36 hourly, while field workers in the San Joaquin Valley averaged only $3.77 per hour. A Salinas vegetable farm reported the highest wages, an average of $20 hourly; a North Coast livestock farm reported the lowest, an average of $3. Seasonal fruit and vegetable workers, who often do harvest work for piece rates, had the highest average hourly earnings.

Most respondents offered their year-round and seasonal workers fringe benefits. Health insurance was the most common fringe benefit, offered to 97 percent of all year-round workers and 85 percent of the seasonal workers. More than 87 percent of all year-round workers were eligible for paid vacations, in contrast to 27 percent of the seasonal farm work force. Life insurance was offered to 74 percent of the year-round workers and 41 percent of the seasonal workers. Housing was provided to 26 percent of the seasonal work force and 30 percent of the year-round work force. Generally, seasonal field and livestock workers were less likely to have health insurance (only one-third) but more likely to have housing provided by the employer (two-thirds). Fringe benefits were most common in Southern California, the south coast, and the central coast.

Unions represented 6 percent of the farmworkers employed by responding farms. More than 70 percent of the vegetable employers responding to the survey had unionized work forces. Union contracts were most common in Southern California, the south coast, and the central coast regions. Unionized farmworkers were rare in the north coast and Sacramento Valley regions.

Recruitment and attitudes

The farm labor market experiences simultaneous labor shortages and surpluses as it matches thousands of seasonal workers with jobs that last from several days to several months. Farmers were asked how they recruited farmworkers and if they were satisfied with the quantity and the quality of employed farmworkers. About two-thirds of the respondents reported that they recruited workers directly or relied on current employees to recruit additional workers. About one-fourth of the respondents relied on farm labor contractors to supply some or all of their farmworkers. Livestock farms were most likely to recruit workers directly, while San Joaquin fruit and nut farmers were most likely to rely on farm labor contractors.

Most employers were satisfied with the quality *and* quantity of farmworkers. More than 91 percent of seasonal employers were very or moderately successful in obtaining a sufficient quantity of seasonal workers, and 83 percent were satisfied with the quality of the workers recruited. An overwhelming 95 percent of year-round employers felt that they were very or moderately successful in attracting enough year-round workers, and 94 percent were satisfied with the quality of their year-round employees. Fruit and nut employers, especially in the San Joaquin Valley, reported the most difficulty getting enough seasonal and year-round farmworkers, a difficulty that could be attributed to their heavy reliance on farm labor contractors.

California farmers must pay overtime wages of at least one and one-half times the regular wage after 10 hours of work in any day or 60 hours in any week. Farmers were asked what actions they would take *if* they were required to pay overtime wages after an 8-hour work day and after an employee had worked 40 hours in a week. Farmers were asked to distinguish short-run and long-run actions, selecting from a list of responses that included no change in current practices, hire additional workers, mechanize, change crops, share labor with other employers, rely on a custom harvester, or quit farming. The most frequent *short-run* responses to a change in the overtime wage law were to hire additional workers (62 percent), mechanize wherever possible (51 percent), and make no changes in present practices (24 percent). A significant number of employers, 14 to 17 percent, said they would change production methods, switch to less labor-intensive crops, and rely more on farm labor contractors or custom harvesters, or both.

In the long run, more than 63 percent of the respondents said they would mechanize wherever possible, 33 percent would hire additional workers to reduce overtime wage payments, 32 percent would switch to less labor-intensive crops, and 28 percent would change production methods to use less labor. Field crop and diversified farms were most likely to mechanize immediately, while vegetable farms reported that they would mechanize within 3 to 5 years if the overtime wage law were changed. Only 17 farms said a change in the overtime wage law would cause them to quit farming.

Conclusions

The 1982 farm labor survey provides another view of California's farm labor market. Responses from more than 800 farm employers indicate that the average farm with year-round employees has 68-year-round workers who averaged $5.16 hourly. Farms with seasonal workers employed an average of 184 workers and paid an average of $5.14 hourly. Generally, fruit and vegetable workers in the central coast, southern coast, and Southern California regions had the highest average hourly earnings, while field crop and livestock workers in the north coast and central valley regions had the lowest. Almost all of the responding farms provided health insurance for their year-round and seasonal workers and many offered paid vacations, bonuses, and other fringe benefits.

Employers appeared to be quite satisfied with both the

quantity and quality of farmworkers. If farmers were required to pay overtime wages after 8 hours per day or 40 hours per week, most would try to hire additional workers and mechanize in the short run to reduce overtime wage premiums. In the long run, farmers would mechanize, hire additional workers, and switch to less labor-intensive crops.

The results of the 1982 survey must be interpreted with caution. Questionnaires were distributed to the members of five California farm organizations, and the survey results are based on relatively complete responses from only 12 percent of those who were sent the questionnaire. Respondents appear to include most of the large farm employers who hire the majority of California's farmworkers and have relatively complete records; however, most of the responses were from smaller employers.

The farm labor survey provides benchmark information that will be most useful if future surveys are conducted to chart California's changing farm labor market. Among the questions that need to be clarified in future surveys are those relating to the average weekly and annual earnings of seasonal and year-round farmworkers, the legal status of alien farmworkers, and employer perceptions of how proposed fines for knowingly hiring illegal alien farmworkers and an amnesty for some current farmworkers would affect farm operations. □

FOOTNOTE

[1] Questionnaires were sent by the California Farm Bureau, the California and Tree Fruit League, Western Growers Association, Nisei Farmers League, and the Farm Employers Labor Service.

Wage rates before and after leaving school

Career data collected from 1972 to 1979 by the National Center for Education Statistics show that the greater the educational attainment of young men and women, the higher their starting wage rates. Young men and women of all educational levels generally receive wage rate increases when they leave school, although some increases are larger than others. After graduating from college, young women had wage rates which quickly overtook those of their female high school classmates who did not attend college. Wage rates of young men who did not attend college were higher than their college-educated classmates for at least 8 years after leaving high school. Young women earned less per hour than comparable young men within every educational level and age group.

These findings are from the "National Longitudinal Study of the High School Class of 1972," the Center's first study to follow the progress of young people as they move from high school to adulthood. The sample of 23,451 young adults represents the 12th grade U.S. population in 1972. This study discusses several aspects of the careers of young men and women who make different choices about their education: the reduced earnings capacity of those in college, the crossover point when the wages of the college-educated

Table 1. Median hourly wage rates of young men and women by age and education

Educational level in 1979 at age 25	Year and age							
	1972 18	1973 19	1974 20	1975 21	1976 22	1977 23	1978 24	1979 25
Men	Constant 1980 dollars							
No college:								
Upper bound	4.70	5.43	6.02	5.96	6.11	6.60	6.61	7.08
Median	4.63	5.42	5.83	5.76	5.95	6.59	6.44	7.06
Lower bound	4.47	5.31	5.76	5.62	5.78	6.28	6.20	6.79
Number of cases	2,139	2,311	2,517	2,763	2,796	2,996	3,049	3,078
Less than 2 years of college:								
Upper bound	4.40	5.31	5.80	5.62	6.12	6.57	6.63	7.07
Median	4.25	5.08	5.55	5.62	5.88	6.24	6.20	6.94
Lower bound	4.14	4.99	5.40	5.42	5.60	5.96	6.19	6.75
Number of cases	874	1,015	1,216	1,369	1,390	1,493	1,525	1,532
2 years or more of college:								
Upper bound	4.02	4.50	4.98	5.24	5.57	6.17	6.20	6.77
Median	3.76	4.41	4.88	5.06	5.31	5.96	6.20	6.50
Lower bound	3.74	4.16	4.63	4.94	5.24	5.79	6.19	6.30
Number of cases	801	864	1,062	1,222	1,268	1,475	1,514	1,535
Bachelor's degree:								
Upper bound	3.77	3.97	3.99	4.00	5.25	6.24	6.49	7.06
Median	3.75	3.78	3.76	3.75	5.08	5.96	6.20	6.86
Lower bound	3.71	3.63	3.66	3.73	4.89	5.83	6.19	6.78
Number of cases	659	793	942	1,066	1,436	1,946	2,001	2,035
Advanced degree:								
Upper bound	3.77	4.43	4.24	4.35	5.65	6.56	7.63	7.68
Median	3.75	4.11	3.78	3.63	5.22	6.26	6.82	7.08
Lower bound	3.47	3.34	3.20	3.30	4.47	5.58	6.20	6.70
Number of cases	61	76	83	105	147	201	209	227
Women								
No college:								
Upper bound	3.74	4.08	4.43	4.31	4.38	4.70	4.65	4.72
Median	3.73	4.07	4.33	4.24	4.27	4.63	4.64	4.57
Lower bound	3.57	3.93	4.17	4.14	4.19	4.56	4.63	4.52
Number of cases	2,073	2,294	2,312	2,459	2,412	2,684	2,757	2,817
Less than 2 years of college:								
Upper bound	3.75	4.17	4.57	4.49	4.73	4.95	5.01	5.18
Median	3.67	4.08	4.42	4.47	4.61	4.93	4.94	5.09
Lower bound	3.54	4.03	4.37	4.39	4.53	4.73	4.82	4.94
Number of cases	910	1,147	1,234	1,318	1,305	1,451	1,484	1,473
2 years or more of college:								
Upper bound	3.56	3.61	4.32	4.49	4.72	4.96	5.32	5.64
Median	3.48	3.60	4.16	4.47	4.54	4.94	5.11	5.36
Lower bound	3.37	3.55	4.13	4.30	4.38	4.79	4.94	5.10
Number of cases	554	738	890	1,072	1,084	1,268	1,285	1,299
Bachelor's degree:								
Upper bound	3.34	3.50	3.33	3.73	4.90	5.55	5.93	6.24
Median	3.28	3.39	3.32	3.51	4.72	5.30	5.73	6.06
Lower bound	3.13	3.27	3.31	3.40	4.59	5.27	5.57	5.87
Number of cases	559	814	930	1,067	1,469	1,901	1,940	1,950
Advanced degree:								
Upper bound	3.59	3.73	3.32	3.75	5.58	6.56	7.41	7.39
Median	3.49	3.56	3.29	3.55	4.66	6.09	6.38	6.99
Lower bound	3.02	3.17	3.19	3.26	4.17	5.49	6.19	6.40
Number of cases	59	80	97	109	145	192	205	212

SOURCE: U.S. Department of Education, National Center for Education Statistics. Unpublished tabulations from the National Longitudinal Study of the High School Class of 1972.

catch up to those with no higher education, and the wage increases that come with age and experience after leaving high school or college.

Students who work while attending school generally take part-time jobs paying less per hour than they could earn had they left school and worked full time. After leaving high school or college, wage rates of those with more education catch up to and, after a few years, overtake those with less education. The career patterns of earnings by educational level are similar for young men and women. However, women earn less than men at each age and educational level. Young men and women also differ in the length of time it takes for those with college degrees to catch up to their peers who did not attend college.

For women, the crossover point occurs very soon after college graduation. Those in the 1972 study showed a crossover point in wage rates in 1976 when most of them were 22 years old. In that year, the wage rate of women with no college was $4.27 per hour; with less than 2 years of college, $4.61; with 2 years or more of college or a 2-year degree, $4.54; and with a bachelor's degree or more, $4.72. (See table 1.)

For men, a possible crossover point was in 1979 when most of them were 25 years old. In that year, the median hourly wage rate of men with no college was $7.06 per hour; with less than 2 years of college, $6.94; with 2 years or more of college or a 2-year degree, $6.50; and with a bachelor's degree or more, $6.86.

Men and women who enrolled in higher education programs received higher wage rates when they left school and the greater their educational attainment, the larger their starting wage rate. For men, the starting wage rate of those with no college was $4.71 per hour; with less than 2 years of college, $5.13; with 2 years or more of college or a 2-year degree, $5.56; with a bachelor's degree, $5.96; and with an advanced degree, $6.98. For women, the corresponding wage rates were $3.76, $4.13, $4.54, $5.24, and $6.60, respectively. For both men and women, the financial returns of a college education may repay the actual costs of schooling, as well as the wages lost by not working during the college years. Wage histories from the "National Longitudinal Study of the High School Class of 1972" show that up to age 25, college probably does pay for young women, but it is too early to say the same for young men.

Does College Pay? Wage Rates Before and After Leaving School is available from the Statistical Information Office, National Center for Education Statistics, 400 Maryland Avenue SW, Washington 20202. □

The role of education in lifetime earnings

Lifetime Earnings Estimates for Men and Women in the United States: 1979, the latest in an intermittent series of U.S. Bureau of the Census reports on the subject, presents estimates of expected lifetime earnings based on data collected in the March Current Population Survey (CPS). The report provides a scientific basis for analyzing the expected future earnings of men and women at specific ages and at five educational attainment levels (less than 12 years, 12 years (high school), 1 to 3 years of college, 4 years of college, and 5 years or more of college). The estimates represent the average amounts that individuals with a specified set of characteristics can expect to earn in their working lifetimes. If it is assumed that a person does not begin to work for pay until age 18, the estimates illustrate earnings potential for men and women between ages 18 and 64. For example, a man with a high school diploma can expect to earn $861,000 constant 1981 dollars between ages 18 and 64, while a woman with the same level of education can expect to earn only $381,000.

The current census report differs from previous census publications on expected lifetime earnings in at least two respects: (1) estimates of annual rates of unemployment by age have been incorporated into the procedures, and (2) estimates of expected lifetime earnings for women have been introduced. Past publications have not included estimates for women because they, on average, experience more breaks in employment (for example, for childbirth and child rearing) than do men.

The lifetime earnings estimates have many uses. First, they permit projecting one's lifetime earnings stream, even though future experiences of an individual are unknown. The author, Dan L. Burkhead, explains that future earnings can depend on many decisions in one's life, such as those concerning marriage, career goals, education, job location, and job availability. These estimates reflect the effect of those possible future decisions. The estimates are also essential to court settlements involving wrongful or negligent death as it is not known what the decedent's earnings would have been.

Finally this information is valuable to show the benefits of continued education. For example, a man with a high school education can expect to earn $803,000 between the ages of 25 and 64 and a man with a college degree could earn $1,165,000 between the same ages. While the $365,000 additional income that a college degree could permit one to earn is quite impressive, the estimates show that a man with a postgraduate degree would earn $1,273,000 (only $108,000 additional income).

The estimates also indicate, not surprisingly, that women at all comparable age and educational levels will earn less than their male counterparts. (The author reports that if estimates could be derived for persons working continuously, without the intermittent breaks in employment common among women, the estimates for women would be higher.) Comparing female/male estimates, the report indicates that a woman with a high school education can expect to earn, on average, $330,000 between 25 and 64 (approximately 59 percent less than her male counterpart),

$474,000 with a college degree (also approximately 59 percent less), and $673,000 with a post graduate degree (approximately 47 percent less). The data also indicate that a woman with a post graduate degree is estimated to earn $130,000 less than a male high school graduate (approximately 16 percent less).

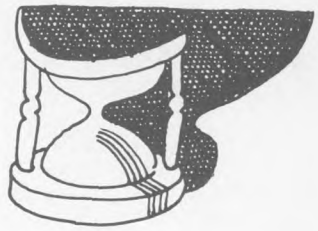
Several important assumptions were necessary to estimate expected lifetime earnings. First, and most important, the lifetime earnings estimates are *average* amounts based on cross-sectional earnings data by age, sex, and educational attainment for the years 1978–80. Use of this data assumes that current relationship are representative of the future: there is no way, however, to validate this assumption. Second, the estimates were based on discount rates and annual productivity rates of zero percent. Any increase in the rate of productivity would result in higher estimates, but no attempt was made to predict future productivity trends. Third, the estimates do not consider values of various fringe benefits received by many employees. Finally, the estimates deal only with one's earnings potential between ages 18 and 64, not one's probability of survival.

Lifetime Earnings Estimates for Men and Women in the United States: 1979 (Current Population Reports, Series P–60, No. 139) is available for $4.50 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. □

A note on communications

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

Major Agreements Expiring Next Month



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

Employer and location	Industry	Labor organization[1]	Number of workers
ACCO Industries, Inc. (Interstate)	Fabricated metal products	Steelworkers	1,000
ACF Industries, Inc., Amcar Division (St. Louis, Mo.)	Transportation equipment	Railway Carmen; Machinists; Electrical Workers (IBEW); Firemen and Oilers; and Boilermakers	1,500
American Can Co. (Naheola, Ala.)	Paper	Paperworkers	1,250
Bell Telephone Co. of Pennsylvania	Communication	Federation of Telephone Workers of Pennsylvania (Ind.)	1,300
Bendix Corp., Electrical Components Division (Sidney, N.Y.)	Electrical products	Machinists	2,350
Boeing Co. (Interstate)	Transportation equipment	Machinists	3,900
Boeing Co., Boeing Vertol Co. Division (Pennsylvania and Delaware)	Transportation equipment	Auto Workers	3,000
Commercial Shearing, Inc. (Interstate)	Fabricated metal products	Steelworkers	1,200
Cyclops Corp., Empire-Detroit Steel Division (Mansfield, Ohio)	Primary metals	Steelworkers	1,200
Dana Corp., Parish Frame Division (Reading, Pa.)	Transportation equipment	Steelworkers	1,800
Dye and Machine Print Cos. (Interstate)[2]	Textiles	Clothing and Textile Workers	4,000
Florida Power and Light Co. (Florida)	Utilities	Electrical Workers (IBEW)	4,900
General Dynamics Corp., Electric Boat Division (Quincy, Mass.)	Transportation equipment	Marine and Shipbuilding Workers	2,500
Greyhound Lines, Inc. (Interstate)	Transit	Amalgamated Transit Union	17,000
Hershey Foods Corp. (Hershey, Pa.)	Food products	Bakery, Confectionery and Tobacco Workers	2,300
Hughes Tool Co. (Houston, Tex.)	Machinery	Steelworkers	3,250
Ingersoll-Rand Co. (New Jersey)	Machinery	Steelworkers	1,800
Jersey Central Power and Light Co. (New Jersey)	Utilities	Electrical Workers (IBEW)	2,150
Kaiser Foundation Hospitals, Permanente Medical Group, Kaiser Foundation Health Plan (San Franscisco, Calif.)	Hospitals	Service Employees	7,850
Koppers Co., Inc., Metal Products Division (Baltimore, Md.)	Machinery	Machinists	1,500
Kroger Co., Erie Marketing Area (Interstate)	Retail trade	Food and Commercial Workers	3,550
Leeds and Northrup Co. (Pennsylvania)	Instruments	Auto Workers	1,200
Libbey-Owens-Ford Co. (Interstate)	Stone, clay, and glass products	Aluminum, Brick and Glass Workers	4,500
Lincoln Telephone and Telegraph Co. (Nebraska)	Communication	Communications Workers	1,600
Lockheed Aircraft Corp., LMSC Division (Interstate)	Transportation equipment	Machinists	6,300
Lockheed Aircraft Corp., Lockheed California Co. Division (Interstate)	Transportation equipment	Machinists	14,000
Lockheed Aircraft Corp., Lockheed Georgia Co. Division (Interstate)	Transportation equipment	Machinists	8,500
McDonnell Douglas Corp., Douglas Aircraft Co. (California)	Transportation equipment	Auto Workers	9,900
McDonnell Douglas Corp. (Interstate)	Transportation equipment	Machinists	5,700
McLouth Steel Corp. (Trenton, Mich.)	Primary metals	Steelworkers	3,400
Mechanical Contractors Association of New Orleans (Louisiana)	Construction	Plumbers	3,000
National Standard Co. (Interstate)	Primary metals	Steelworkers	1,200
Newport News Shipbuilding and Dry Dock Co. (Virginia)	Transportation equipment	Steelworkers	17,000
Northwest Industries, Inc., Lone Star Steel Co. (Texas)	Primary metals	Steelworkers	4,300
Olin Corp. (Pisgah Forest, N.C.)	Paper	Paperworkers	1,850

Continued—Major Agreements Expiring Next Month

Employer and location	Industry	Labor organization[1]	Number of workers
Outboard Marine Corp., Johnson Outboards Division (Waukegan, Ill.)	Machinery	Independent Marine and Machinists Association (Ind.)	2,500
Owens-Illinois, Inc. (Vineland, N.J.)	Stone, clay, and glass products	Flint Glass Workers	1,300
Prudential Insurance Co. of America (Interstate)	Insurance	Insurance Agents	1,200
Schwinn Bicycle Co. (Chicago, Ill.)	Transportation equipment	Auto Workers	1,500
Timex Corp. (Connecticut)	Instruments	Waterbury Watch Workers	1,200
Titanium Metals Corp. of America (Nevada)	Primary Metals	Steelworkers	1,050
Titanium Metals Corp. of America, Standard Steel Division (Pennsylvania)	Primary Metals	Steelworkers	1,500
White Consolidated Industries, Inc., Franklin Manufacturing Co. Division (St. Cloud, Minn.)	Electrical products	Machinists	1,200

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

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

Job loss of long-service workers

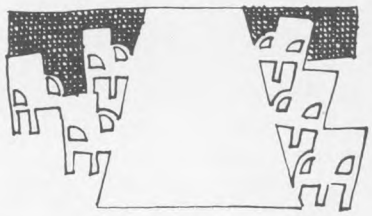
The loss of a job after the accumulation of some substantial seniority is likely to be psychologically unsettling and to produce economic hardship under any circumstances. When such an involuntary separation from a long-service job occurs during a man's fifties or sixties it can be calamitous. Although such displacements are not common, they happen often enough to constitute a social problem. Among men who were 55 to 69 years of age in 1976, 1 of 14 had lived through such an experience during the preceding decade. This represents over half a million persons.

This disruption of work career happens indiscriminately to men in all occupational categories and irrespective of educational background. Such displacement is much more likely in the private than in the public sector and is also considerably more common in some major industry divisions, notably trade and manufacturing. Even very long seniority does not provide immunity from such displacement. The overall displacement rate is 7.4 percent, while the rate is as high as 5.9 percent, controlling for other factors, among men with 20 years or more of service.

The incidence of displacement is uneven from other points of view. It is much higher among nonmarried than among married men, and men whose jobs had manifested some lack of stability even before 1966 were more likely to suffer an involuntary separation sometime over the next decade. Displacement was considerably less likely from establishments with pension plans than from those without them. Nevertheless, there is no evidence that the 1966 average hourly earnings of the men who were ultimately displaced differed systematically from those of men who were not. Despite the objective evidence of some qualitative difference in the security and amenities of their 1966 jobs, the men who were later displaced were just as likely as their more fortunate counterparts to have reported that their 1966 jobs were the longest and best of their careers.

—HERBERT S. PARNES, ed.
Work and Retirement: A Longitudinal Study of Men (Cambridge, Mass., The MIT Press, 1981), pp. 82–83.

Developments in Industrial Relations



Supreme Court bans sex bias in pensions

The Supreme Court ruled that employer-sponsored retirement plans may no longer pay women smaller benefits than men, despite actuarial studies indicating that women generally live longer than men. The ruling was primarily applicable to "defined contribution" pension plans, in which employers or employees or both make set payments into the plan. Men and women generally pay the same amount into the plan, but the resulting benefits are usually lower for women. According to the Employee Benefit Research Institute, there are 450,000 such pension and profit-sharing plans, with 25 million members. The American Council of Life Insurance put the number of members at 16.5 million, including 5 million women. The Council also estimated that 1 to 3 million of the women are covered by plans that provide smaller benefits for women.

Less likely to be affected by the ruling are "defined benefits" plans which pay set benefits at periodic intervals. The benefits are generally equal for men and women.

The court case, *Arizona v. Norris*, began in 1975, when Nathalie Norris joined an annuity plan offered by her employer, the State of Arizona, through a commercial insurance company. Her monthly contribution was $199, the same as for a male employee, but her monthly benefit beginning at age 65 was scheduled to be $320.11, $33.96 less than for a male employee. Norris challenged the inequality under Title VII of the Civil Rights Act of 1964, which prohibits sex, race, and ethnic discrimination in employment. In support of her position, she cited a 1978 Supreme Court ruling in *Los Angeles Department of Water and Power v. Manhart*, in which the court barred the city agency from requiring female employees to make larger contributions to receive the same monthly benefits as men.

The ruling in the Norris case was delivered in a separate unsigned order summing up conflicting opinions of two groups of justices. Justices Thurgood Marshall, William Brennan, Byron White, and John Stevens held that paying unequal benefits is illegal sex discrimination. Writing for the group, Justice Marshall said, "Actuarial tables could unquestionably identify differences in life expectancy based on race or national origin, as well as sex."

However, he continued, "even a true generalization about a class cannot justify class-based treatment. An individual woman may not be paid lower monthly benefits simply because women as a class live longer."

Justice Lewis Powell, Chief Justice Warren Burger, and Justices Harry Blackmun and William Rehnquist contended that the discrimination act was not intended to cover either the insurance industry or actuarial tables. Justice Powell wrote, "Sex-based mortality tables reflect objective actuarial experience. Because their use does not entail discrimination in any normal understanding of that term, a court should hestitate to invalidate this long-approved practice on the basis of its own policy judgment." The group also contended that in no event should a remedy be applied retroactively.

Justice Sandra Day O'Connor concurred with the first group only on the illegality of the Arizona plan and concurred with the second group only on the retroactivity aspect. Thus, the court arrived at its finding that the Arizona plan was illegal, but the remedy would be limited to pension contributions accrued after July 31, 1983.

The court did not say that for plans in which women's benefits were less than men's, the women's must be raised to the men's level. Instead, it simply said that unequal benefits must be equalized, which could be accomplished by either raising women's benefits or lowering men's benefits, or a combination of the two approaches.

GM's plan to combat absenteeism successful

A General Motors Corp.-United Auto Workers plan to reduce unwarranted job absenteeism showed positive results; only 3 percent of the workers represented by the union failed to meet the minimum attendance requirement and were penalized. The overall effort to control unnecessary absences consisted of two parts. The first, counseling of offenders, was the major innovation of a six-member joint committee established under the parties' 1979 collective bargaining agreement and continued under their March 1982 agreement. Under this aspect of the plan, employees who had been absent more than 20 percent of their scheduled work time during the first 6 months of the 1982 agreement

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

were offered counseling to aid them in improving their attendance. These workers, and all others represented by the Auto Workers, were warned that they faced a temporary reduction in benefits (the second part of the plan) if they exceeded the 20-percent rate during the second 6 months of the agreement. Both the counseling and the reduction in benefits were to be applied in the same manner during the balance of the 1982 contract, which expires in September 1984.

GM said that the aid by teams of union and management representatives and by professional counselors was so successful that 75 percent of the workers who qualified for the initial round of counseling avoided benefit reductions, while 10,000 workers exceeded the 20-percent rate during the second 6 months of the agreement. According to the company, the counseling approach was a major factor leading to a decline in "controllable absences" from 11.3 percent in 1981 to 10.3 percent in 1982, and 8.8 percent in the first quarter of 1983.

The company and union indicated that virtually all absences were used in computing the individual rates. Not included in the calculations were absences for "major illnesses or injuries such as heart attacks, strokes, major surgery, etc."

The reduction in benefits for the 10,000 workers was to last for 6 months, beginning in April 1983. The cut in paid holidays, vacation pay, paid absence allowance, bereavement pay, jury duty pay, sickness and accident benefits, and Supplemental Unemployment Benefits, was to equal the individual worker's absence rate. Possible payouts under the company's profit-sharing plan, scheduled to begin in April 1984 (based on 1983 operating results), also would be reduced, but any lost amounts will be distributed to all eligible employees in future years.

Don Davis, an official of the union's General Motors Department, and a member of the committee, said that the plan had been well received by employees, even those who were penalized, because they had been given adequate warning of the consequences of unwarranted time off.

General Motors is the only domestic automobile manufacturer with such an attendance plan, although Chrysler Corp.'s latest settlement with the Auto Workers calls for countering unnecessary absences through tighter disciplinary procedures. (See *Monthly Labor Review*, February 1983, pp. 46–47, for the Chrysler accord, and May 1982, pp. 59–60, for the General Motors accord.)

California school district files for bankruptcy

The first bankruptcy of a public school system in California occurred when the San Jose Unified School District was unable to persuade its 1,400 teachers to give up a 6.1-percent salary increase due in September 1983. Earlier, the school district had refused to put into effect a 6-percent salary increase that had been scheduled for September 1982 under a 3-year agreement negotiated with the San Jose Teachers Association in 1981.

The bankruptcy filing, which also affected the pay of 1,400 other school employees, was under Chapter 9 of the Federal Bankruptcy Code which protects a State or municipality against creditors while it restructures its debt. At the time of filing, the San Jose school district had $3.5 million in debts and faced an additional $12 million deficit for the 1983–84 school year.

Keith McWilliams, the school system's bankruptcy attorney, attributed much of the financial difficulties to Proposition 13, the 1978 California initiative that cut some property taxes and imposed limits on future increases. (In California and most other states, virtually all funds for schools are obtained from property taxes.)

Ford parts workers accept once-rejected contract

Faced with a threatened cut in production and employment, employees of Ford Electronics and Refrigeration Corp. in Connersville, Ind., voted to accept essentially the same settlement terms they had rejected 10 days earlier. The new contract negotiated by Local 919 of the International Union of Electrical Workers was effective immediately, supplanting the balance of an agreement that had been scheduled to expire in March 1984. Company officials threatened to cut production by a reported 25 percent because they wanted to preclude interruptions in the production of automobile radiators and air conditioning parts at the plant. In 1978, a strike at the plant caused production difficulties at the parent Ford Motor Co.

The new contract provided for 20, 50, and 50 cents an hour wage increases on July 1 of 1983, 1984, and 1985. In a cost reduction move, new production line workers will start at 80 percent of the standard job rate, progress to 90 percent of the rate after 6 months of service, and to the full rate after another 6 months. Previously, new employees attained the standard rate after 90 days of service.

All 1,700 employees will continue to receive automatic quarterly cost-of-living pay adjustments calculated at 1 cent an hour for each 0.4-point movement in the BLS-Consumer Price Index for Urban Wage Earners and Clerical Workers (1967 = 100). There also is a provision for reopening bargaining on wages and benefits in the fourth year.

Benefit changes included a three-step $4 increase in the pension rate to $17.50 a month for each year of credited service and a $50 increase, to $80, in maximum dental insurance coverage.

Arbitrator to decide steel's benefit-cut issue

A disagreement arose over the application of the temporary wage cut in the March settlement between the United Steelworkers and the Coordinating Committee Steel Companies. (See *Monthly Labor Review*, May 1983, pp. 47–48, for terms of the March settlement.) According to the companies, the $1.25 pay cut should also affect pension,

insurance, and other benefits that vary according to pay level.

This was disputed by the union. Vice President Joseph Odorcich, who represented the union during the negotiations that resulted in the March settlement, charged the steel companies with "trying to reduce benefits that were not the subject of the negotiations. . . . " Odorcich was displeased that the matter would be resolved through arbitration because of the delay involved.

Selected to decide the issue was Benjamin Aaron, professor of law at the University of California at Los Angeles. The case was only the second in the history of the industry involving a number of companies. The first was in 1969, when a ruling resulted in extension of incentive pay to thousands of workers.

Elsewhere in the steel industry, other companies negotiated labor contracts patterned after the March accord. In Coatesville, Pa., Lukens, Inc., and the Steelworkers negotiated a contract that called for a reported $1.80 an hour cut in wages and benefits, compared with a reported $2.25–$2.30 at the seven larger companies because, "Lukens is in better financial shape than most of the industry," according to a local union official.

In Zanesville, Ohio, Armco, Inc., negotiated a contract with the Steelworkers that called for a smaller wage cut (35 cents) than the seven companies but a larger reduction in benefits, resulting in an overall cut in compensation similar to the other companies. About 320 workers were affected. Earlier, Armco negotiated a concessionary contract for 4,500 employees at its Middletown, Ohio, plant. The workers are represented by the Armco Employees Independent Federation.

Airlines win wage concessions

The Hyatt Corp. made some progress in its efforts to resurrect bankrupt Braniff International, but faced a suit filed by the Machinists union to block implementation of a concessionary labor contract negotiated by one of its local representatives. Four other unions approved concessionary accords—the Air Line Pilots; the Association of Flight Attendants; the Dispatchers; and the Teamsters. According to Braniff, the agreements provided for "significant increases in productivity, wage concessions and the cross-utilization of employees within various classifications." Reportedly, the largest pay cut was about 60 percent for the pilots, bringing their pay to $43 an hour or $3,500 a month. Under Hyatt's plan, Braniff would resume flying 30 planes by October 15, 1983, rehiring 2,000 of the 10,000 employees affected by its April 1982 shutdown.

Frontier Airlines won a 1-year wage reduction from its 575 pilots. Frontier recorded a $10.2 million loss in the first quarter of 1983, following a loss in the last quarter of 1982 that was the first in several years. The 2-year contract permits the airline to increase flying hours to 80 a month, from 75. This change, plus the pay reduction, was expected to save Frontier $5 million. At the time of the settlement, senior captains earned up to $8,640 a month flying Douglas DC-9's and up to $7,874 flying Boeing 737's.

American Airlines' plan to buy additional airplanes and expand operations received a boost when the Professional Flight Attendants union accepted a contract that made some concessions on pay rates for new employees. American stressed that implementation of its plan was contingent on obtaining concessions from members of the Air Line Pilots Association. American was pressing the Pilots Association for an early renewal of their agreement, which was scheduled to expire in April 1984. Ralph Harkenrider, executive administrator of the union, said, "We see the need for some concessions but we aren't going to give away the store." The settlement for the flight attendants provides that new employees be paid about 30 percent less than current pay scales. American also will be permitted to create some part-time positions, to be filled by current full-time employees. All 6,500 current employees will receive pay increases totaling nearly 15 percent over the 3-year agreement term.

Western Airlines changed leadership and pledged a more cooperative attitude towards the unions representing its employees. This led the Teamsters and the Air Line Pilots to offer assurances that they would cooperate in the airline's efforts to negotiate temporary labor cost cuts.

In a legal matter involving Western Airlines, a Federal appeals court upheld a district court ruling that the company had violated the Age Discrimination in Employment Act by imposing a mandatory retirement age of 60 on flight engineers and by refusing to permit DC-10 pilots nearing the Federal Aviation Administration's required retirement age of 60 for pilots to "down bid" on flight engineer jobs.

The case originated in 1977, when two pilots and a flight engineer contested Western's inauguration of a rule requiring that all three crew members—the captain, copilot, and flight engineer—of a DC-10 must retire at age 60.

In its arguments before the courts, Western contended that a captain's bid for a lower position in the flight crew was not protected by the Age Discrimination in Employment Act. Western also contended that the age 60 policy was a legitimate job qualification, justified by considerations other than age.

In its ruling, the court noted that there have been no accidents resulting from disability of any of the more than 200 flight engineers over age 60 who are still flying.

Glass Workers end 9-year strike

A strike lasting nearly 9 years against the Bartlett-Collins Co. in Sapulpa, Okla., ended in mid-June when the 75 workers accepted a 30-month contract. American Flint Glass Workers President George Parker termed the settlement a victory "in a long historic labor battle for dignity."

The American Flint Glass Workers had won a representation election at the plant in the 1940's, but was not able to reach an agreement. The same thing happened to the

Glass and Ceramic Workers in the 1960's. The American Flint Glass Workers won another representation election in 1974, but again was unable to reach agreement, leading to the long strike.

The agreement provided for wage increases, three paid holidays (the first in the plant's history), improvements in health benefits, a dues checkoff, and specified overtime hours and pay rates.

More copper settlements

Negotiations in the copper mining, smelting, and refining industry moved toward a close as a coalition of unions led by the Steelworkers settled with four companies along the lines of the Kennecott Corp. agreement, which froze wages for 3 years, except for continuation of possible automatic quarterly cost-of-living adjustments. (See *Monthly Labor Review*, June 1983, p. 45.) The four companies are Magma Copper Co.; Inspiration Consolidated Copper Co.; American Smelting and Refining Co.; and U.S. Metals Refining Co. Most of the facilities are located in Arizona, Utah, New Mexico, and Texas, except for the U.S. Metals plant, which is in Carteret, N.J.

The one bargaining situation that continued the industry's history of frequent work stoppages at agreement terminations was at Phelps Dodge Corp., where a strike began at the end of June. The company contended that it could not afford the cost of following the pattern because it was forced to stand or fall on its own performance, unlike some of the other companies which can sustain losses because they are part of larger firms.

Phelps Dodge's demands included cuts in pay for new workers, a pay freeze for those already on the payroll, elimination of the automatic cost-of-living pay adjustment formula, elimination of 1 of 9 paid holidays, elimination of the fifth week of paid vacation for 25-year employees, and adoption of larger deductibles under the medical insurance plans.

Southern paperworkers get new contract

More than 6,000 employees of International Paper Co. mills in four southern States were covered by contracts negotiated by the United Paperworkers and the International Brotherhood of Electrical Workers unions. The 3-year contracts provided for 6, 6, and 5 percent pay increases on June 1 of 1983, 1984, and 1985, which average 68, 72, and 64 cents an hour. Other wage terms included elimination of the automatic cost-of-living pay adjustment formula, which had resulted in a 43-cent increase during the 3-year term of the contracts which expired on May 31, 1983.

The major benefit change was a revision of the pension plan to provide for benefits calculated at $16 to $27 a month for each year of credited service. Previously, benefit amounts were calculated as a percentage of annual earnings. Other benefit changes included a fifth paid personal holiday, a $30 annual payment for safety shoes, and a $50 increase (to $150) in the annual deductible under the major medical plan.

The mills are located in Mobile, Ala., Moss Point and Natchez, Miss.; Camden and Pine Bluff, Ark.; and Bastrop, La.

Farm-construction equipment accords

The Auto Workers union concluded its round of bargaining with the major farm and construction equipment companies by settling with J. I. Case Co. for 4,200 active and 2,100 laid-off workers. Some of the terms were similar to those in the Caterpillar Tractor Co. agreement (*Monthly Labor Review*, July 1983, p. 42) and the Deere and Co. agreement (*Monthly Labor Review*, August 1983, p. 36).

The 44-month contract provided for a single guaranteed wage increase of 3 percent, effective July 7, but the workers' pay will continue to be subject to automatic quarterly cost-of-living pay adjustments calculated at the existing rate of 1 cent an hour for each 0.26-point change in the BLS-Consumer Price Index for Urban Wage Earners and Clerical Workers (1967 = 100).

Another wage provision was establishment of a Guaranteed Sharing Benefits Plan assuring workers of three annual lump-sum payments beginning in 1985 that the union said will total $1,600 for a typical worker. All employees on the active payroll on June 27, 1983, also received a $100 "settlement bonus."

In a change beneficial to Case, the Attendance Bonus Program was modified so that employees can now accrue only 40 percent of the paid time off that was possible under the previous agreement. Under that agreement, those who worked all scheduled hours in a week earned attendance bonus hours ranging from 1.5 for those with 1 but less than 10 years of service to 3 for those with at least 20 years of service. Those with perfect attendance for 5 consecutive weeks earned additional paid time off, bringing the combined maximum for a 5-week period to a range of 11.25 hours for those with 1 but less than 10 years of service to 22.5 hours for those with at least 20 years of service.

New protections for employees' jobs and income included advance notice and union input when major outsourcing (subcontracting) is contemplated; advance notice and discussion with the union prior to any company decision on partial or complete plant shutdown; establishment of a "Plant Preferential Seniority Placement List"; formation of a national joint committee on retraining and placement; special early retirement benefits, guaranteed supplemental unemployment benefits, and extended health insurance coverage for workers affected by partial or complete plant shutdowns; and establishment of a rebate program aimed at increasing sales of products made by UAW members.

The new contract covers operations in Racine, Wis.; Terre Haute, Ind.; Rock Island, Ill.; and Burlington and Bettendorf, Iowa.

Eastman delays merit pay increases

Eastman Kodak Co. announced a 6-month delay in merit pay increases for virtually all of its employees. The only employees who will receive increases on schedule in December—if warranted by their performance—are 3,500 hourly and weekly paid salaried employees in the lowest grades. At the end of 1982, the photographic products manufacturer had 93,300 employees in the United States. Since then, it has laid off 2,700 and shed several thousand through voluntary retirement and separation incentives.

Problems continue in meat processing industry

The meat processing industry continues to be plagued by plant closings, threats of closings, and wage-and-benefit reductions.

Wilson Food Corp. filed for bankruptcy, then unilaterally cut the wages and benefits of its employees represented by the United Food and Commercial Workers by 40 to 55 percent. The union responded by filing charges with the National Labor Relations Board, contending that Wilson had engaged in unfair labor practices. The union also filed charges with the bankruptcy court, contending that Wilson's action on wages and benefits was an improper use of the Federal bankruptcy code. During this period, the parties began to negotiate on the wage and benefit levels, but the talks became deadlocked, and the union struck seven facilities. The strike ended after 22 days, when the parties agreed on a contract that restored some of the cuts.

The new contract prohibits the company from closing any plants for 12 months. The base hourly pay rate for most employees was set at about $8, compared with $10.69 before Wilson's unilateral June 25 cut and $6.50 afterwards. Workers hired after June 25, who had been receiving $5 an hour, were raised to $6.50, with the opportunity to progress to the $8 rate over an 18-month period. The contract, which expires in September 1985, also provided for a continuation of the freeze on automatic cost-of-living pay adjustments; elimination of the fifth and sixth weeks of paid vacation for long-service workers; a reduction in the pension rate to $10 a month for each year of credited service, from $15; elimination of two annual paid holidays; and establishment of a $200 deductible on hospital insurance. (See the *Monthly Labor Review*, February 1982, p. 48, for terms of the December 1981 contract in which the union had agreed to a freeze on wages and reductions in benefits to aid Wilson and other "old-line" companies that generally signed the "Master Agreement" for the industry.)

Greyhound Corp. announced plans to close 13 facilities of its Armour Food Co. subsidiary in December because of "noncompetitive" labor costs. However, ConAgra Inc. agreed to purchase the operations, contingent on negotiating compensation concessions from Armour's 2,000 employees represented by the Food and Commercial Workers. ConAgra official Warren McCoy said, "The retention of the present Armour Food Co. labor force will depend on the negotiation of satisfactory terms and conditions of employment at each of the plants." ConAgra is a diversified basic food company with operations in agricultural chemicals, feed and fertilizer, retailing, grain processing and merchandising, frozen foods, poultry, and seafood. In giving the union the required 6-month notice of the plant closings, Greyhound Chairman John W. Teets explained that Armour was unable to compete effectively against "300 to 400 other packers who are not under the master agreement." He said that Armour paid $18 an hour in wages and benefits, compared with less than $9 paid by some other packers.

IBP cut the pay of its production workers by $1.05 an hour, to about $8.30. The cut applies to 600 nonunion beef workers in Luverne, Minn.; Emporia, Kans.; Dennison, Iowa; and West Point, Nebr. A company official said IBP determined that the cut was necessary because "our competitiveness [with other firms] has severely eroded over the past 18 months."

The many plant shutdowns and intensified competition in beef processing are generally attributed to the entry of Iowa Beef Processors (renamed IBP) into the industry in 1960. From the beginning, the company emphasized new technology and methods and located its plants throughout the cattle-producing regions, in contrast with the older firms which used traditional methods and were concentrated in Chicago and Kansas City. The company also strongly resisted the United Food and Commercial Workers' efforts to organize its employees. In instances where the union was successful (at 4 of 13 locations) IBP showed a willingness to bear strikes if necessary to maintain lower labor costs than did the older companies. As a result, IBP became a leading beef processor, along with Excel (a unit of Cargill Inc.) which also has prospered by using IBP's approaches.

Employee compensation was expected to be a major issue in negotiations between Excel and the United Food and Commercial Workers prior to the planned reopening of the company's Schuyler, Nebr., beef-packing plant. Company Vice President Orlan Thorbeck promised to seek "a competitive agreement . . . in terms of wages, benefits—everything." The plant is expected to open with the same employment level—980 people—as when it was closed in December 1982.

Workers at Monfort of Colorado, Inc., cast 396 votes for "no union" and 301 in favor of the United Food and Commercial Workers, which had represented the workers prior to the plant's shutdown in March 1980 after a lengthy contract dispute. The facility, located in Greeley, has operated on a nonunion basis since its reopening in March 1982. The National Labor Relations Board will hear arguments in September on a union contention that 185 workers employed in the plant prior to the plant shutdown should have been offered jobs when it was reopened. The 185 people were allowed to vote in the 1983 election but only 94 participated.

Utility seeks rate cut to spur development

Philadelphia Electric Co. asked the Pennsylvania Public Utility Commission for permission to lower the electricity rates of companies that increase employment or make capital improvements. The request amended an earlier rate reduction request, by eliminating the portion of the rate cut that was calculated on consumption, but placed more emphasis on increased employment and investment. To qualify for the reduction, employers would have to add at least six employees or invest at least $90,000 in new plants or equipment. Philadelphia Electric said that the proposed plan would not result in rate increases for other customers.

IUE revises its name

In a move to "fit the times," the International Union of Electrical, Radio and Machine Workers, AFL–CIO, CLC, changed its name to the International Union of Electronic, Electrical, Technical, Salaried and Machine Workers, AFL–CIO. Union President William H. Bywater said, "This gives IUE a name appropriate to its present makeup, its mission and its future. IUE has strong roots in each of the five segments of industry identified in the new name. We intend to organize in all of those areas, including high tech, professional and salaried workers."

The word "Radio" was dropped from the title because "no IUEer"—or any American worker—produces home radio receivers for the consumer market; "CLC" was dropped because the IUE is no longer directly affiliated with the Canadian Labour Congress.

Grain Millers elect new president

Delegates to the Grain Millers biennial convention elected Robert Willis as the union's new president and Larry R. Jackson as the new secretary-treasurer. Willis had been the union's executive vice president, and Jackson had been a vice president.

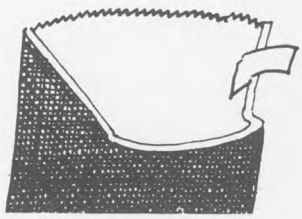
The new officers succeeded President Frank T. Hoese and secretary-treasurer Joseph T. Smisek who retired after one term of office following long careers in other leadership jobs in the union.

Buoy retires as head of Boilermakers

Harold J. Buoy retired as president of the Boilermakers, fulfilling a promise he made more than 10 years earlier, following a heart attack, to retire at age 62. Charles W. Jones was selected by the union's executive council to complete Buoy's term of office, which ends in August 1984.

During his career, Buoy held a number of posts, culminating in appointment as president in 1970, followed by election to succeeding terms. Jones joined the union in 1942, was selected as a district representative in 1947, and became a vice president in 1960. □

Book Reviews



A beginning

Industrial Relations and Health Services. Edited by Amarjit Singh Sethi and Stuart J. Dimmock. New York, St. Martin's Press, 1982. 370 pp. $35.

The papers assembled in this volume achieve the limited goal set by the editors: identifying and examining some of the major elements of the landscape of industrial relations in the health services industry in Canada, the United States, and Great Britain. Relying on contributions by nearly two dozen professionals and academicians to supplement their own papers, the editors relate the development of health services industrial relations from the end of World War II through the early 1980's. Referring to John Dunlop's concept that industrial relations is one of several systems in the wider system of society, the editors trace the development of the health services industrial relations system on several parallels in each of the three countries. The treatment of the system in Canada, however, often unravels into a province-by-province examination so that the three countries at times seem to have quadrupled. While very thorough, the editors might have served the reader better through selected examination of provincial variations. The editors' reliance upon separate papers on similar aspects of the same subject also becomes tedious, as each contributor presents a full treatment of his or her topic. This results in repetition of general history, organizational development, and political aspects.

The editors acknowledge that the reader may feel a lack of analysis, application, and verification of theories, of insight, and of direction. But they note that there is very little literature on this aspect of industrial relations and that one has to start somewhere. Their hope is that this work will serve as a foundation for the evolution of more theory and analysis through future works in this field. While the editors succeed in their modest goal, they might well have been more ambitious in designing their work and in considering the contributions. The sheer speed of events in this field, recognized by the editors, calls into question the limited purpose of this work.

Although not identified as major issues in the text, significant forces receive continuing attention. The relative imbalance of power between employees and employers, for example, is seen to have shaped the development of bargaining and benefits in the health services industry. Wages in this industry have risen more slowly than have wages for similar work in other industries in all three countries. An outstanding exception, however, is illustrated in the pay of physicians, the least organized (that is, unionized), but most powerful group of health care "workers." Various contributors to the book discuss the physicians' success not only in maintaining high levels of income but in exerting substantial influence on the management and structure of their health care systems and institutions.

The structure of the organizations representing the labor force in the health services industry also receives consideration from several authors. First, they recognize uncertainty in some of the labor organizations as to whether they will emphasize, for example, the dignity of the profession or the dollars in the paychecks. This uncertainty of purpose is seen as inhibiting the growth and success of many labor organizations, but in differing ways and extents in the three countries. Second, the writers depict inherent organizational development problems in the unions. Issues such as centralized or decentralized policymaking and membership service, exclusivity of membership, competition with other unions, and availability of technical competence of union staff are pointed out as needing improvement.

The growth of public financial support of health services in each country is also shown to have exerted decisive influences on the shape and direction of the industrial relations structures. This factor, the papers suggest, likely will become more significant in the future as health care becomes more advanced and more costly. This will raise considerations of different mixes of the work force within the elasticity of the health services labor supply. In turn, this may require management and labor to join together in securing funding and in maintaining viability of their facility.

The editors note that these and other issues generally are referred to as "problems" in all three countries. The editors trace such nomenclature to the roots of adversarial labor relations systems common to industrial societies. These factors, at once the basis of and the challenge to the system

as seen through the collected papers, foreshadow what underlying potential the work may yield: analysis of the system's future course. The editors arduously avoid such analysis, however, leaving the task to the reader and to future authors. Yet, the book's historical tracking of the political, organizational, and economic influences does afford some tools with which to consider the current juncture. The comparisons among the three countries allow the reader to review evolved actions and consequences in a particular subtopic from one country to another. The latter portions of the work suggest that the outcome could be guided, if not determined, by conscious choices of the industrial relations practitioners, governmental bodies, economic policymakers, and other leaders in the industrial relations system and in the wider societal system. Some contributors briefly suggest that new forms of labor-management adjustment might better serve this industrial relations system. One such approach, cooperative labor-management, is credited with the potential to preserve the give-and-take of collective bargaining while promoting more constructive and productive relationships. Consideration of alternatives for the problems identified in the health services industrial relations system is brief, however, and comes only as an inadvertent postscript in the editors' scheme.

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Management by objectives

The Productivity Prescription: The Manager's Guide to Improving Productivity and Profits. By David Bain. New York, McGraw-Hill Book Co., 1982. 308 pp. $19.95.

The jacket proclaims that this book is "just what the doctor ordered" for the manager eager to improve his firm's "production, service, quality, and profit." The doctor is obviously a house doctor. An independent colleague asked to render a second opinion could not unreservedly endorse the proffered "prescription." While conceding potential benefits to the manager, he would also want to warn against some doubtful ingredients that threaten harmful side effects.

The book supports many notions that productivity scholars generally have no opportunity to propagate broadly under the aegis of a prestigious commercial publisher. For example, the book soundly insists on the importance of performance measurement for any systematic program to improve individual and organizational accomplishment. It also recognizes that a mental construct such as productivity has attributes that may elude adequate reflection in a single numerical ratio. It emphasizes that, even without significant new capital investment or technological advance, substantial gains in performance are achievable through the enlistment and proper reward of employee cooperation. It forthrightly assigns to management the responsibility for modification of employee attitudes and behavior in behalf of greater quantity and quality of output and lower unit production cost. Brief chapter summaries tend to neutralize the turgidity of the text and may encourage careful selective rereading. Also included are informative "case histories" (part 6) in which the author apparently played a decisive role.

A reviewer already immersed in the mainstream of professional thought and practice concerning productivity would also find, and could not conscientiously ignore, some misleading statements and other limitations. The guidance given for measurement is sketchy, the bibliography (pp. 299–300) is meager and unrepresentative, and the description of the Bureau of Labor Statistics' procedures of productivity measurement (pp. 53, 55) gives no idea of the true scope of the program. More troubling is the book's penchant for fuzzy or incorrect definition. Note, for example, the pseudomathematical statement that "quality" is "what is wanted + when it is needed," or "accuracy + timeliness." If quality is so described, then it merely involves attributes that should be routinely and directly taken into account in the measurement of the output numerator of the productivity ratio.

The book's confusion concerning the meaning of productivity itself is more serious. The first section of the opening chapter is headed "Productivity—What It Is and What It Is Not," but it seems to prefer a definition of what productivity surely is *not*. That section starts with a ratio of "output" to "input," restates this ratio as "results achieved/resources consumed," and leaps to an absurd formulation that is supposedly equivalent and good enough to repeat later in the book (for example, on p. 51): "effectiveness/efficiency."

This flaw in the treatment of productivity is not the only one. The discussion fails to specify that both output and input should preferably be measured in "real" terms—as "quantities" expressed in natural units or as aggregates with stabilized price or other weights. The author incorrectly implies that economists favor confinement of attention to labor productivity as a matter of definition (p. 4) rather than for other reasons. Nowhere does the author note the challenge of defining and measuring the input of capital services. Indeed, he mislabels combinations of labor and materials as indicators of "total input" (pp. 70–74); and he mistakenly says that a financial "rate of return on total assets" corresponds to an organization's "total factor productivity" (p. 56). Another error is to regard measures of unit labor cost (p. 57) and unit production cost (p. 5) as more precise indicators of productivity rather than as distinct measures in their own right. That the author does not conform to his own definitions in citing examples of company "productivity indicators" (chapter 11), is not surprising.

Two concluding remarks are in order. First, the author's success in helping firms improve productivity testifies to the essentiality of managerial commitment rather than to the clarity and accuracy of the concepts and measures that he utilized—or that he cites in the book. The experience of consultants at company and plant levels confirms that crude, even incorrect, and vaguely relevant statistical tools can assist, and need not frustrate, determined drives to upgrade productivity. Second, the author's references to work measurement (to comparisons of "should-take" and "did-take" times for performing certain tasks) ought to remind productivity scholars of a need to harmonize this common intracompany practice with their own practice of end-product measurement at and above the four-digit industry level. In principle, at least, end products can be described as combinations of "subproducts" of the kind treated in work measurement. Progress made in this direction could lead to (1) better productivity measures for nonmanufacturing industries and (2) better comparisons of plant and company performance against industry averages.

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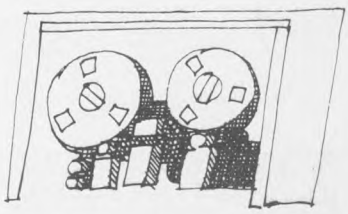
Siedule, Tom and Norman Leckie, *Occupational Demand: Estimation and Projection*. Ottawa, Ontario, Economic Council of Canada, 1983, 137 pp. (Discussion Paper, 229.)

Simpson, Wayne, *An Economic Analysis of Industrial Training in Canada*. Ottawa, Ontario, Economic Council of Canada, 1983, 79 pp. (Discussion Paper, 224.) □

Current Labor Statistics



NOTES ON CURRENT LABOR STATISTICS

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

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

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

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

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

Annual revision of the seasonally adjusted payroll data shown in tables 11, 13, and 15 were made in August 1981 using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in tables 29 and 30 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month to month and from quarter to quarter are published for numerous Consumer and Producer Price Index series. However, seasonally adjusted indexes are not published for the U.S. average All Items CPI. Only seasonally adjusted percent changes are available for this series.

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

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

Symbols

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

Schedule of release dates for BLS statistical series

Series	September releases	Period covered	October releases	Period covered	November releases	Period covered	MLR table number
Employment situation	September 2	August	October 7	September	November 4	October	1–11
Producer Price Index	September 9	August	October 14	September	November 10	October	23–27
Consumer Price Index	September 23	August	October 25	September	November 23	October	19–22
Real earnings	September 23	August	October 25	September	November 23	October	12–16
Productivity and costs:							
Nonfarm business and manufacturing	.....	.....	October 27	3rd quarter	.....	.....	28–31
Nonfinancial corporations	.....	.....	.....	.....	November 30	3rd quarter	28–31
Major collective bargaining settlements	.....	.....	October 28	1st 9 months	.....	.....	35–36
Employment Cost Index	.....	.....	.....	.....	November 3	3rd quarter	32–34
U.S. Import and Export Price Indexes	.....	.....	.....	.....	November 9	3rd quarter	.....

EMPLOYMENT DATA FROM THE HOUSEHOLD SURVEY

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

Definitions

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

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

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

Notes on the data

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

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

1. Employment status of the noninstitutional population, 16 years and over, selected years, 1950–82

[Numbers in thousands]

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

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

[Numbers in thousands]

Employment status and sex	Annual average		1982						1983						
	1981	1982	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
Total															
Noninstitutional population[1,2]	171,775	173,939	174,038	174,200	174,360	174,549	174,718	174,864	175,021	175,169	175,320	175,465	175,622	175,793	175,970
Labor force[2]	110,315	111,872	112,090	112,303	112,528	112,420	112,702	112,794	112,215	112,217	112,148	112,457	112,418	113,600	113,539
Participation rate[3]	64.2	64.3	64.4	64.5	64.5	64.4	64.5	64.5	64.1	64.1	64.0	64.1	64.0	64.6	64.5
Total employed[2]	102,042	101,194	101,262	101,372	101,213	100,844	100,796	100,758	100,770	100,727	100,767	101,129	101,226	102,454	102,949
Employment-population[4]	59.4	58.2	58.2	58.2	58.0	57.8	57.7	57.6	57.6	57.5	57.5	57.6	57.6	58.3	58.5
Resident Armed Forces[1]	1,645	1,668	1,674	1,689	1,670	1,668	1,660	1,665	1,667	1,664	1,664	1,671	1,669	1,668	1,664
Civilian employed	100,397	99,526	99,588	99,683	99,543	99,176	99,136	99,093	99,103	99,063	99,103	99,458	99,557	100,786	101,285
Agriculture	3,368	3,401	3,445	3,429	3,363	3,413	3,466	3,411	3,412	3,393	3,375	3,371	3,367	3,522	3,527
Nonagricultural industries	97,030	96,125	96,143	96,254	96,180	95,763	95,670	95,682	95,691	95,670	95,729	96,088	96,190	97,264	97,758
Unemployed	8,273	10,678	10,828	10,931	11,315	11,576	11,906	12,036	11,446	11,490	11,381	11,328	11,192	11,146	10,590
Unemployment rate[5]	7.5	9.5	9.7	9.7	10.1	10.3	10.6	10.7	10.2	10.2	10.1	10.1	10.0	9.8	9.3
Not in labor force	61,460	62,067	61,948	61,897	61,832	62,129	62,016	62,070	62,806	62,952	63,172	63,008	63,204	62,193	62,431
Men, 16 years and over															
Noninstitutional population[1,2]	82,023	83,052	83,097	83,173	83,231	83,323	83,402	83,581	83,652	83,720	83,789	83,856	83,931	84,014	84,099
Labor force[2]	63,486	63,979	63,989	64,055	64,301	64,300	64,414	64,384	63,916	63,996	63,957	64,207	64,276	64,816	64,864
Participation rate[3]	77.4	77.0	76.9	77.0	77.3	77.2	77.2	77.0	76.4	76.4	76.3	76.6	76.6	77.1	77.1
Total employed[2]	58,909	57,800	57,664	57,710	57,598	57,456	57,408	57,338	57,283	57,234	57,300	57,476	57,656	58,464	58,625
Employment-population rate[4]	71.8	69.6	69.4	69.4	69.2	69.0	58.8	68.6	68.5	68.4	68.4	68.5	68.7	69.6	69.7
Resident Armed Forces[1]	1,512	1,527	1,537	1,551	1,526	1,524	1,516	1,529	1,531	1,528	1,528	1,530	1,528	1,525	1,521
Civilian employed	57,397	56,271	56,127	56,159	56,072	55,932	55,892	55,809	55,752	55,706	55,772	55,946	56,128	56,939	57,104
Unemployed	4,577	6,179	6,234	6,345	6,703	6,844	7,006	7,046	6,633	6,762	6,657	6,731	6,620	6,351	6,238
Unemployment rate[5]	7.2	9.7	9.8	9.9	10.4	10.6	10.9	10.9	10.4	10.6	10.4	10.5	10.3	9.8	9.6
Women, 16 years and over															
Noninstitutional population[1,2]	89,751	90,887	90,941	91,027	91,129	91,226	91,316	91,283	91,369	91,449	91,532	91,609	91,691	91,779	91,871
Labor force[2]	46,829	47,894	48,192	48,248	48,227	48,120	48,288	48,410	48,299	48,220	48,191	48,251	48,142	48,784	48,675
Participation rate[3]	52.2	52.7	53.0	43.0	52.9	52.7	42.9	43.0	52.9	52.7	52.6	52.7	52.5	53.2	53.0
Total employed[2]	43,133	43,395	43,598	43,662	43,615	43,388	43,388	43,420	43,486	43,493	3,467	43,653	43,569	43,990	44,324
Employment-population rate[4]	48.1	47.7	47.9	48.0	47.9	47.6	47.5	47.6	47.6	47.6	47.5	47.7	47.5	47.9	48.2
Resident Armed Forces[1]	133	139	137	138	144	144	144	136	136	136	136	141	141	143	143
Civilian employed	43,000	43,256	43,461	43,524	43,471	43,244	43,244	43,284	43,350	43,357	43,331	43,512	43,428	43,847	44,181
Unemployed	3,696	4,499	4,594	4,586	4,612	4,732	4,900	4,990	4,813	4,727	4,724	4,597	4,572	4,995	4,351
Unemployment rate[5]	7.9	9.4	9.5	9.5	9.6	9.8	10.1	10.3	10.0	9.8	9.8	9.5	9.5	9.8	8.9

[1] The population and Armed Forces figures are not adjusted for seasonal variation.
[2] Includes members of the Armed Forces stationed in the United States.
[3] Labor force as a percent of the noninstitutional population.
[4] Total employed as a percent of the noninstitutional population.
[5] Unemployment as a percent of the labor force (including the resident Armed Forces).

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

[Numbers in thousands]

	Annual average		1982						1983						
	1981	1982	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
TOTAL															
Civilian noninstitutional population[1]	170,130	172,271	172,364	172,511	172,690	172,881	173,058	173,199	173,354	173,305	173,656	173,794	173,953	174,125	174,306
Civilian labor force	108,670	110,204	110,416	110,614	110,858	110,752	111,042	111,129	110,548	110,553	110,484	110,786	110,749	111,932	111,875
Participation rate	63.9	64.0	64.1	64.1	64.2	64.1	64.2	64.2	63.8	63.7	63.6	63.7	63.7	64.3	64.2
Employed	100,397	99,526	99,588	99,683	99,543	99,176	99,136	99,093	99,103	99,063	99,103	99,458	99,557	100,786	101,285
Employment-population ratio[2]	59.0	57.8	57.8	57.8	57.6	57.4	57.3	57.2	57.2	57.1	57.1	57.2	57.2	57.9	58.1
Agriculture	3,68	3,401	3,445	3,429	3,363	3,413	3,466	3,411	3,412	3,393	3,375	3,371	3,367	3,522	3,527
Nonagricultural industries	97,030	96,125	96,143	96,254	96,180	95,763	95,670	95,682	95,691	95,670	95,729	96,088	96,190	97,264	97,758
Unemployed	8,273	10,678	10,828	10,931	11,315	11,576	11,906	12,036	11,446	11,490	11,381	11,328	11,192	11,146	10,590
Unemployment rate	7.6	9.7	9.8	9.9	10.2	10.5	10.7	10.8	10.4	10.4	10.3	10.2	10.1	10.0	9.5
Not in labor force	61,460	62,067	61,948	61,897	61,832	62,129	62,016	62,070	62,806	62,952	63,172	63,008	63,204	62,193	62,431
Men, 20 years and over															
Civilian noninstitutional population[1]	72,419	73,644	73,685	73,774	73,867	73,984	74,094	74,236	74,339	74,434	74,528	74,611	74,712	74,814	74,927
Civilian labor force	57,197	57,980	58,055	58,064	58,354	58,363	58,454	58,443	58,048	58,177	58,170	58,454	58,506	58,804	59,016
Participation rate	79.0	78.7	78.8	78.7	79.0	78.9	78.9	78.7	78.1	78.2	78.1	78.3	78.3	78.6	78.8
Employed	53,582	52,891	52,905	52,832	52,776	52,649	52,589	52,534	52,452	52,428	52,589	52,752	52,901	53,516	53,808
Employment-population ratio[2]	74.0	71.8	71.8	71.6	71.4	71.2	71.0	70.8	70.6	70.4	70.6	70.7	70.8	71.5	71.8
Agriculture	2,384	2,422	2,462	2,433	2,436	2,444	2,434	2,389	2,426	2,374	2,420	2,404	2,443	2,529	2,544
Nonagricultural industries	51,199	50,469	50,443	50,399	50,340	50,205	50,155	50,145	50,025	50,054	50,169	50,348	50,458	50,987	51,264
Unemployed	3,615	5,089	5,150	5,232	5,578	5,714	5,865	5,909	5,597	5,749	5,581	5,702	5,605	5,288	5,208
Unemployment rate	6.3	8.8	8.9	9.0	9.6	9.8	10.0	10.1	9.6	9.9	9.6	9.8	9.6	9.0	8.8
Women, 20 years and over															
Civilian noninstitutional population[1]	81,497	82,864	82,926	83,035	83,152	83,271	83,385	83,383	83,490	83,593	83,699	83,794	83,899	84,008	84,122
Civilian labor force	42,485	43,699	43,983	44,039	43,996	43,936	44,112	44,286	44,201	44,216	44,166	44,238	44,228	44,648	44,685
Participation rate	52.1	52.7	53.0	53.0	52.9	52.8	52.9	53.1	52.9	52.9	52.8	52.8	52.7	53.1	53.1
Employed	39,590	40,086	40,311	40,368	40,286	40,112	40,123	40,215	40,238	40,291	40,277	40,509	40,484	40,789	41,164
Employment-population ratio[2]	48.6	48.4	48.6	48.6	48.4	48.2	48.1	48.2	48.2	48.2	48.1	48.3	48.3	48.6	48.9
Agriculture	604	601	598	590	588	578	590	628	625	[c]657	647	622	597	636	607
Nonagricultural industries	38,986	39,485	39,713	39,778	39,698	39,534	39,533	39,587	39,613	39,634	39,630	39,886	39,887	40,153	40,557
Unemployed	2,895	3,613	3,672	3,671	3,710	3,824	3,989	4,071	3,963	3,925	3,889	3,729	3,744	3,859	3,521
Unemployment rate	6.8	8.3	8.3	8.3	8.4	8.7	9.0	9.2	9.0	8.9	8.8	8.4	8.5	8.6	7.9
Both sexes, 16 to 19 years															
Civilian noninstitutional population[1]	16,214	15,763	15,753	15,702	15,671	15,625	15,579	15,580	15,525	15,478	15,429	15,389	15,342	15,303	15,257
Civilian labor force	8,988	8,526	8,378	8,511	8,508	8,453	8,476	8,400	8,299	8,160	8,148	8,094	8,015	8,480	8,173
Participation rate	55.4	54.1	53.2	54.2	54.3	54,1	54.4	53.9	53.5	52.7	52.8	52.6	52.2	55.4	53.6
Employed	7,225	6,549	6,372	6,483	6,481	6,415	6,424	6,344	6,413	6,345	6,237	6,197	6,172	6,481	6,313
Employment-population ratio[2]	44.6	41.5	40.4	41.3	41.4	41.1	41.2	40.7	41.3	41.0	40.4	40.3	40.2	42.4	41.4
Agriculture	380	378	385	406	339	391	442	394	361	362	308	344	327	357	376
Nonagricultural industries	6,845	6,171	5,987	6,077	6,142	6,024	5,982	5,950	6,052	5,983	5,929	5,853	5,845	6,124	5,937
Unemployed	1,763	1,977	2,006	2,028	2,027	2,038	2,052	2,056	1,886	1,815	1,911	1,897	1,843	1,999	1,860
Unemployment rate	19.6	23.2	23.9	23.8	23.8	24.1	24.2	24.5	22.7	22.2	23.5	23.4	23.0	23.6	22.8
White															
Civilian noninstitutional population[1]	147,908	149,441	149,569	149,536	149,652	149,838	149,887	150,056	150,129	150,187	150,382	150,518	150,671	150,810	150,959
Civilian labor force	95,052	96,143	96,385	96,375	96,640	96,453	96,719	96,864	96,176	95,987	95,996	96,287	96,362	97,250	97,341
Participation rate	64.3	64.3	64.4	64.4	64.6	64.4	64.5	64.6	64.1	63.9	63.8	64.0	64.0	64.5	64.5
Employed	88,709	87,903	88,021	87,979	87,872	98,477	87,435	87,443	87,466	87,194	87,324	87,709	87,777	88,880	89,382
Employment-population ratio[2]	60.0	58.8	58.8	58.8	58.7	58.4	58.3	58.3	58.3	58.1	58.1	58.3	58.3	58.9	59.2
Unemployed	6,343	8,241	8,364	8,396	8,768	8,976	9,284	9,421	8,711	8,793	8,672	8,577	8,585	8,378	7,959
Unemployment rate	6.7	8.6	8.7	8.7	9.1	9.3	9.6	9.7	9.1	9.2	9.0	8.9	8.9	8.6	8.2
Black															
Civilian noninstitutional population[1]	18,219	18,584	18,600	18,626	18,659	18,692	18,723	18,740	18,768	18,796	18,823	18,851	18,880	18,911	18,942
Civilian labor force	11,086	11,331	11,341	11,400	11,443	11,398	11,475	11,522	11,542	11,548	11,554	11,631	11,672	11,783	11,764
Participation rate	60.8	61.0	61.0	61.2	61.3	61.0	61.3	61.5	61.5	61.4	61.4	61.7	61.8	62.3	62.1
Employed	9,355	9,189	9,211	9,220	9,172	9,102	9,159	9,127	9,142	9,276	9,253	9,209	9,270	9,352	9,469
Employment-population ratio[2]	51.3	49.4	49.5	49.5	49.2	48.7	48.9	48.7	48.7	49.4	49.2	48.8	49.1	49.5	50.0
Unemployed	1,731	2,142	2,130	2,180	2,271	2,296	2,316	2,395	2,400	2,271	2,302	2,423	2,402	2,432	2,295
Unemployment rate	15.6	18.9	18.8	19.1	19.8	20.1	202	20.8	20.8	19.7	19.9	20.8	20.6	20.6	19.5
Hispanic origin															
Civilian noninstitutional population[1]	9,310	9,400	9,521	9,689	9,464	9,474	9,355	9,301	9,328	9,368	9,551	9,665	9,747	9,738	9,640
Civilian labor force	5,972	5,983	5,972	6,045	5,961	5,973	5,923	5,898	5,981	5,992	6,074	6,206	6,167	6,253	6,079
Participation rate	64.1	63.6	62.7	62.4	63.0	63.0	63.3	63.4	64.1	64.0	63.6	64.2	63.3	64.2	63.1
Employed	5,348	5,158	5,136	5,162	5,097	5,075	5,012	4,998	5,053	5,042	5,088	5,304	5,318	5,379	5,331
Employment-population ratio[2]	57.4	54.9	53.9	53.3	53.9	53.6	53.6	53.7	54.2	53.8	53.3	54.9	54.6	55.2	55.3
Unemployed	624	825	836	883	864	898	911	900	929	950	986	902	849	874	748
Unemployment rate	10.4	13.8	14.0	14.6	14.5	15.0	15.4	15.3	15.5	15.8	16.2	14.5	13.8	14.0	12.3

[1] The population figures are not seasonally adjusted.

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

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

4. Selected employment indicators, seasonally adjusted

[Numbers in thousands]

Selected categories	Annual average		1982						1983						
	1981	1982	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
CHARACTERISTIC															
Civilian employed, 16 years and over	100,397	99,526	99,588	99,683	99,543	99,176	99,136	99,093	99,103	99,063	99,103	99,458	99,557	100,786	101,285
Men	57,397	56,271	58,127	56,159	56,073	55,932	55,892	55,809	55,752	55,706	55,772	55,946	56,128	56,939	57,104
Women	43,000	43,256	43,461	43,524	43,471	43,244	43,244	43,284	43,350	43,357	43,331	43,512	43,428	43,847	44,181
Married men, spouse present	38,882	38,074	38,177	38,121	37,998	37,852	37,641	37,507	37,450	37,428	34,452	37,523	37,560	37,925	38,293
Married women, spouse present	23,915	24,053	24,173	24,235	24,159	24,081	23,985	24,155	24,205	24,070	24,171	24,371	24,229	24,335	24,640
Women who maintain families	4,998	5,099	5,200	5,208	5,118	5,107	5,025	4,985	5,038	5,050	5,097	4,944	4,942	5,016	5,088
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture:															
Wage and salary workers	1,464	1,505	1,523	1,548	1,537	1,576	1,584	1,547	1,637	1,624	1,515	1,560	1,595	1,636	1,663
Self-employed workers	1,638	1,636	1,655	1,620	1,569	1,621	1,628	1,627	1,587	1,541	1,585	1,607	1,558	1,608	1,583
Unpaid family workers	266	261	254	255	254	229	241	224	231	223	260	28	229	263	259
Nonagricultural industries:															
Wage and salary workers	89,543	88,462	55,491	88,576	88,562	88,064	87,936	87,976	87,813	87,794	87,912	88,187	88,395	89,354	89,765
Government	15,68	15,516	15,471	15,562	15,681	15,436	15,514	15,477	15,386	15,501	15,452	15,518	15,523	15,498	15,615
Private industries	73,853	72,945	73,020	73,014	72,881	72,628	72,422	72,499	72,427	72,293	72,459	72,668	72,872	73,856	74,150
Private households	1,208	1,207	1,200	1,227	1,220	1,216	1,221	1,163	1,162	1,232	1,235	1,205	1,228	1,317	1,286
Other	72,645	71,738	71,820	71,787	71,661	71,412	71,201	71,336	71,265	71,061	71,225	71,463	71,644	72,539	72,864
Self-employed workers	7,097	7,262	7,286	7,338	7,422	7,332	7,349	7,335	7,465	7,385	7,453	7,528	7,408	7,493	7,598
Unpaid family workers	390	401	393	408	378	403	382	383	380	353	342	353	335	345	320
PERSONS AT WORK[1]															
Nonagricultural industries	91,377	90,552	90,414	90,486	90,884	90,232	90,238	90,219	90,903	90,207	90,271	92,267	90,941	90,539	92,253
Full-time schedules	74,339	72,245	72,288	72,045	71,723	71,394	71,442	71,499	71,786	71,564	71,878	73,594	72,975	72,978	74,004
Part time for economic reasons	4,499	5,852	5,577	5,820	6,495	6,903	6,411	6,425	6,845	6,481	6,202	6,082	5,928	5,729	5,636
Usually work full time	1,738	2,169	2,047	2,100	2,519	2,381	2,228	2,153	2,200	2,097	1,927	1,871	1,685	1,702	1,809
Usually work part time	2,761	3,683	3,530	3,720	3,976	4,022	4,183	4,272	4,645	4,384	4,275	4,21	4,243	4,027	3,826
Part time for noneconomic reasons	12,539	12,455	12,549	12,621	12,666	12,435	12,385	12,295	12,271	12,162	12,191	12,592	12,038	11,833	12,614

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

5. Selected unemployment indicators, seasonally adjusted

[Unemployment rates]

Selected categories	Annual average		1982						1983						
	1981	1982	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
CHARACTERISTIC															
Total, all civilian workers	7.6	9.7	9.8	9.9	10.2	10.4	10.7	10.8	10.4	10.4	10.3	10.2	10.1	10.0	9.5
Both sexes, 16 to 19 years	19.6	23.2	23.9	23.8	23.8	24.1	24.2	24.5	22.7	22.2	23.5	23.4	23.0	23.6	22.8
Men, 20 years and over	6.3	8.8	8.9	9.0	9.6	9.8	10.0	10.1	9.6	9.9	9.6	9.8	9.6	9.0	8.8
Women, 20 years and over	6.8	8.3	8.3	8.3	8.4	8.7	9.0	9.2	9.0	8.9	8.8	8.4	8.5	8.6	7.9
White, total	6.7	8.6	8.7	8.7	9.1	9.3	9.6	9.7	9.1	9.2	9.0	8.9	8.9	8.6	8.2
Both sexes, 16 to 19 years	17.3	20.4	20.9	20.8	20.7	21.5	21.2	21.6	20.0	19.7	21.4	20.4	19.8	20.0	19.5
Men, 16 to 19 years	17.9	21.7	22.5	22.5	22.2	23.0	22.6	22.8	21.2	21.1	22.9	21.7	20.2	19.8	20.4
Women, 16 to 19 years	16.6	19.0	19.1	18.9	19.1	19.9	19.8	20.4	18.7	18.2	19.7	19.0	19.4	20.2	18.5
Men, 20 years and over	5.6	7.8	7.9	8.0	8.6	8.8	9.1	9.2	8.4	8.7	8.5	8.6	8.6	7.8	7.7
Women, 20 years and over	5.9	7.3	7.3	7.2	7.5	7.6	8.0	8.1	7.8	7.7	7.4	7.2	7.3	7.4	6.7
Black, total	15.6	18.9	18.8	19.1	19.8	2.1	20.2	20.8	20.8	19.7	19.9	20.8	20.6	20.6	19.5
Both sexes, 16 to 19 years	41.4	48.0	49.3	51.2	48.6	47.7	49.8	49.5	45.7	45.4	43.5	49.0	48.2	50.6	48.1
Men, 16 to 19 years	40.7	48.9	48.9	50.5	51.0	49.2	53.0	52.5	45.9	45.3	44.5	48.0	53.1	51.1	47.6
Women, 16 to 19 years	42.2	47.1	49.7	52.1	45.9	45.9	46.2	46.2	45.5	45.4	42.3	50.0	42.3	50.0	48.8
Men, 20 years and over	13.5	17.8	174.1	76.1	9.2	19.6	19.2	20.5	19.7	18.7	18.8	20.3	19.8	19.2	18.7
Women, 20 years and over	13.4	15.4	15.5	15.4	15.7	16.2	16.5	16.5	18.2	17.0	17.7	17.0	17.1	17.0	16.0
Hispanic origin, total	10.4	13.8	14.0	14.6	14.5	15.0	15.4	15.3	15.5	15.8	16.2	14.5	13.8	14.0	12.3
Married men, spouse present	4.3	6.5	6.6	6.8	7.2	7.5	7.6	7.8	7.1	7.2	7.1	7.1	7.0	6.6	6.1
Married women, spouse present	6.0	7.4	7.4	7.3	7.6	7.9	8.2	8.2	7.8	7.6	7.5	7.3	7.5	7.8	7.0
Women who maintain families	10.4	11.7	12.0	11.7	12.4	11.3	12.5	13.2	13.2	13.0	13.5	13.2	12.9	12.8	11.6
Full-time workers	7.3	9.6	9.6	9.7	10.2	10.5	10.6	10.8	10.3	10.4	10.3	10.2	9.9	9.7	9.4
Part-time workers	9.4	10.5	11.2	10.4	10.6	10.3	11.3	11.1	10.6	10.1	10.5	10.6	11.0	12.1	10.2
Unemployed 15 weeks and over	2.1	3.2	3.2	3.3	3.5	3.8	4.1	4.3	4.2	4.2	4.2	3.9	4.1	4.1	3.9
Labor force time lost[1]	8.5	11.0	10.7	10.9	11.7	12.0	12.4	12.7	11.7	12.0	11.8	11.4	11.5	10.8	10.4
INDUSTRY															
Nonagricultural private wage and salary workers	7.7	10.1	10.2	10.2	11.0	11.0	11.4	11.6	10.8	10.8	10.8	10.5	10.5	10.0	9.6
Mining	6.0	13.4	15.8	16.0	18.5	17.9	18.1	18.1	17.1	18.4	18.6	20.3	22.7	18.2	16.6
Construction	15.6	20.0	20.3	20.4	22.3	22.3	21.8	22.0	20.0	19.7	20.3	20.3	20.4	18.1	18.0
Manufacturing	8.3	12.3	12.1	12.4	14.1	14.1	14.8	14.8	13.0	13.3	12.8	12.4	12.3	11.5	10.5
Durable goods	8.2	13.3	12.8	13.3	16.0	16.0	17.0	17.1	14.7	14.7	14.1	13.5	13.5	12.2	11.2
Nondurable goods	8.4	10.8	11.0	11.0	11.2	11.2	11.4	11.4	10.5	11.4	11.1	10.8	10.5	10.4	9.6
Transportation and public utilities	5.2	6.8	6.6	7.1	7.9	7.9	8.3	8.0	7.8	8.0	7.8	7.7	7.0	7.8	7.0
Wholesale and retail trade	8.1	10.0	10.3	10.0	10.4	10.4	10.6	11.0	10.8	10.9	11.2	10.4	10.1	10.2	9.7
Finance and service industries	5.9	6.9	7.0	7.0	7.1	7.1	7.7	7.9	7.6	7.3	7.2	7.3	7.5	7.2	7.3
Government workers	4.7	4.9	4.7	4.7	4.9	4.9	5.1	5.1	5.7	6.0	5.9	6.1	5.8	5.1	5.5
Agricultural wage and salary workers	12.1	14.7	14.1	14.2	13.3	13.3	15.6	16.5	16.0	16.4	16.3	17.2	17.0	17.0	14.2

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

6. Unemployment rates by sex and age, seasonally adjusted

[Civilian workers]

Sex and age	Annual average		1982						1983						
	1981	1982	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
Total, 16 years and over	7.6	9.7	9.8	9.9	10.2	10.5	10.7	10.8	10.4	10.4	10.3	10.2	10.1	10.0	9.5
16 to 24 years	14.9	17.8	17.9	18.2	18.3	18.7	19.0	18.9	18.3	18.3	18.1	18.1	18.1	17.6	16.8
16 to 19 years	19.6	23.2	23.9	23.8	23.8	24.1	24.2	24.5	22.7	22.2	23.5	23.4	23.0	23.6	22.8
16 to 17 years	21.4	24.9	25.8	25.8	26.5	26.1	26.3	27.4	24.1	23.4	25.1	26.3	26.2	25.8	25.3
18 to 19 years	18.4	22.1	22.6	22.5	22.0	22.9	22.8	22.7	21.7	21.5	22.7	21.8	21.1	22.4	21.1
20 to 24 years	12.3	14.9	14.7	15.3	15.3	15.8	16.3	16.0	16.1	16.3	15.4	15.4	15.6	14.4	13.8
25 years and over	5.4	7.4	7.5	7.5	7.9	8.1	8.3	8.6	8.1	8.2	8.1	8.0	7.9	7.9	7.4
25 to 54 years	5.8	7.9	8.0	8.0	8.6	8.7	8.9	9.1	8.7	8.7	8.7	8.5	8.5	8.3	7.8
55 years and over	3.6	5.0	5.3	5.2	5.2	5.5	5.7	5.8	5.4	5.4	5.4	5.6	5.3	5.6	5.3
Men, 16 years and over	7.4	9.9	10.0	10.2	10.7	10.9	11.1	11.2	10.6	10.8	10.7	10.7	10.6	10.0	9.8
16 to 24 years	15.7	19.1	19.2	19.5	20.0	20.2	20.6	20.5	19.7	19.8	19.5	19.4	19.7	18.4	18.4
16 to 19 years	20.1	24.4	25.2	25.1	25.4	25.6	25.7	25.8	23.9	23.6	25.3	24.4	23.9	23.7	23.8
16 to 17 years	22.0	26.4	27.7	27.4	29.0	28.8	28.2	29.0	24.4	23.6	26.0	27.0	27.4	25.4	27.9
18 to 19 years	18.8	23.1	23.4	23.4	23.0	23.4	24.1	24.0	23.5	23.4	24.8	22.8	22.0	22.9	21.2
20 to 24 years	13.2	16.4	16.2	16.6	17.3	17.4	18.0	17.8	17.6	17.8	16.6	17.0	17.6	15.7	15.7
25 years and over	5.1	7.5	7.5	7.7	8.2	8.5	8.6	8.8	8.2	8.5	8.4	8.5	8.2	7.8	7.6
25 to 54 years	5.5	8.0	8.1	8.2	9.0	9.1	9.2	9.4	8.7	9.1	9.0	8.9	8.8	8.4	8.1
55 years and over	3.5	5.1	4.9	5.5	5.5	6.0	6.2	6.3	5.8	5.7	5.8	6.3	5.8	5.4	5.4
Women, 16 years and over	7.9	9.4	9.6	9.5	9.6	9.9	10.2	10.3	10.0	9.8	9.8	9.6	9.5	9.9	9.0
16 to 24 years	14.0	16.2	16.4	16.8	16.3	17.0	17.2	17.1	16.7	16.6	16.6	16.5	16.2	16.6	14.9
16 to 19 years	19.0	21.9	22.6	22.5	22.1	22.5	22.6	23.0	21.5	20.7	21.5	22.4	21.9	23.4	21.6
16 to 17 years	20.7	23.2	23.8	23.9	23.8	22.9	24.2	25.6	23.7	23.2	24.2	25.5	24.7	26.2	22.3
18 to 19 years	17.9	21.0	21.9	21.5	20.9	22.3	21.4	21.3	19.8	19.3	20.5	20.7	20.2	21.9	21.0
20 to 24 years	11.2	13.2	13.1	13.7	13.1	14.0	14.4	14.0	14.2	14.5	14.1	13.5	13.3	12.9	11.5
25 years and over	5.9	7.3	7.4	7.1	7.5	7.6	7.9	8.2	7.9	7.7	7.7	7.4	7.6	7.9	7.2
25 to 54 years	6.3	7.7	7.7	7.7	8.0	8.2	8.5	8.8	8.7	8.2	8.3	7.9	8.2	8.2	7.6
55 years and over	3.8	4.8	5.8	4.8	4.8	4.8	4.9	5.1	4.8	4.9	4.7	4.5	4.6	5.8	5.3

7. Unemployed persons by reason for unemployment, seasonally adjusted

[Numbers in thousands]

Reason for unemployment	Annual average		1982						1983						
	1981	1982	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
Job losers	4,257	6,258	6,323	6,446	6,979	7,325	7,369	7,295	6,704	6,809	6,823	6,750	6,766	6,513	6,193
On layoff	1,430	2,127	2,126	2,218	2,625	2,519	2,531	2,468	2,131	2,024	1,945	1,948	1,943	1,822	1,719
Other job losers	2,837	4,141	4,197	4,228	4,354	4,806	4,838	4,827	4,573	4,784	4,878	4,803	4,823	4,691	4,474
Job leavers	923	840	819	814	786	803	794	826	839	848	901	815	801	782	738
Reentrants	2,102	2,384	2,478	2,440	2,437	2,322	2,546	2,529	2,623	2,491	2,426	2,488	2,365	2,425	2,429
New entrants	981	1,185	1,230	1,304	1,303	1,296	1,244	1,288	1,174	1,161	1,155	1,245	1,251	1,440	1,225
PERCENT DISTRIBUTION															
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	51.6	58.7	58.3	58.6	60.7	62.4	61.5	60.6	59.1	60.2	60.4	59.7	60.5	58.4	58.5
On layoff	17.3	19.9	19.6	20.2	22.8	21.4	21.2	20.5	18.8	17.9	17.2	17.2	17.4	16.3	16.2
Other job losers	34.3	38.8	38.7	38.4	37.8	40.9	40.5	40.1	40.3	42.3	43.1	42.5	43.1	42.0	42.3
Job leavers	11.2	7.9	7.5	7.4	6.8	6.8	6.6	6.9	7.4	7.5	8.0	7.2	7.2	7.0	7.0
Reentrants	25.4	22.3	22.8	22.2	21.2	19.8	21.3	21.8	23.1	22.0	21.5	22.0	21.1	21.7	22.9
New entrants	11.9	11.1	11.3	11.9	11.3	11.0	10.4	10.7	10.4	10.3	10.2	11.0	11.2	12.9	11.6
PERCENT OF CIVILIAN LABOR FORCE															
Job losers	3.9	5.7	5.7	5.8	6.3	6.6	6.6	6.6	6.1	6.2	6.2	6.1	6.1	5.8	5.5
Job leavers	.8	.8	.7	.7	.7	.7	.7	.7	.8	.8	.8	.7	.7	.7	.7
Reentrants	1.9	2.2	2.2	2.2	2.2	2.1	2.3	2.4	2.4	2.3	2.2	2.2	2.1	2.2	2.2
New entrants	.9	1.1	1.1	1.2	1.2	1.2	1.1	1.2	1.1	1.1	1.0	1.1	1.1	1.3	1.1

8. Duration of unemployment, seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average		1982						1983						
	1981	1982	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
Less than 5 weeks	3,449	3,883	3,959	3,933	4,004	3,930	3,963	4,019	3,536	3,731	3,440	3,547	3,519	3,655	3,498
5 to 14 weeks	2,539	3,311	3,249	3,346	3,549	3,511	3,549	3,460	3,328	3,106	3,140	3,154	2,979	2,915	2,794
15 weeks and over	2,285	3,485	3,569	3,637	3,856	4,167	4,524	4,732	4,634	4,618	4,615	4,356	4,517	4,589	4,417
15 to 26 weeks	1,122	1,708	1,780	1,808	1,830	1,951	2,191	2,125	1,928	1,928	1,875	1,662	1,731	1,638	1,830
27 weeks and over	1,162	1,776	1,789	1,829	2,026	2,216	2,333	2,607	2,706	2,689	2,740	2,694	2,786	2,951	2,587
Mean duration in weeks	13.7	15.6	15.6	16.1	16.6	17.1	17.3	18.0	19.4	19.0	19.1	19.0	20.4	22.0	21.7
Median duration in weeks	6.9	8.7	8.3	8.3	9.4	9.6	10.0	10.1	11.5	9.6	10.3	11.3	12.3	11.8	9.9

EMPLOYMENT, HOURS, AND EARNINGS DATA FROM ESTABLISHMENT SURVEYS

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

Definitions

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

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

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

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

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

Notes on the data

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

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

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

[Nonagricultural payroll data, in thousands]

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

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

10. Employment by State

[Nonagricultural payroll data, in thousands]

State	June 1982	May 1983	June 1983[p]	State	June 1982	May 1983	June 1983[p]
Alabama	1,326.5	1,312.5	1,314.7	Montana	278.5	267.6	272.4
Alaska	201.3	209.3	214.8	Nebraska	610.2	595.2	597.0
Arizona	1,019.4	1,043.5	1,027.8	Nevada	407.3	412.4	414.6
Arkansas	716.6	732.8	725.5	New Hampshire	400.3	393.3	401.3
California	9,892.8	9,842.8	9,924.9	New Jersey	3,142.4	3,085.0	3,129.2
Colorado	1,320.4	1,325.8	1,340.5	New Mexico	475.2	480.2	482.2
Connecticut	1,441.8	1,432.8	1,440.1	New York	7,320.3	7,220.2	7,264.5
Delaware	262.7	261.2	264.0	North Carolina	2,349.9	2,346.7	2,367.7
District of Columbia	596.4	594.7	597.0	North Dakota	255.3	256.1	258.6
Florida	3,754.1	3,846.7	3,851.0	Ohio	4,191.6	4,114.2	4,128.7
Georgia	2,212.1	2,238.6	2,252.6	Oklahoma	1,245.5	1,201.6	1,204.6
Hawaii	403.1	399.2	399.7	Oregon	978.5	950.8	966.7
Idaho	312.2	315.7	319.0	Pennsylvania	4,630.5	4,482.6	4,498.3
Illinois	4,622.9	4,516.4	4,532.5	Rhode Island	396.1	392.3	395.8
Indiana	2,019.8	1,994.8	1,986.5	South Carolina	1,170.6	1,174.9	1,180.4
Iowa	1,035.5	1,021.1	1,011.6	South Dakota	237.2	233.7	239.0
Kansas	928.7	910.8	912.7	Tennessee	1,702.7	1,673.6	1,680.0
Kentucky	1,170.2	1,169.2	1,168.2	Texas	6,318.1	6,163.7	6,174.6
Louisiana	1,616.3	1,587.8	1,585.0	Utah	563.6	559.2	561.7
Maine	422.3	408.7	418.5	Vermont	202.0	202.4	203.6
Maryland	1,689.0	1,676.4	1,688.5	Virginia	2,148.8	2,151.3	2,174.1
Massachusetts	2,655.5	2,634.3	2,636.5	Washington	1,594.3	1,581.9	1,599.5
Michigan	3,217.5	3,185.3	3,193.4	West Virginia	614.2	585.7	584.3
Minnesota	1,735.1	1,707.7	1,718.2	Wisconsin	1,882.4	1,849.7	1,874.9
Mississippi	791.6	790.2	790.3	Wyoming	227.0	213.7	218.6
Missouri	1,933.1	1,921.2	1,922.2				
				Virgin Islands	35.5	35.8	35.7

[1] Data not available.

p = preliminary.

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

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual average		1982						1983						
	1981	1982	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June[p]	July[p]
TOTAL	91,156	89,596	89,450	89,264	89,235	88,938	88,785	88,665	88,885	88,746	88,814	89,101	89,421	89,832	90,319
PRIVATE SECTOR	75,126	73,793	73,781	73,579	73,451	73,158	73,013	72,907	73,132	73,004	73,090	73,377	73,677	74,121	74,497
GOODS-PRODUCING	25,497	23,907	23,843	23,672	23,530	23,287	23,131	23,061	23,186	23,049	23,030	23,159	23,347	23,534	23,749
Mining	1,139	1,143	1,125	1,113	1,100	1,082	1,066	1,053	1,037	1,014	1,006	997	994	1,006	1,016
Construction	4,188	3,911	3,916	3,893	3,875	3,847	3,843	3,815	3,905	3,790	3,757	3,786	3,860	3,941	3,984
Manufacturing	20,170	18,853	18,802	18,666	18,555	18,358	18,222	18,193	18,244	18,245	18,267	18,376	18,493	18,587	18,749
Production workers	14,020	12,790	12,751	12,634	12,542	12,368	12,252	12,241	12,291	12,303	12,323	12,435	12,531	12,623	12,793
Durable goods	12,109	11,100	11,095	10,961	10,862	10,685	10,577	10,559	10,594	10,608	10,617	10,689	10,788	10,843	10,971
Production workers	8,294	7,350	7,350	7,234	7,150	6,992	6,900	6,892	6,931	6,949	6,961	7,035	7,115	7,168	7,297
Lumber and wood products	666	603	600	601	603	605	608	614	625	631	638	651	662	678	689
Furniture and fixtures	464	433	430	433	428	426	427	429	430	427	433	440	446	450	457
Stone, clay, and glass products	638	578	578	573	570	565	559	554	557	557	559	565	570	573	575
Primary metal industries	1,122	922	909	890	869	840	823	816	817	810	816	820	828	830	841
Fabricated metal products	1,590	1,435	1,432	1,416	1,402	1,378	1,362	1,359	1,364	1,364	1,362	1,369	1,379	1,385	1,396
Machinery, except electrical	2,498	2,267	2,256	2,213	2,184	2,122	2,088	2,066	2,048	2,042	2,030	2,031	2,064	2,067	2,096
Electric and electronic equipment	2,094	2,016	2,016	2,008	1,992	1,976	1,975	1,957	1,974	1,981	1,988	1,999	2,010	2,030	2,052
Transportation equipment	1,898	1,744	1,770	1,773	1,724	1,691	1,661	1,696	1,710	1,729	1,723	1,743	1,757	1,760	1,793
Instruments and related products	730	716	717	712	710	705	700	695	695	693	691	690	689	686	683
Miscellaneous manufacturing	408	386	387	382	380	377	374	373	374	374	377	381	383	384	389
Nondurable goods	8,061	7,753	7,707	7,705	7,693	7,673	7,645	7,634	7,650	7,637	7,650	7,687	7,705	7,744	7,778
Production workers	5,727	5,440	5,401	5,400	5,392	5,376	5,352	5,349	5,360	5,354	5,362	5,400	5,416	5,455	5,496
Food and kindred products	1,671	1,638	1,639	1,636	1,633	1,636	1,632	1,626	1,626	1,620	1,619	1,633	1,632	1,647	1,636
Tobacco manufactures	70	68	67	67	66	66	63	69	69	67	67	66	66	65	65
Textile mill products	823	750	741	736	734	733	727	727	726	726	730	733	736	745	750
Apparel and other textile products	1,244	1,164	1,141	1,151	1,149	1,148	1,141	1,140	1,150	1,148	1,143	1,149	1,153	1,160	1,183
Paper and allied products	689	662	660	657	659	653	654	653	653	652	652	654	656	657	661
Printing and publishing	1,266	1,269	1,266	1,267	1,266	1,265	1,263	1,263	1,266	1,265	1,269	1,274	1,276	1,280	1,286
Chemicals and allied products	1,109	1,079	1,073	1,074	1,070	1,066	1,064	1,059	1,057	1,056	1,056	1,058	1,058	1,057	1,059
Petroleum and coal products	214	201	200	200	202	201	200	199	200	199	199	199	198	198	197
Rubber and miscellaneous plastics products	737	701	700	698	696	689	685	685	688	691	699	707	716	721	735
Leather and leather products	238	221	220	219	218	216	216	213	215	214	216	214	214	214	206
SERVICE-PRODUCING	65,659	65,689	65,607	65,592	65,705	65,651	65,654	65,604	65,699	65,697	65,784	65,942	66,074	66,298	66,570
Transportation and public utilities	5,165	5,081	5,075	5,056	5,054	5,033	5,019	5,008	4,979	4,966	4,963	4,988	4,993	4,991	4,977
Wholesale and retail trade	20,547	20,401	20,438	20,410	20,380	20,344	20,320	20,256	20,355	20,343	20,350	20,329	20,356	20,485	20,498
Wholesale trade	5,358	5,280	5,279	5,265	5,252	5,237	5,212	5,192	5,185	5,181	5,176	5,180	5,197	5,219	5,227
Retail trade	15,189	15,122	15,159	15,145	15,128	15,107	15,108	15,064	15,170	15,162	15,174	15,149	15,159	15,266	15,271
Finance, insurance, and real estate	5,298	5,340	5,342	5,344	5,351	5,350	5,356	5,367	5,374	5,384	5,391	5,423	5,435	5,451	5,471
Services	18,619	19,064	19,083	19,097	19,136	19,144	19,187	19,215	19,238	19,262	19,356	19,478	19,546	19,660	19,802
Government	16,031	15,803	15,669	15,685	15,784	15,780	15,772	15,758	15,753	15,742	15,724	15,724	15,744	15,711	15,822
Federal	2,772	2,739	2,737	2,739	2,735	2,742	2,746	2,747	2,748	2,742	2,742	2,749	2,756	2,745	2,737
State and local	13,259	13,064	12,932	12,946	13,049	13,038	13,026	13,011	13,005	13,000	12,982	12,975	12,988	12,966	13,085

p = preliminary.

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

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

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

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

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

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

Industry division and group	Annual average		1982						1983						
	1981	1982	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June[p]	July[p]
PRIVATE SECTOR	35.2	34.8	34.9	34.8	34.8	34.7	34.7	34.8	35.1	34.5	34.8	34.9	35.1	35.1	35.1
MANUFACTURING	39.8	38.9	39.1	39.0	38.8	38.9	39.0	39.0	39.7	39.2	39.5	40.1	40.0	40.2	40.3
Overtime hours	2.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.6	2.9	2.7	2.9	3.1
Durable goods	40.2	39.3	39.6	39.4	39.1	39.2	39.3	39.3	40.1	39.7	39.9	40.5	40.4	40.6	40.8
Overtime hours	2.8	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.3	2.5	2.8	2.6	2.9	3.0
Lumber and wood products	38.7	38.0	38.5	38.2	38.4	38.1	38.7	38.8	40.5	39.5	39.5	40.0	39.8	40.0	39.9
Furniture and fixtures	38.4	37.2	37.4	37.8	37.5	37.5	37.6	37.8	38.6	37.9	38.3	39.3	39.2	39.6	39.9
Stone, clay, and glass products	40.6	40.0	40.5	40.2	40.2	40.2	40.2	40.1	41.4	40.5	40.6	41.0	41.2	41.6	41.8
Primary metal industries	40.5	38.6	38.8	38.6	37.8	38.2	38.3	38.8	38.9	39.1	39.4	39.9	40.3	40.3	40.8
Fabricated metal products	40.3	39.2	39.4	39.2	38.9	39.0	39.2	39.2	39.9	39.6	39.7	40.5	40.4	40.4	40.8
Machinery, except electrical	40.9	39.7	39.8	39.4	39.2	39.3	39.3	39.3	39.6	39.4	39.7	40.2	40.0	40.4	40.7
Electric and electronic equipment	40.0	39.3	39.6	39.3	39.0	39.2	39.3	39.4	39.9	39.5	39.8	40.4	40.3	40.5	40.7
Transportation equipment	40.9	40.5	40.9	40.6	40.1	40.4	40.9	40.1	41.6	41.2	41.7	42.3	41.6	42.0	42.2
Instruments and related products	40.4	39.8	40.1	40.0	39.9	39.6	39.4	39.7	40.4	39.7	40.0	40.5	40.4	40.0	40.1
Nondurable goods	39.1	38.4	38.5	38.5	38.6	38.5	38.6	38.6	39.1	38.5	39.0	39.5	39.4	39.6	39.6
Overtime hours	2.8	2.5	2.5	2.5	2.6	2.6	2.5	2.5	2.6	2.6	2.7	3.0	2.9	3.0	3.2
Food and kindred products	39.7	39.4	39.4	39.2	39.4	39.5	39.4	39.1	39.3	39.0	39.2	39.6	39.4	39.8	39.6
Textile mill products	39.6	37.5	37.7	38.1	38.1	38.3	38.8	38.9	39.7	39.0	39.6	40.6	40.4	40.7	41.0
Apparel and other textile products	35.7	34.7	35.1	35.0	35.1	35.1	35.0	35.1	36.6	35.2	35.6	36.2	36.1	36.2	35.9
Paper and allied products	42.5	41.8	41.9	41.7	41.6	41.7	41.7	41.7	41.8	41.4	42.1	42.4	42.7	42.8	43.0
Printing and publishing	37.3	37.1	37.0	36.9	37.0	37.1	37.1	37.1	37.5	37.1	37.4	37.7	37.4	37.6	37.7
Chemicals and allied products	41.6	40.9	40.8	40.9	41.0	40.8	40.7	40.9	41.0	41.0	41.2	41.5	41.6	41.9	41.9
Petroleum and coal products	43.2	43.9	43.4	44.0	44.2	43.8	44.1	44.4	44.5	44.4	44.9	43.5	43.6	43.7	42.8
Leather and leather products	36.7	35.6	36.0	36.0	35.7	35.4	35.8	35.8	36.3	34.9	36.0	37.0	36.8	36.8	37.3
TRANSPORTATION AND PUBLIC UTILITES	39.4	39.0	38.9	39.2	38.8	38.8	38.9	38.9	38.6	38.6	38.8	38.8	38.9	38.9	38.9
WHOLESALE AND RETAIL TRADE	32.2	31.9	32.0	32.0	31.9	31.9	31.8	32.1	31.9	31.4	31.7	31.7	31.9	32.0	31.9
WHOLESALE TRADE	38.5	38.4	38.5	38.5	38.4	38.4	38.4	38.4	38.5	38.2	38.4	38.5	38.6	38.7	38.6
RETAIL TRADE	30.1	29.9	29.9	29.9	29.9	29.9	29.8	30.1	29.9	29.3	29.7	29.6	29.9	29.9	29.8
SERVICES	32.6	32.6	32.6	32.6	32.8	32.6	32.6	32.6	32.9	32.5	32.7	32.7	32.9	32.7	32.7

p = preliminary.

NOTE: Miscellaneous manufacturing (a major manufacturing group, durable goods) and rubber and miscellaneous plastics products (a major manufacturing group, nondurable goods) are no longer shown. This is because the seasonal component in these is small relative to the trend-cycle, or irregular components, or both, and consequently cannot be precisely separated.

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

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

Industry division and group	Annual average		1982						1983						
	1981	1982	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June[p]	July[p]
PRIVATE SECTOR	$7.25	$7.67	$7.68	$7.70	$7.76	$7.79	$7.81	$7.82	$7.90	$7.92	$7.90	$7.94	$7.97	$7.97	$7.99
Seasonally adjusted	(1)	(1)	7.70	7.73	7.73	7.76	7.78	7.82	7.88	7.91	7.91	7.95	7.97	8.00	8.02
MINING	10.04	10.78	10.86	10.88	10.99	10.96	11.01	11.03	11.21	11.25	11.19	11.28	11.20	11.28	11.38
CONSTRUCTION	10.82	11.62	11.59	11.66	11.74	11.88	11.72	11.96	11.95	12.00	11.95	11.90	11.80	11.75	11.79
MANUFACTURING	7.99	8.50	8.55	8.51	8.59	8.56	8.61	8.68	8.71	8.75	8.74	8.77	8.78	8.81	8.86
Durable goods	8.54	9.06	9.12	9.09	9.17	9.13	9.17	9.24	9.26	9.31	9.29	9.31	9.34	9.37	9.40
Lumber and wood products	6.99	7.46	7.59	7.56	7.65	7.57	7.59	7.55	7.68	7.72	7.68	7.74	7.78	7.84	7.88
Furniture and fixtures	5.91	6.31	6.33	6.37	6.40	6.40	6.43	6.46	6.49	6.50	6.51	6.51	6.52	6.60	6.64
Stone, clay, and glass products	8.27	8.86	8.93	8.92	9.03	9.03	9.04	9.08	9.10	9.10	9.13	9.16	9.20	9.27	9.36
Primary metal industries	10.81	11.33	11.36	11.48	11.54	11.41	11.49	11.49	11.56	11.53	11.24	11.25	11.28	11.26	11.41
Fabricated metal products	8.19	8.78	8.85	8.85	8.90	8.85	8.90	8.96	8.98	9.04	9.05	9.07	9.08	9.11	9.10
Machinery, except electrical	8.81	9.29	9.32	9.34	9.41	9.36	9.38	9.43	9.40	9.44	9.46	9.48	9.59	9.64	9.65
Electric and electronic equipment	7.62	8.21	8.23	8.30	8.37	8.41	8.45	8.51	8.53	8.56	8.60	8.60	8.60	8.64	8.66
Transportation equipment	10.39	11.12	11.25	11.17	11.24	11.29	11.34	11.43	11.40	11.49	11.49	11.53	11.52	11.63	11.59
Instruments and related products	7.42	8.10	8.13	8.17	8.24	8.26	8.31	8.38	8.42	8.48	8.47	8.46	8.48	8.48	8.51
Miscellaneous manufacturing	5.97	6.43	6.41	6.40	6.50	6.50	6.56	6.67	6.72	6.73	6.75	6.76	6.82	6.80	6.88
Nondurable goods	7.18	7.73	7.77	7.74	7.84	7.80	7.88	7.95	7.97	7.99	8.00	8.03	8.03	8.03	8.13
Food and kindred products	7.44	7.89	7.88	7.86	7.91	7.88	8.00	8.06	8.09	8.11	8.16	8.20	8.18	8.17	8.19
Tobacco manufactures	8.88	9.78	10.42	9.51	9.55	9.50	10.16	9.63	9.87	9.96	10.43	10.61	10.74	10.92	11.01
Textile mill products	5.52	5.83	5.81	5.83	5.86	5.88	5.92	6.04	6.08	6.10	6.11	6.14	6.14	6.16	6.17
Apparel and other textile products	4.97	5.20	5.19	5.20	5.23	5.21	5.24	5.28	5.33	5.33	5.33	5.35	5.33	5.36	5.33
Paper and allied products	8.60	9.32	9.41	9.45	9.63	9.53	9.60	9.65	9.65	9.65	9.67	9.72	9.81	9.90	10.09
Printing and publishing	8.19	8.75	8.75	8.81	8.91	8.89	8.92	9.00	8.97	8.99	9.03	9.03	9.05	9.07	9.14
Chemicals and allied products	9.12	9.96	10.00	10.01	10.19	10.22	10.26	10.32	10.34	10.41	10.39	10.43	10.50	10.51	10.57
Petroleum and coal products	11.38	12.46	12.42	12.42	12.61	12.57	12.68	12.71	13.16	13.25	13.28	13.27	13.17	13.13	13.15
Rubber and miscellaneous plastics products	7.17	7.65	7.67	7.66	7.78	7.74	7.81	7.91	7.91	7.91	7.92	7.95	7.97	7.96	8.13
Leather and leather products	4.99	5.32	5.29	5.33	5.41	5.39	5.41	5.44	5.50	5.50	5.52	5.52	5.51	5.50	5.54
TRANSPORTATION AND PUBLIC UTILITIES	9.70	10.30	10.29	10.42	10.46	10.48	10.59	10.62	10.69	10.72	10.68	10.72	10.74	10.73	10.85
WHOLESALE AND RETAIL TRADE	5.92	6.21	6.20	6.20	6.245	6.27	6.30	6.27	6.42	6.45	6.43	6.45	6.46	6.45	6.46
WHOLESALE TRADE	7.56	8.02	8.03	8.07	8.10	8.13	8.14	8.20	8.31	8.28	8.27	8.34	8.36	8.35	8.39
RETAIL TRADE	5.25	5.47	5.47	5.46	5.50	5.53	5.56	5.54	5.65	5.69	5.68	5.69	5.71	5.71	5.71
FINANCE, INSURANCE, AND REAL ESTATE	6.31	6.78	6.77	6.86	6.90	6.97	7.00	7.01	7.19	7.22	7.19	7.23	7.31	7.25	7.28
SERVICES	6.41	6.90	6.87	6.980	6.99	7.04	7.08	7.12	7.18	7.19	7.17	7.20	7.23	7.19	7.18

[1] Not available.

p = preliminary.

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

[1977 = 100]

Industry	Not seasonally adjusted					Seasonally adjusted						
	July 1982	May 1983	June 1983[p]	July 1983[p]	Percent change from: July 1982 to July 1983	July 1982	Mar. 1983	Apr. 1983	May 1983	June 1983[p]	July 1983[p]	Percent change from: June 1983 to July 1983
PRIVATE SECTOR (in current dollars)	148.5	154.5	154.3	154.9	4.3	148.8	153.4	154.0	154.6	154.8	155.2	0.2
Mining	160.9	165.0	166.7	168.6	4.8	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Construction	141.3	143.9	143.8	144.3	2.1	141.2	145.5	145.9	144.9	144.7	144.2	−.3
Manufacturing	153.3	157.4	157.7	158.2	3.2	153.3	157.1	157.0	157.7	157.8	158.1	.2
Transportation and public utilities	148.0	155.8	155.4	157.1	6.1	148.8	155.9	155.9	156.6	156.8	157.9	.7
Wholesale and retail trade	145.1	151.5	151.4	151.7	4.5	145.2	149.6	150.5	151.2	151.5	151.8	.2
Finance, insurance, and real estate	148.2	159.0	158.0	158.7	7.1	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Services	147.7	154.9	154.5	154.7	4.8	148.5	152.6	154.0	154.9	155.4	155.7	.2
PRIVATE SECTOR (in constant dollars)	92.4	94.6	94.3	(2)	(2)	92.8	95.0	94.8	94.7	94.7	(2)	(2)

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

[2] Not available.

p = preliminary.

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

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

Industry division and group	Annual average		1982						1983						
	1981	1982	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June[p]	July[p]
PRIVATE SECTOR															
Current dollars	$255.20	$266.92	$270.34	$271.04	$270.05	$270.31	$271.01	$273.70	$273.34	$270.86	$274.13	$275.52	$278.15	$281.34	$282.85
Seasonally adjusted	([1])	([1])	268.73	269.00	269.00	269.27	269.97	272.14	276.59	272.90	275.27	277.46	279.75	280.80	281.50
Constant (1977) dollars	.00	167.87	168.12	168.24	167.42	167.06	167.81	170.11	169.88	168.24	169.85	169.55	170.33	171.86	([1])
MINING	438.75	459.23	461.55	461.31	461.58	459.22	458.02	465.47	476.43	464.63	467.74	469.25	472.64	479.40	474.55
CONSTRUCTION	399.26	426.45	440.42	438.42	433.21	440.75	423.09	440.13	440.96	424.80	434.98	436.73	441.32	445.33	450.38
MANUFACTURING															
Current dollars	318.00	330.65	332.60	331.89	334.15	333.84	338.37	344.60	341.43	339.50	346.10	349.05	350.32	355.92	355.29
Constant (1977) dollars	.00	207.96	206.84	206.01	207.16	206.33	209.52	214.17	212.20	210.87	214.44	214.80	214.53	217.42	([1])
Durable goods	343.31	356.06	357.50	356.33	357.63	357.90	363.13	371.45	367.62	366.81	372.53	375.19	377.34	382.30	379.76
Lumber and wood products	270.51	283.48	292.97	293.33	296.06	289.93	292.97	293.70	300.29	299.54	302.59	308.05	312.76	319.87	315.99
Furniture and fixtures	226.94	234.73	[c]232.31	242.70	241.28	243.20	244.34	250.00	243.38	243.10	251.29	253.89	254.28	263.34	259.62
Stone, clay, and glass products	335.76	354.40	362.56	362.15	365.72	366.62	366.12	366.83	364.91	358.54	368.85	374.64	380.88	390.27	393.12
Primary metal industries	437.81	437.34	437.36	439.68	438.52	431.30	440.07	450.41	450.84	450.82	[c]456.23	451.13	452.33	456.03	462.11
Fabricated metal products	330.06	344.18	344.27	346.04	345.32	346.04	350.66	359.30	354.71	354.37	361.10	364.61	366.83	370.78	366.73
Machinery except electrical	360.33	368.81	365.34	364.26	367.93	365.98	371.45	380.97	372.24	371.94	[c]377.40	379.20	382.64	388.49	386.97
Electric and electronic equipment	304.80	322.65	321.79	324.53	325.59	329.67	334.62	342.95	338.64	336.41	344.00	344.86	345.72	350.78	348.13
Transportation equipment	424.95	450.36	456.75	446.80	443.98	457.25	467.21	474.35	468.54	469.94	480.28	484.26	482.69	493.11	485.62
Instruments and related products	299.77	322.38	321.95	325.98	328.78	327.10	331.57	338.55	337.64	335.81	340.49	339.25	341.74	340.05	337.00
Miscellaneous manufacturing	231.64	247.56	244.86	247.04	250.90	253.50	256.50	260.13	260.06	253.72	263.25	263.64	264.62	264.52	264.88
Nondurable goods	280.74	296.83	299.15	299.54	304.19	301.08	305.74	310.85	307.64	305.22	311.20	313.97	315.58	318.79	321.95
Food and kindred products	295.37	310.87	311.26	311.26	315.61	312.05	317.60	319.18	315.51	312.24	316.61	318.98	321.47	325.17	325.14
Tobacco manufactures	344.54	369.68	383.46	362.33	379.14	370.50	386.08	364.98	360.26	339.64	378.61	395.75	401.68	420.42	422.78
Textile mill products	218.59	218.63	216.13	223.29	223.85	227.56	231.47	236.77	237.12	236.07	242.57	246.83	248.67	253.18	249.89
Apparel and other textile products	177.43	180.44	183.73	183.56	183.57	183.91	184.97	186.38	188.68	185.48	190.28	192.07	192.41	196.71	192.95
Paper and allied products	365.50	389.58	392.40	393.12	402.53	397.40	402.24	410.13	402.41	396.62	406.14	410.18	415.94	424.71	431.85
Printing and publishing	305.49	324.63	322.88	326.85	331.45	329.82	332.72	341.10	332.79	330.83	338.63	337.72	337.57	339.22	342.75
Chemicals and allied products	379.39	407.36	406.00	407.41	419.83	416.98	420.66	427.25	421.87	425.77	428.07	432.85	435.75	440.37	440.77
Petroleum and coal products	491.62	546.99	546.48	546.48	572.49	555.59	564.26	563.05	572.46	573.73	584.32	581.23	575.73	576.41	570.71
Rubber and miscellaneous plastics products	288.95	302.94	303.73	304.10	308.09	304.18	309.28	319.56	317.19	314.03	321.55	326.75	327.57	328.75	334.14
Leather and leather products	183.13	189.39	190.97	192.95	192.06	189.73	194.22	196.38	196.90	190.30	197.06	201.48	204.42	207.90	207.20
TRANSPORTATION AND PUBLIC UTILITIES	382.18	401.70	403.37	410.55	405.85	406.62	413.01	416.30	409.43	411.65	413.32	413.79	415.64	419.54	425.32
WHOLESALE AND RETAIL TRADE	190.62	198.10	202.12	201.50	200.30	199.39	199.71	203.15	201.59	199.31	201.90	203.18	205.43	207.05	209.95
WHOLESALE TRADE	291.06	307.97	310.76	311.50	311.04	313.01	313.39	317.34	318.27	313.81	316.74	319.42	321.86	323.15	325.53
RETAIL TRADE	158.03	163.55	167.93	167.62	165.55	164.79	164.58	168.97	164.98	163.30	166.42	167.29	169.59	171.87	174.73
FINANCE, INSURANCE, AND REAL ESTATE	229.05	245.44	245.07	249.02	249.09	252.31	253.40	254.46	262.44	260.64	258.84	261.00	265.35	261.73	263.54
SERVICES	208.97	224.94	227.40	227.70	228.57	228.80	230.10	232.11	234.79	232.96	233.74	234.72	236.42	236.55	238.38

[1] Not available.
p = preliminary.
c = corrected.

17. Indexes of diffusion: industries in which employment increased

[In percent]

Time span	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Over 1-month span	1981	57.8	52.4	52.2	65.6	60.2	58.9	62.6	49.5	42.2	33.3	29.3	30.9
	1982	28.5	45.4	36.0	39.0	47.6	32.8	38.4	37.1	34.1	29.3	32.0	42.2
	1983	56.5	45.7	62.4	69.1	71.0	64.5	[p]69.6	—	—	—	—	—
Over 3-month span	1981	58.3	54.6	59.1	65.9	67.5	66.7	60.5	50.5	33.3	30.1	24.5	23.4
	1982	25.3	28.8	32.0	34.1	32.5	33.6	27.2	27.2	26.1	25.5	24.7	40.6
	1983	45.4	55.1	65.6	75.8	[p]75.8	[p]76.1	—	—	—	—	—	—
Over 6-month span	1981	68.5	65.3	63.7	69.4	64.2	58.6	45.7	34.4	29.6	24.2	25.0	22.0
	1982	20.2	23.7	25.3	29.8	26.1	26.1	23.4	19.1	21.2	26.1	26.6	35.8
	1983	50.5	63.2	73.4	[p]76.3	—	—	—	—	—	—	—	—
Over 12-month span	1981	74.5	71.2	70.4	58.1	47.6	41.4	34.9	29.8	27.4	23.7	25.3	23.1
	1982	22.0	20.7	18.0	19.4	18.3	20.7	20.7	22.8	24.2	31.5	37.6	[p]43.8
	1983	[p]50.8	—	—	—	—	—	—	—	—	—	—	—

p = preliminary.

NOTE: Figures are the percent of industries with employment rising. (Half of the unchanged components are counted as rising.) Data are centered within the spans. See the "Definitions" in this section.

UNEMPLOYMENT INSURANCE DATA

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

Definitions

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

Under both State and Federal unemployment insurance programs for civilian employees, insured workers must report the completion of at least 1 week of unemployment before they are defined as unemployed. Persons not covered by unemployment insurance (about 10 percent of the labor force) and those who have exhausted or not yet earned benefit rights are excluded from the scope of the survey. **Initial claims** are notices filed by persons in unemployment insurance programs to indicate they are out of work and wish to begin receiving compensation. A claimant who continued to be unemployed a full week is then counted in the insured unemployment figure. The **rate of insured unemployment** expresses the number of insured unemployed as a percent of the average insured employment in a 12-month period.

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

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

18. Unemployment insurance and employment service operations

[All items except average benefits amounts are in thousands]

Item	1982							1983					
	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June[p]
All programs:													
Insured unemployment	4,327	4,495	4,398	4,283	4,391	4,635	5,074	5,459	5,437	5,134	4,642	3,947	3,481
State unemployment insurance program:[1]													
Initial claims[2]	2,399	2,655	2,358	2,342	2,443	2,661	3,080	3,143	2,065	2,075	1,874	1,666	1,732
Insured unemployment (average weekly volume)	3,707	3,912	3,831	3,712	3,828	4,156	4,581	4,923	4,759	4,401	3,906	3,361	3,063
Rate of insured unemployment	4.3	4.6	4.4	4.2	4.4	4.7	5.2	5.6	5.5	5.0	4.5	3.9	3.5
Weeks of unemployment compensated	14,648	14,655	15,015	14,547	13,786	15,170	17,873	18,307	16,895	19,529	14,986	13,133	12,912
Average weekly benefit amount for total unemployment	$118.64	$117.28	$118.97	$120.78	$122.81	$123.43	$123.42	$124.29	$124.47	$125.47	[r]$124.85	$124.49	$123.64
Total benefits paid	$1,692,150	$1,679,378	$1,746,195	$1,710,573	$1,647,343	$1,820,019	$2,135,302	$2,205,551	$2,052,415	$2,367,752	[r]$1,816,539	$1,587,888	$1,551,401
State unemployment insurance program:[1] (Seasonally adjusted data)													
Initial claims[2]	2,528	2,317	2,814	2,902	2,688	2,680	2,586	2,187	2,138	2,148	1,952	1,993	1,825
Insured unemployment (average weekly volume)	3,995	3,959	4,137	4,446	4,680	4,618	4,355	3,980	3,979	3,884	3,774	3,538	3,301
Rate of insured unemployment	4.6	4.5	4.7	5.1	5.3	5.3	5.0	4.6	4.6	4.5	4.3	4.1	3.8
Unemployment compensation for ex-servicemen:[3]													
Initial claims[1]	10	10	11	11	10	17	24	21	16	18	15	14	16
Insured unemployment (average weekly volume)	8	7	7	8	9	14	26	37	37	34	30	26	25
Weeks of unemployment compensated	29	25	24	25	28	33	90	132	143	156	117	104	108
Total benefits paid	$3,314	$2,821	$2,793	$2,900	$3,366	$4,006	$11,191	$16,807	$18,032	$19,588	$14,776	$13,111	$13,691
Unemployment compensation for Federal civilian employees:[4]													
Initial claims	14	13	12	13	16	14	15	16	10	11	10	9	13
Insured unemployment (average weekly volume)	28	29	27	26	28	31	33	35	33	31	26	22	21
Weeks of unemployment compensated	123	120	118	111	110	126	146	142	131	146	109	93	90
Total benefits paid	$13,922	$13,445	$13,140	$12,303	$12,144	$14,023	$16,114	$16,045	$15,083	$16,871	$12,422	$10,603	$10,266
Railroad unemployment insurance:													
Applications	36	68	68	14	20	17	17	20	7	7,628	94	4	30
Insured unemployment (average weekly volume)	44	55	55	61	82	81	83	102	72	65	79	90	49
Number of payments	93	100	100	137	159	162	172	219	158	169	172	183	123
Average amount of benefit payment	$199.15	$202.54	$202.54	$216.14	$212.35	$216.55	$217.00	$220.32	$214.54	$213.44	$203.87	$215.15	$203.54
Total benefits paid	$18,574	$17,998	$17,998	$31,123	$31,638	$35,061	$39,500	$44,514	$33,100	$36,243	$27,783	$29,411	$14,984
Employment service:[5]													
New applications and renewals	10,965	....	....	14,320	....	....	4,527	....	....	8,377	....	....	....
Nonfarm placements	1,902	....	....	2,804	....	....	642	....	....	1,184	....	....	....

[1] Initial claims and State insured unemployment include data under the program for Puerto Rican sugarcane workers.
[2] Excludes transition claims under State programs.
[3] Excludes data on claims and payments made jointly with other programs.
[4] Excludes data or claims and payments made jointly with State programs.
[5] Cumulative total for fiscal year (October 1-September 30). Data computed quarterly.

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

p = preliminary.
r = revised.

PRICE DATA

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

Definitions

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

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

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

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

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

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

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

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

Notes on the data

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

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

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

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

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

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

[1967 = 100]

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

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1982	1983						1982	1983					
	June	Jan.	Feb.	Mar.	Apr.	May	June	June	Jan.	Feb.	Mar.	Apr.	May	June
All items	290.6	293.1	293.2	293.4	295.5	297.1	298.1	290.1	292.1	292.3	293.0	294.9	296.3	297.2
Food and beverages	280.2	280.7	281.6	283.2	284.6	285.0	284.7	280.5	281.1	282.1	283.5	284.9	285.4	285.0
Housing	317.5	317.9	318.5	318.6	320.3	321.8	323.1	317.5	317.0	317.6	319.2	320.3	321.3	322.3
Apparel and upkeep	190.8	191.0	192.0	194.5	195.5	196.1	195.6	189.6	190.0	191.0	194.0	194.8	195.3	194.7
Transportation	292.8	293.0	289.9	287.4	292.3	296.2	298.3	294.5	294.3	291.1	288.6	293.5	297.5	299.6
Medical care	326.4	347.8	351.3	352.3	353.5	354.3	355.4	324.8	345.3	348.9	350.0	351.2	352.1	353.3
Entertainment	235.6	241.5	243.1	244.6	244.6	244.8	245.4	232.3	237.7	239.5	240.8	241.1	241.3	241.9
Other goods and services	255.8	279.9	281.6	281.9	283.2	283.6	284.5	253.1	277.8	279.6	280.0	281.4	281.8	282.8
Commodities	265.1	267.2	266.7	266.7	269.2	270.9	271.6	265.4	268.0	267.8	268.4	270.9	272.7	273.3
Commodities less food and beverages	254.0	256.5	255.2	254.3	257.3	259.7	260.9	254.5	257.8	257.1	257.4	260.3	262.7	263.7
Nondurables less food and beverages	266.3	267.4	265.2	263.4	267.8	271.3	272.3	268.2	269.3	266.9	265.0	269.7	273.3	274.4
Durables	243.2	247.3	247.1	247.4	248.7	249.5	251.2	242.3	247.3	247.8	249.7	251.2	252.8	253.7
Services	334.9	337.9	338.9	339.4	341.2	342.6	344.0	335.7	336.9	337.8	338.5	339.5	340.1	341.4
Rent, residential	222.6	232.2	[2]233.1	233.6	234.5	235.1	235.9	222.1	231.7	232.5	233.1	234.0	234.6	235.3
Household services less rent of shelter (12/82 = 100)	....	100.9	101.0	101.6	102.0	103.2	104.2	....	....	....	....	....	....	....
Transportation services	294.7	300.1	299.9	299.8	300.8	301.2	301.4	293.2	297.1	296.9	296.7	297.2	297.6	297.5
Medical care services	353.0	377.4	381.5	382.2	382.8	383.5	384.6	350.7	374.0	378.2	379.0	379.7	380.5	381.7
Other services	257.0	271.5	272.6	272.9	274.2	274.7	275.6	255.5	269.1	270.2	270.6	272.0	272.6	273.5
Special indexes:														
All items less food	289.7	292.6	292.6	292.4	294.7	296.5	297.8	289.4	291.9	291.9	292.4	294.4	296.1	297.2
All items less homeowners' costs	....	100.2	100.2	100.3	101.0	101.6	101.9	....	....	....	....	....	....	....
All items less mortgage interest costs	....	....	....	....	....	....	....	273.7	278.9	279.0	279.7	281.7	283.5	284.3
Commodities less food	251.9	254.4	253.2	252.4	255.4	257.6	258.9	252.4	255.7	255.0	255.4	258.2	260.6	261.6
Nondurables less food	261.2	262.4	260.5	258.9	263.0	266.3	267.3	263.0	264.2	262.2	260.6	265.0	268.4	269.3
Nondurables less food and apparel	301.0	303.1	299.9	296.5	302.1	306.7	308.4	302.4	304.4	301.1	297.4	303.5	308.2	309.9
Nondurables	274.4	275.2	274.6	274.4	277.3	279.3	279.7	275.4	276.2	275.6	275.3	278.4	280.4	280.8
Services less rent of shelter (12/82 = 100)	....	100.7	101.0	101.3	101.6	102.2	102.7	....	....	....	....	....	....	....
Services less medical care	330.7	331.4	332.2	332.7	334.5	336.0	337.4	331.7	330.7	331.2	332.0	333.0	333.5	334.9
Domestically produced farm foods	270.3	264.7	266.6	268.4	269.9	270.6	269.6	269.2	265.0	266.0	267.6	269.0	269.6	268.7
Selected beef cuts	289.1	271.2	272.0	272.6	279.4	281.5	278.5	290.6	272.5	273.5	274.0	280.7	283.0	279.8
Energy[1]	418.6	414.5	406.7	399.9	410.0	421.3	427.3	420.4	415.1	406.9	399.8	410.8	422.1	428.1
Energy commodities[1]	430.8	414.9	401.6	388.3	403.2	416.3	420.7	431.6	415.2	401.9	388.7	404.3	417.3	421.7
All items less energy	280.7	283.8	284.7	285.6	287.0	287.6	288.2	279.4	282.2	283.0	284.4	285.6	286.1	286.5
All items less food and energy	277.3	281.1	282.0	282.6	284.0	284.7	285.5	276.0	279.3	280.2	281.6	282.6	283.2	283.8
Commodities less food and energy	232.1	237.1	237.9	239.1	240.2	240.8	241.5	231.3	237.1	237.9	240.0	241.2	242.3	242.9
Services less energy	329.9	331.8	332.9	333.1	334.8	335.6	336.4	330.6	330.5	331.4	331.9	332.7	332.6	333.2
Purchasing power of the consumer dollar, 1967 = $1	$0.344	$0.341	$0.341	$0.341	$0.338	$0.337	$0.335	$0.345	$0.342	$0.342	$0.341	$0.339	$0.337	$0.336

See footnotes at end of table.

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1982	1983						1982	1983					
	June	Jan.	Feb.	Mar.	Apr.	May	June	June	Jan.	Feb.	Mar.	Apr.	May	June
FOOD AND BEVERAGES	280.2	280.7	281.6	283.2	284.6	285.0	284.7	280.5	281.1	282.1	283.5	284.9	285.4	285.0
Food	287.8	288.1	289.0	290.5	291.9	292.4	292.0	288.0	288.4	289.3	290.7	292.1	292.6	292.2
Food at home	282.6	279.3	280.3	281.9	283.4	283.8	283.0	281.6	278.6	279.7	281.2	282.5	282.9	282.1
Cereals and bakery products	283.6	287.8	288.7	289.8	291.1	291.7	292.4	282.3	286.4	287.4	288.5	289.6	290.2	291.0
Cereals and cereal products (12/77 = 100)	154.5	154.0	154.0	155.0	156.1	157.0	157.9	155.5	154.8	154.7	155.8	156.9	157.7	158.7
Flour and prepared flour mixes (12/77 = 100)	142.1	140.3	139.8	139.4	140.2	141.3	142.2	142.5	140.6	140.1	139.9	140.4	141.7	142.7
Cereal (12/77 = 100)	166.1	168.1	169.2	171.3	173.8	175.7	176.4	168.2	170.3	171.4	173.5	175.9	177.8	178.5
Rice, pasta, and cornmeal (12/77 = 100)	149.4	156.5	145.3	146.0	145.8	144.8	146.2	150.6	147.6	146.3	147.0	146.8	145.8	147.3
Bakery products (12/77 = 100)	148.6	151.7	152.4	152.8	153.3	153.5	153.7	147.4	150.5	151.2	151.6	152.0	152.2	152.4
White bread	242.4	248.9	249.8	252.0	252.1	252.6	253.1	238.3	244.6	245.7	247.8	247.6	248.2	248.8
Other breads (12/77 = 100)	145.6	147.7	148.7	149.0	148.8	149.7	149.8	147.5	149.7	150.6	151.1	150.7	151.8	151.8
Fresh biscuits, rolls, and muffins (12/77 = 100)	149.9	152.6	153.1	152.0	152.5	152.0	151.7	146.2	148.6	149.1	148.0	148.4	147.9	148.0
Fresh cakes and cupcakes (12/77 = 100)	149.2	153.1	154.0	153.8	154.9	154.7	154.6	147.5	151.3	152.2	152.1	153.3	153.0	152.9
Cookies (12/77 = 100)	150.7	153.6	153.7	155.1	156.8	156.1	155.7	151.5	154.6	154.6	156.0	157.6	156.8	156.4
Crackers, bread, and cracker products (12/77 = 100)	140.9	144.9	146.5	146.0	147.2	147.9	149.5	142.3	146.4	147.9	147.3	148.7	149.5	151.0
Fresh sweetrolls, coffeecake, and donuts (12/77 = 100)	148.9	152.3	154.2	154.2	153.7	154.0	153.7	151.5	154.9	156.8	156.9	156.2	156.7	156.6
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	156.3	156.8	155.7	156.2	157.1	157.4	158.8	149.4	149.8	149.0	149.4	150.2	150.5	152.0
Meats, poultry, fish, and eggs	266.0	263.0	264.0	264.2	264.2	263.8	261.5	265.8	262.8	263.9	264.0	263.9	263.6	261.3
Meats, poultry, and fish	274.3	270.3	271.7	271.4	271.4	270.5	268.7	273.9	270.0	271.4	271.1	271.0	270.2	268.3
Meats	277.2	272.2	273.2	272.8	273.3	272.7	270.2	276.5	271.8	272.9	272.4	272.9	272.1	269.7
Beef and veal	288.2	271.3	272.2	272.8	279.4	281.3	278.6	289.0	271.8	272.9	273.5	280.0	282.0	279.2
Ground beef other than canned	274.6	262.7	261.8	263.6	267.0	266.9	264.5	275.9	263.7	263.0	264.7	268.0	268.3	265.7
Chuck roast	295.4	281.7	286.9	284.8	291.2	289.5	277.4	304.9	290.4	295.9	293.0	300.2	298.8	285.7
Round roast	257.0	243.3	242.6	239.9	251.1	249.6	245.6	260.1	246.6	245.3	242.8	254.0	252.3	249.1
Round steak	278.8	255.1	259.8	257.9	263.9	268.8	262.1	277.2	253.0	258.0	257.1	262.0	267.7	260.5
Sirloin steak	294.1	253.1	260.3	262.8	274.8	284.3	286.1	295.3	254.5	261.7	264.5	276.0	285.9	287.5
Other beef and veal (12/77 = 100)	173.3	163.7	163.5	164.4	168.3	170.2	170.5	175.9	162.1	162.1	163.0	166.8	168.6	169.1
Pork	259.5	272.0	273.6	271.1	262.1	257.3	254.1	258.9	271.4	272.9	270.4	261.7	256.8	253.9
Bacon	280.7	290.8	294.5	288.7	276.6	272.5	267.4	285.3	295.5	299.5	293.1	281.4	276.8	271.9
Chops	241.2	245.6	252.1	246.4	241.8	237.7	234.3	239.6	243.9	250.3	244.7	239.7	235.9	232.5
Ham other than canned (12/77 = 100)	112.6	129.2	125.0	125.6	116.7	112.0	110.3	109.6	126.0	121.7	122.4	113.9	109.3	107.5
Sausage	326.3	333.6	333.9	336.9	332.5	330.6	326.5	327.2	335.0	334.8	337.0	333.1	331.1	327.3
Canned ham	253.2	275.2	276.2	277.3	272.0	266.6	260.9	256.4	279.7	280.6	282.2	277.1	271.6	266.4
Other pork (12/77 = 100)	145.4	147.9	150.4	148.1	143.5	141.4	141.7	144.7	147.1	149.5	147.3	142.8	140.6	141.1
Other meats	268.5	269.3	269.2	269.7	268.6	267.7	267.4	267.8	268.7	269.0	269.3	268.3	267.3	266.9
Frankfurters	268.8	269.7	269.4	270.8	267.4	266.7	265.8	268.3	268.5	268.6	270.1	266.4	265.2	264.9
Bologna, liverwurst, and salami (12/77 = 100)	154.6	154.0	154.5	155.2	154.4	154.2	155.6	154.6	153.9	154.5	155.1	154.3	154.1	155.6
Other lunchmeats (12/77 = 100)	135.5	139.9	139.7	139.0	139.7	137.7	136.6	133.4	137.7	137.8	137.0	137.7	135.8	134.6
Lamb and organ meats (12/77 = 100)	143.1	137.4	137.2	138.2	137.0	139.1	139.3	146.5	140.3	140.1	140.9	140.0	142.2	142.3
Poultry	197.5	191.3	194.0	193.7	191.0	192.0	193.6	195.8	189.4	191.9	191.6	189.0	190.1	191.8
Fresh whole chicken	199.1	186.8	190.6	190.7	184.5	187.7	192.1	197.0	185.0	188.4	188.4	182.3	185.7	190.4
Fresh and frozen chicken parts (12/77 = 100)	129.3	125.0	126.2	126.6	125.7	126.6	126.3	127.5	123.5	124.6	125.1	124.2	124.9	124.7
Other poultry (12/77 = 100)	124.6	126.3	127.7	126.6	127.2	125.4	125.3	124.3	125.7	127.1	125.6	126.6	124.9	124.7
Fish and seafood	365.2	376.7	379.2	380.1	379.4	372.6	371.2	364.2	375.1	377.5	378.9	377.5	371.5	369.8
Canned fish and seafood	139.9	140.2	139.1	138.3	137.9	137.2	138.6	139.4	139.5	138.5	137.8	137.4	136.8	138.1
Fresh and frozen fish and seafood (12/77 = 100)	138.6	145.4	147.6	148.6	148.4	144.7	143.0	138.3	145.0	147.1	148.3	147.7	144.4	142.5
Eggs	162.5	172.9	169.3	175.0	174.9	181.8	173.8	163.4	173.7	170.0	175.8	175.8	182.7	174.8
Dairy products	246.3	249.5	249.7	249.6	250.1	250.3	249.8	245.7	248.9	249.1	248.9	249.4	249.6	249.1
Fresh milk and cream (12/77 = 100)	135.2	136.7	136.7	136.8	136.6	136.5	136.3	134.7	136.2	136.2	136.3	136.1	136.0	135.9
Fresh whole milk	221.3	223.7	223.4	223.4	223.5	223.2	222.9	220.4	222.9	222.6	222.6	222.7	222.3	222.1
Other fresh milk and cream (12/77 = 100)	135.4	136.9	137.3	137.7	136.7	136.8	136.8	134.9	136.3	136.8	137.1	136.1	136.3	136.3
Processed dairy products	144.9	147.1	147.4	147.2	148.1	148.6	148.1	145.2	147.4	147.7	147.4	148.4	148.8	148.3
Butter	250.9	253.4	253.6	253.5	253.9	254.4	252.7	253.4	255.9	256.2	256.1	256.5	256.9	255.4
Cheese (12/77 = 100)	143.2	145.2	145.5	145.5	146.5	146.5	146.0	143.6	145.5	156.8	145.8	146.8	146.8	146.3
Ice cream and related products (12/77 = 100)	149.6	152.5	153.1	150.7	152.0	153.6	154.0	148.7	151.6	152.2	149.8	151.1	152.7	153.0
Other dairy products (12/77 = 100)	138.7	141.6	141.6	143.9	144.5	144.6	143.1	139.4	142.3	142.3	144.6	145.3	145.3	143.7
Fruits and vegetables	305.6	276.2	278.1	286.9	294.9	298.2	298.2	301.0	272.6	274.5	282.9	291.1	294.5	294.5
Fresh fruits and vegetables	325.9	269.2	272.0	288.6	304.3	311.0	310.9	318.6	264.3	267.1	283.0	298.9	305.5	305.4
Fresh fruits	340.8	268.3	270.5	282.8	291.9	300.6	310.5	327.0	258.9	261.0	272.5	282.2	290.6	299.7
Apples	321.4	244.2	244.0	249.3	259.9	266.4	281.9	321.9	244.8	243.9	249.6	260.5	266.8	283.4
Bananas	267.9	241.3	254.0	257.1	295.1	312.5	318.1	265.5	239.9	250.9	254.6	293.0	311.1	316.7
Oranges	406.8	292.2	286.3	299.1	301.3	297.2	309.1	367.5	267.5	263.1	272.7	274.4	270.2	280.1
Other fresh fruits (12/77 = 100)	177.1	143.1	145.1	154.4	155.8	162.4	166.3	170.3	138.0	139.8	149.0	150.9	156.9	160.0
Fresh vegetables	311.9	270.0	273.4	294.0	316.0	320.8	311.3	311.1	269.2	272.7	292.5	314.0	319.2	310.8
Potatoes	344.9	236.2	240.6	241.1	258.7	282.3	304.7	339.7	231.5	236.5	236.1	253.3	277.3	301.3
Lettuce	269.1	301.3	249.0	247.9	316.0	340.9	363.5	270.0	303.4	250.0	246.6	311.6	338.0	360.8
Tomatoes	275.6	236.8	265.0	352.2	327.5	307.8	262.3	279.9	241.5	269.0	358.1	332.1	313.2	267.1
Other fresh vegetables (12/77 = 100)	177.5	156.0	165.6	175.8	186.9	184.1	169.4	177.0	155.3	165.2	174.9	186.4	183.4	169.5
Processed fruits and vegetables	285.9	286.6	287.4	287.6	287.1	286.7	286.9	283.9	284.3	285.1	285.3	284.8	284.6	284.7
Processed fruits (12/77 = 100)	148.0	150.1	150.8	151.3	150.6	150.3	149.7	147.6	149.8	150.5	151.0	150.2	150.0	149.3
Frozen fruit and fruit juices (12/77 = 100)	144.4	144.7	144.6	145.0	143.9	142.3	140.0	143.4	143.8	143.7	144.1	143.0	141.4	139.0
Fruit juices other than frozen (12/77 = 100)	151.7	154.1	155.3	156.6	155.7	155.7	155.1	150.7	153.1	154.4	155.6	154.6	154.7	154.0
Canned and dried fruits (12/77 = 100)	147.0	150.4	151.0	151.0	150.8	151.3	152.0	147.6	151.1	151.7	151.5	151.4	151.8	152.6
Processed vegetables (12/77 = 100)	139.3	137.9	138.1	137.7	138.0	137.9	138.7	138.2	136.7	136.9	136.6	136.8	136.8	137.5
Frozen vegetables (12/77 = 100)	145.6	149.7	151.2	149.7	150.9	151.2	151.4	146.9	151.2	152.7	151.3	152.5	152.8	153.1

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1982	1983						1982	1983					
	June	Jan.	Feb.	Mar.	Apr.	May	June	June	Jan.	Feb.	Mar.	Apr.	May	June
FOOD AND BEVERAGES—Continued														
Food—Continued														
Food at home—Continued														
Fruits and vegetables—Continued														
Cut corn and canned beans except lima (12/77 = 100)	141.1	139.5	138.5	138.9	139.6	138.4	140.5	138.8	137.0	136.2	136.4	137.1	136.2	138.1
Other canned and dried vegetables (12/77 = 100)	135.2	131.0	131.1	131.1	130.6	130.8	131.2	133.8	129.6	129.8	129.7	129.2	129.5	129.8
Other foods at home	332.6	337.1	338.2	339.1	339.2	339.1	338.8	333.5	337.9	339.1	339.9	340.0	339.8	339.5
Sugar and sweets	366.8	371.5	370.7	372.8	373.2	373.1	374.5	366.9	371.4	370.6	372.5	373.0	372.9	374.1
Candy and chewing gum (12/77 = 100)	150.4	149.8	149.6	150.3	150.8	151.0	151.3	150.5	149.8	149.6	150.3	150.8	151.0	151.2
Sugar and artificial sweeteners (12/77 = 100)	161.4	167.0	165.9	166.9	168.3	167.2	168.5	162.8	168.5	167.1	168.3	169.7	168.7	169.8
Other sweets (12/77 = 100)	148.9	152.0	152.3	153.4	151.4	152.0	152.5	146.9	149.8	150.2	151.0	149.1	149.6	150.2
Fats and oils (12/77 = 100)	260.7	259.3	258.0	258.4	258.6	258.3	258.3	260.7	259.3	258.1	258.4	258.4	258.2	258.0
Margarine	261.2	259.4	255.9	255.8	259.6	257.1	259.3	260.8	258.5	255.3	254.5	258.1	255.5	257.5
Nondairy substitutes and peanut butter (12/77 = 100)	156.5	151.6	151.8	151.4	151.5	150.7	149.4	154.9	150.0	150.1	149.7	149.9	149.1	147.7
Other fats, oils, and salad dressings (12/77 = 100)	129.1	130.2	129.8	130.4	129.5	130.2	130.1	129.7	130.7	130.3	131.0	130.1	130.8	130.7
Nonalcoholic beverages	424.8	431.1	432.2	432.7	431.8	431.1	431.0	426.6	432.8	433.9	434.5	433.5	432.4	432.6
Cola drinks, excluding diet cola	305.9	312.9	312.5	314.1	313.1	311.5	312.3	303.3	310.3	310.0	311.5	310.4	308.5	309.7
Carbonated drinks, including diet cola (12/77 = 100)	143.1	145.2	147.4	146.7	146.8	147.3	146.3	141.2	142.8	144.9	144.5	144.5	144.9	143.9
Roasted coffee	365.1	365.0	365.9	363.2	361.4	360.8	359.3	360.1	359.9	360.5	357.9	356.2	355.6	354.3
Freeze dried and instant coffee	344.3	348.2	349.3	349.2	349.5	351.6	352.2	343.8	347.8	349.0	348.8	349.0	351.0	351.6
Other noncarbonated drinks (12/77 = 100)	140.0	141.0	140.6	141.1	140.6	140.1	140.5	140.2	141.3	140.8	141.3	140.9	140.4	140.7
Other prepared foods	267.8	272.6	275.1	276.0	276.9	277.2	276.1	269.5	274.2	276.8	277.5	278.5	278.8	269.5
Canned and packaged soup (12/77 = 100)	136.3	138.1	139.0	140.0	140.9	141.6	141.6	138.3	140.1	141.1	141.9	142.7	143.6	143.4
Frozen prepared foods (12/77 = 100)	147.3	150.6	152.0	153.1	155.0	154.4	153.8	146.8	150.0	151.3	152.2	154.2	153.7	153.1
Snacks (12/77 = 100)	153.2	154.0	157.6	157.9	159.2	160.6	159.0	155.2	156.0	159.6	160.1	161.2	162.7	161.1
Seasonings, olives, pickles, and relish (12/77 = 100)	153.3	159.5	161.1	161.6	159.3	159.3	158.6	152.4	158.5	160.1	160.4	158.3	158.4	157.6
Other condiments (12/77 = 100)	150.6	153.8	154.9	154.9	155.3	155.6	155.4	152.4	155.6	156.8	156.7	157.1	157.4	157.2
Miscellaneous prepared foods (12/77 = 100)	148.3	151.1	151.5	151.7	151.6	152.0	151.2	148.5	151.4	151.7	151.9	151.8	152.3	151.5
Other canned and packaged prepared foods (12/77 = 100)	144.5	146.1	146.4	146.8	147.4	146.2	146.2	145.8	147.3	147.7	148.0	148.7	147.5	143.6
Food away from home	305.9	314.5	315.2	316.5	318.0	318.6	319.3	309.0	317.7	318.4	319.7	321.3	321.9	322.5
Lunch (12/77 = 100)	148.9	153.1	153.3	153.7	154.4	154.6	154.9	150.5	154.8	155.0	155.3	156.1	156.2	156.5
Dinner (12/77 = 100)	147.4	151.3	151.7	152.0	152.5	152.7	153.1	149.1	153.0	153.4	153.7	154.2	154.4	154.8
Other meals and snacks (12/77 = 100)	149.2	154.0	154.5	156.0	157.1	157.9	158.2	149.9	154.6	155.1	156.5	157.7	158.4	158.7
Alcoholic beverages	208.4	211.6	213.3	215.1	216.1	216.6	217.0	210.4	213.7	215.6	217.3	218.5	219.1	219.6
Alcoholic beverages at home (12/77 = 100)	135.0	136.5	137.7	139.1	139.7	140.0	140.3	136.3	137.8	139.2	140.6	141.3	141.7	142.0
Beer and ale	210.6	213.3	217.4	219.8	222.5	222.7	224.1	209.6	212.5	216.4	218.6	221.2	221.5	222.8
Whiskey	148.3	150.5	150.9	151.3	151.4	151.3	151.6	149.1	151.2	151.6	151.9	151.9	151.9	152.1
Wine	235.3	235.6	234.7	239.1	236.3	239.1	236.3	242.7	243.0	241.8	246.8	243.9	247.0	244.1
Other alcoholic beverages (12/77 = 100)	119.7	120.6	120.7	121.5	121.5	121.5	122.1	119.6	120.6	120.5	121.2	121.3	121.4	122.0
Alcoholic beverages away from home (12/77 = 100)	140.3	144.8	145.4	145.7	146.5	147.0	147.1	141.6	146.0	146.6	146.9	147.7	148.2	148.3
HOUSING	317.5	317.9	318.5	318.6	320.3	321.8	323.1	317.5	317.0	317.6	319.2	320.3	321.3	322.3
Shelter (CPI-U)	340.9	338.3	339.2	339.3	341.7	342.7	343.6	....	....	....	....	....	....	....
Renters' costs	....	100.8	101.2	101.4	101.8	102.2	102.5	....	....	....	....	....	....	....
Rent, residential	222.6	232.2	233.1	233.6	234.5	235.1	235.9	....	....	....	....	....	....	....
Other renters' costs	327.3	339.2	340.8	340.6	343.7	347.5	347.9	....	....	....	....	....	....	....
Homeowners' costs[2]	....	100.7	100.9	100.9	101.7	102.0	102.2	....	....	....	....	....	....	....
Owners' equivalent rent	....	100.7	100.9	100.8	101.7	101.9	102.2	....	....	....	....	....	....	....
Household insurance	....	100.9	100.9	101.5	102.0	102.4	....	....	....	....	....	....	....	....
Maintenance and repairs	336.1	342.9	339.4	339.9	343.6	344.3	345.1	....	....	....	....	....	....	....
Maintenance and repair services	369.1	380.6	373.6	376.7	382.8	382.7	381.6	....	....	....	....	....	....	....
Maintenance and repair commodities	258.3	259.4	259.3	257.7	258.7	260.0	262.3	....	....	....	....	....	....	....
Shelter (CPI-W)	....	....	....	....	....	....	....	342.6	337.9	338.8	341.1	342.4	342.9	343.3
Rent, residential	....	....	....	....	....	....	....	222.1	231.7	232.5	233.1	234.0	234.6	235.3
Other renters' costs	....	....	....	....	....	....	....	326.3	337.3	339.0	339.0	342.3	345.5	345.8
Lodging while out of town	....	....	....	....	....	....	....	349.4	350.8	353.6	353.1	358.2	363.0	363.5
Tenants' insurance (12/77 = 100)	....	....	....	....	....	....	....	144.8	151.5	151.5	152.6	153.2	154.0	153.5
Homeownership	....	....	....	....	....	....	....	386.0	375.9	376.9	379.9	381.2	381.7	381.9
Home purchase	....	....	....	....	....	....	....	284.4	291.9	293.7	298.9	301.0	303.9	303.5
Financing, taxes, and insurance	....	....	....	....	....	....	....	529.7	490.2	491.3	491.8	492.2	489.1	490.0
Property insurance	....	....	....	....	....	....	....	402.7	414.5	417.9	419.2	422.3	426.3	430.6
Property taxes	....	....	....	....	....	....	....	220.7	230.6	231.4	231.7	232.9	233.8	234.6
Contracted mortgage interest costs	....	....	....	....	....	....	....	690.0	624.0	625.1	625.7	625.5	620.1	620.8
Mortgage interest rates	....	....	....	....	....	....	....	240.2	212.0	211.1	207.5	206.0	202.4	203.0
Maintenance and repairs	....	....	....	....	....	....	....	332.4	337.8	336.2	337.5	339.0	339.9	341.0
Maintenance and repair services	....	....	....	....	....	....	....	370.0	377.3	374.5	376.6	378.9	379.5	380.0
Maintenance and repair commodities	....	....	....	....	....	....	....	252.1	253.6	254.5	254.2	253.9	255.6	257.5
Paint and wallpaper, supplies, tools, and equipment (12/77 = 100)	....	....	....	....	....	....	....	146.0	148.2	148.0	146.0	145.7	148.1	149.4
Lumber, awnings, glass, and masonry (12/77 = 100)	....	....	....	....	....	....	....	122.1	120.5	122.2	124.1	123.4	124.3	124.2
Plumbing, electrical, heating, and cooling supplies (12/77 = 100)	....	....	....	....	....	....	....	136.0	137.3	136.6	137.5	137.4	138.0	138.8
Miscellaneous supplies and equipment (12/77 = 100)	....	....	....	....	....	....	....	140.6	141.3	142.2	142.4	143.1	141.3	144.1

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1982	1983						1982	1983					
	June	Jan.	Feb.	Mar.	Apr.	May	June	June	Jan.	Feb.	Mar.	Apr.	May	June
Fuel and other utilities	352.2	365.4	364.6	363.8	363.6	369.3	373.6	353.6	366.8	365.9	365.2	365.1	370.8	375.5
Fuels	448.4	463.5	461.5	459.7	459.2	468.3	475.2	448.3	463.3	461.2	459.5	459.3	468.2	475.6
Fuel oil, coal, and bottled gas	656.6	671.1	654.0	625.3	610.6	621.0	620.0	659.7	673.4	656.0	627.3	612.8	623.4	622.4
Fuel oil	684.8	689.3	669.7	636.4	618.4	629.6	628.5	687.5	691.2	671.3	637.9	620.4	631.8	630.7
Other fuels (6/78 = 100)	165.6	188.4	187.1	185.9	186.7	188.6	188.6	166.9	189.5	188.1	187.0	187.7	189.7	189.5
Gas (piped) and electricity	398.9	413.5	414.5	418.0	420.5	429.1	437.4	398.2	412.8	413.8	417.5	420.1	428.5	437.4
Electricity	327.5	319.2	320.1	321.2	319.9	324.7	337.4	327.7	318.3	319.4	320.7	319.3	324.2	337.9
Utility (piped) gas	497.2	559.1	560.1	568.3	578.3	593.9	591.8	493.8	556.9	557.6	565.9	576.5	591.0	588.8
HOUSING														
Fuel and other utilities														
Other utilities and public services	200.4	210.1	210.9	211.4	211.7	212.5	213.2	201.1	210.9	211.6	212.2	212.5	213.4	214.1
Telephone services	163.2	171.4	171.7	172.1	171.9	172.8	173.4	163.5	171.7	172.1	172.5	172.4	173.2	173.9
Local charges (12/77 = 100)	131.2	140.6	139.9	140.3	139.9	140.9	141.8	131.6	140.8	140.2	140.6	140.3	141.3	142.2
Interstate toll calls (12/77 = 100)	119.6	121.0	121.8	121.8	121.8	121.8	121.8	120.1	121.5	122.2	122.2	122.3	122.3	122.2
Intrastate toll calls (12/77 = 100)	109.8	114.0	115.9	116.3	116.6	117.1	117.4	109.4	113.9	115.8	116.2	116.6	117.1	117.4
Water and sewerage maintenance	324.9	341.6	343.9	345.6	347.5	348.2	348.9	328.0	344.8	347.2	349.0	350.8	351.8	352.6
Household furnishings and operations	233.7	235.8	236.7	237.6	239.9	238.4	238.6	230.4	232.6	233.4	234.6	236.0	235.4	235.5
Housefurnishings	194.7	194.9	195.9	197.1	198.7	197.6	197.8	192.6	193.0	193.8	195.3	196.7	195.8	195.9
Textile housefurnishings	220.2	221.9	228.2	230.3	229.4	228.7	226.8	223.3	224.5	232.2	234.8	233.6	232.7	230.5
Household linens (12/77 = 100)	134.6	131.5	139.0	136.7	134.2	136.2	135.4	135.9	132.6	140.7	137.9	135.3	137.3	136.4
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100)	140.1	145.6	145.7	150.9	152.4	149.4	147.7	143.0	148.6	149.5	156.2	157.8	154.1	152.1
Furniture and bedding	214.4	213.9	213.8	215.8	221.6	220.0	220.0	210.9	210.4	210.2	213.2	218.1	216.7	216.5
Bedroom furniture (12/77 = 100)	143.0	146.1	146.6	148.9	152.9	151.9	152.3	139.7	142.6	142.7	146.0	149.4	148.8	148.9
Sofas (12/77 = 100)	117.5	117.3	116.5	118.3	118.9	118.1	118.0	118.2	117.9	117.1	118.9	119.1	118.6	118.3
Living room chairs and tables (12/77 = 100)	123.2	121.6	121.0	122.0	126.2	123.9	124.2	123.3	122.0	121.5	122.6	126.6	124.5	124.9
Other furniture (12/77 = 100)	142.3	139.4	139.8	139.7	144.6	144.5	143.8	137.7	134.6	135.1	136.0	140.2	139.8	139.0
Appliances including TV and sound equipment	151.4	151.9	151.5	151.9	152.3	151.2	151.4	151.2	151.8	151.3	151.7	152.4	151.7	151.9
Television and sound equipment	108.6	107.0	107.1	106.9	107.1	106.1	105.9	107.7	106.1	106.1	105.9	106.2	105.1	105.0
Television	104.4	102.3	101.9	101.2	100.9	100.2	100.8	103.1	101.1	100.5	99.9	99.7	99.0	99.6
Sound equipment (12/77 = 100)	113.5	112.2	112.8	113.1	113.6	112.3	111.6	112.7	111.3	111.8	111.9	112.6	111.3	110.5
Household appliances	183.8	187.6	186.3	187.7	188.5	187.8	188.4	184.2	187.9	186.7	188.0	188.9	188.9	189.5
Refrigerators and home freezers	187.7	193.2	192.2	193.3	193.3	194.1	194.0	193.2	199.2	198.1	198.9	199.2	200.3	200.2
Laundry equipment	136.7	141.5	141.8	142.5	142.7	143.5	144.6	136.9	142.1	142.3	142.9	143.6	144.6	145.2
Other household appliances (12/77 = 100)	123.9	124.7	123.6	124.6	125.4	124.3	124.7	122.3	122.8	121.5	122.7	123.5	122.6	123.2
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100)	123.1	123.7	122.3	124.2	125.0	123.2	123.9	121.6	121.9	120.2	122.4	123.3	121.7	122.8
Office machines, small electric appliances, and air conditioners (12/77 = 100)	124.8	125.8	125.1	125.2	126.1	125.5	125.7	123.0	123.8	122.9	122.9	123.8	123.6	123.7
Other household equipment (12/77 = 100)	139.0	139.1	140.2	140.7	140.4	139.9	141.2	136.9	137.0	137.9	138.6	138.4	138.0	139.0
Floor and window coverings, infants', laundry, cleaning, and outdoor equipment (12/77 = 100)	142.3	141.2	143.3	143.0	143.2	143.2	142.2	134.9	133.2	134.9	135.0	135.3	135.5	134.3
Clocks, lamps, and decor items (12/77 = 100)	132.2	130.8	132.4	133.9	133.3	132.5	133.0	128.2	126.1	127.3	129.2	128.3	128.3	128.8
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100)	145.6	145.9	145.7	146.4	145.5	145.1	149.2	141.4	141.9	141.8	142.6	142.0	141.6	145.0
Lawn equipment, power tools, and other hardware (12/77 = 100)	131.9	134.1	135.4	135.5	135.9	135.1	135.0	137.1	139.3	140.6	140.9	141.4	140.2	139.9
Housekeeping supplies	286.5	294.0	294.8	295.4	296.9	296.6	296.3	283.1	290.7	291.6	292.2	293.9	293.6	293.2
Soaps and detergents	280.8	288.9	290.1	292.3	294.5	294.5	294.9	277.0	285.0	286.1	288.1	290.4	290.6	290.9
Other laundry and cleaning products (12/77 = 100)	143.8	149.0	149.1	149.5	150.6	150.3	151.5	142.7	147.7	147.9	148.3	149.5	149.2	150.4
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100)	146.5	150.2	150.4	149.3	148.8	148.0	147.3	146.1	150.3	150.5	149.1	148.9	148.0	147.4
Stationery, stationery supplies, and gift wrap (12/77 = 100)	132.5	138.1	138.6	139.3	139.6	139.8	139.9	136.0	141.1	141.7	142.3	142.7	142.9	142.8
Miscellaneous household products (12/77 = 100)	150.2	153.5	154.3	154.4	154.5	154.4	154.0	144.9	148.3	149.1	149.2	149.2	149.1	148.7
Lawn and garden supplies (12/77 = 100)	144.0	144.3	144.4	145.0	147.2	147.3	145.8	136.7	137.0	137.4	138.5	141.4	141.4	139.4
Housekeeping services	311.7	315.4	315.9	316.4	317.1	318.0	318.5	310.9	315.0	315.6	316.1	316.5	317.5	318.0
Postage	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5
Moving, storage, freight, household laundry, and drycleaning services (12/77 = 100)	154.2	159.3	159.8	160.6	160.8	161.7	162.3	154.5	159.5	160.0	160.7	160.8	161.7	162.3
Appliance and furniture repair (12/77 = 100)	137.0	140.4	141.2	141.5	141.7	142.9	143.3	135.5	138.7	139.5	139.8	140.0	141.2	141.6
APPAREL AND UPKEEP	190.8	191.0	192.0	194.5	195.5	196.1	195.6	189.6	190.0	191.0	194.0	194.8	195.3	194.7
Apparel commodities	180.0	179.2	180.2	182.8	183.7	184.2	183.6	179.4	178.7	179.7	182.9	183.5	183.9	183.2
Apparel commodities less footwear	175.6	175.0	176.0	178.9	179.4	180.2	179.7	174.7	174.3	175.3	178.9	179.4	179.8	179.2
Men's and boys'	183.1	184.9	184.4	186.7	187.8	189.5	189.1	183.2	185.2	184.8	187.0	187.9	189.7	189.0
Men's (12/77 = 100)	115.4	116.8	116.2	117.1	117.9	119.2	118.8	115.8	117.4	116.9	117.6	118.3	119.9	119.2
Suits, sport coats, and jackets (12/77 = 100)	107.3	106.5	106.7	109.1	c110.3	110.9	111.2	100.6	99.9	100.2	102.1	103.5	103.9	103.9
Coats and jackets	99.5	98.8	98.1	100.0	100.0	101.1	100.7	101.1	100.5	99.9	102.2	102.4	104.3	103.3
Furnishings and special clothing (12/77 = 100)	138.0	142.2	142.6	141.4	142.8	144.5	144.3	134.7	138.7	139.1	137.6	138.6	140.4	140.3
Shirts (12/77 = 100)	121.5	124.5	122.0	121.7	122.0	124.6	122.6	123.8	127.5	125.0	124.4	125.0	c127.6	125.8
Dungarees, jeans, and trousers (12/77 = 100)	109.7	111.0	110.5	111.5	112.0	113.2	113.0	115.2	116.5	116.1	117.4	117.7	119.1	118.6
Boys' (12/77 = 100)	118.5	118.9	119.3	123.2	123.5	123.3	123.7	116.9	117.2	117.7	121.4	121.5	121.4	121.6
Coats, jackets, sweaters, and shirts (12/77 = 100)	110.7	108.9	108.1	115.5	115.2	115.4	116.3	111.5	110.4	109.3	116.4	115.7	116.1	116.6
Furnishings (12/77 = 100)	131.9	132.0	132.5	134.0	134.9	136.1	135.8	128.0	128.0	128.4	129.6	130.4	131.6	131.2
Suits, trousers, sport coats, and jackets (12/77 = 100)	119.4	121.5	122.9	124.9	125.5	124.4	124.7	117.1	118.6	120.2	122.3	122.6	121.7	121.9
Women's and girls'	157.3	153.9	155.7	160.0	160.6	160.1	159.7	158.4	155.4	157.2	162.8	163.1	162.4	161.5
Women's (12/77 = 100)	104.4	101.8	103.2	106.2	106.5	106.1	106.1	105.4	102.9	104.4	108.4	108.3	107.6	107.4
Coats and jackets	156.4	158.1	160.9	170.1	168.1	164.7	164.7	162.9	161.4	165.5	178.4	177.1	172.7	171.8
Dresses	160.1	152.9	154.9	158.5	161.5	162.7	164.3	145.4	139.8	140.6	144.4	145.7	146.7	148.8

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1982	1983						1982	1983					
	June	Jan.	Feb.	Mar.	Apr.	May	June	June	Jan.	Feb.	Mar.	Apr.	May	June
APPAREL AND UPKEEP—Continued														
Apparel Commodities—Continued														
Apparel commodities less footwear—Continued														
Separates and sportswear (12/77 = 100)	100.2	93.7	94.6	98.5	100.1	98.1	97.7	101.0	94.4	95.3	99.2	101.0	98.9	98.4
Underwear, nightwear, and hosiery (12/77 = 100)	127.9	128.8	130.0	131.0	131.1	133.0	132.8	127.6	128.4	129.7	130.7	130.8	132.7	132.4
Suits (12/77 = 100)	78.6	76.9	79.7	83.7	80.5	77.8	77.2	92.7	91.8	95.6	104.7	99.4	95.9	93.9
Girls' (12/77 = 100)	105.8	105.1	105.1	107.6	108.2	108.4	106.2	105.2	105.0	104.9	108.0	109.2	109.4	107.4
Coats, jackets, dresses, and suits (12/77 = 100)	95.1	95.8	96.5	98.4	97.1	96.3	96.3	92.4	95.2	95.8	97.6	98.5	97.3	96.5
Separates and sportswear (12/77 = 100)	106.0	102.1	101.5	105.6	107.5	108.1	103.5	107.7	102.9	102.0	107.5	109.1	110.3	106.1
Underwear, nightwear, hosiery, and accessories (12/77 = 100)	122.9	125.7	125.8	126.4	127.8	128.6	128.6	121.9	124.9	124.9	125.6	126.9	127.4	127.5
Infants' and toddlers'	268.7	277.1	278.8	280.1	280.4	280.7	283.0	278.2	287.5	289.5	291.1	291.0	290.9	293.4
Other apparel commodities	209.9	211.5	213.4	213.4	214.4	215.0	214.0	198.9	200.1	201.7	201.9	202.5	203.3	203.0
Sewing materials and notions (12/77 = 100)	119.2	120.4	120.5	120.4	121.8	122.9	122.4	117.6	118.5	118.5	118.4	119.4	120.6	120.5
Jewelry and luggage (12/77 = 100)	142.8	143.7	145.4	145.4	145.8	145.9	145.1	133.6	134.4	135.9	136.1	136.2	136.5	136.2
Footwear	206.6	204.8	205.6	206.6	207.5	208.0	206.8	206.7	204.6	205.2	206.1	207.2	207.7	206.6
Men's (12/77 = 100)	132.1	131.4	132.2	133.2	133.9	133.7	133.7	134.1	133.0	133.9	134.8	135.6	135.4	135.5
Boys' and girls' (12/77 = 100)	132.1	130.4	131.2	131.1	130.7	131.7	130.7	134.8	132.9	133.4	133.2	133.4	134.3	133.1
Women's (12/77 = 100)	125.8	124.5	124.6	125.5	126.5	126.9	125.6	121.6	120.4	120.4	121.1	122.0	122.5	121.3
Apparel services	275.3	283.9	285.4	286.7	288.7	290.3	290.9	273.0	282.2	283.6	284.9	287.1	288.6	289.2
Laundry and drycleaning other than coin operated (12/77 = 100)	164.8	169.6	170.3	170.8	171.7	172.8	173.5	163.3	168.1	168.8	169.3	170.3	171.3	171.9
Other apparel services (12/77 = 100)	143.1	148.3	149.1	150.4	152.0	152.5	152.4	144.6	149.4	150.3	151.4	153.1	153.7	153.7
TRANSPORTATION	292.8	293.0	289.9	287.4	292.3	296.2	298.3	294.5	294.3	291.1	288.6	293.5	297.5	299.6
Private	288.9	288.4	285.2	282.7	287.5	291.7	293.8	291.6	290.9	287.6	285.0	289.9	294.1	296.3
New cars	198.1	201.0	201.3	201.2	201.1	201.6	201.6	197.9	200.8	201.0	200.9	200.7	201.3	201.2
Used cars	298.2	311.0	309.1	309.3	312.7	317.1	322.7	298.2	311.1	309.1	309.3	312.7	317.1	322.7
Gasoline	392.3	371.9	359.4	348.6	367.6	380.9	386.1	393.8	373.6	361.2	350.3	369.3	382.4	387.4
Automobile maintenance and repair	316.0	324.4	325.9	326.6	327.4	328.7	329.5	316.8	325.2	326.6	327.4	328.1	329.4	330.2
Body work (12/77 = 100)	156.3	162.2	162.7	163.6	164.7	165.5	166.4	154.7	161.1	161.5	162.5	163.4	164.3	165.3
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100)	151.6	155.4	156.1	156.3	157.3	157.7	157.7	155.7	159.4	160.1	160.3	161.2	161.6	161.7
Maintenance and servicing (12/77 = 100)	146.8	150.5	151.1	150.9	151.0	151.7	152.2	146.2	149.9	150.5	150.3	150.4	151.0	151.5
Power plant repair (12/77 = 100)	150.8	154.4	155.4	156.2	156.2	156.8	157.0	150.3	153.9	154.8	155.6	155.7	156.3	156.4
Other private transportation	258.7	259.9	259.7	259.2	258.4	258.7	258.1	261.8	261.5	261.1	260.5	259.3	259.6	258.9
Other private transportation commodities	217.5	215.6	215.0	213.3	212.2	210.9	210.4	220.0	218.0	217.4	215.8	214.7	213.3	212.9
Motor oil, coolant, and other products (12/77 = 100)	150.7	153.9	154.8	154.8	156.1	155.1	156.0	149.0	153.0	153.8	153.8	155.0	153.9	154.8
Automobile parts and equipment (12/77 = 100)	139.2	137.3	136.7	135.5	134.5	133.6	133.2	141.2	139.1	138.5	137.4	136.4	135.4	135.0
Tires	192.8	191.3	190.6	188.1	186.4	185.1	184.3	196.4	194.9	194.1	191.7	190.1	188.8	187.9
Other parts and equipment (12/77 = 100)	138.3	134.3	133.7	133.9	133.4	132.7	132.7	138.6	134.3	133.6	133.8	133.4	132.4	132.5
Other private transportation services	272.2	274.2	274.1	273.9	273.1	273.9	273.3	275.5	275.6	275.2	274.8	273.7	274.4	273.6
Automobile insurance	274.0	292.0	295.6	297.0	299.0	301.2	301.1	273.5	291.3	294.9	296.3	298.2	300.5	300.5
Automobile finance charges (12/77 = 100)	192.0	169.6	165.0	161.9	157.3	154.5	152.2	191.2	168.7	164.0	161.0	156.6	153.8	151.4
Automobile rental, registration, and other fees (12/77 = 100)	133.3	139.8	140.1	141.1	141.4	143.8	144.7	133.8	140.5	140.8	141.9	142.2	144.9	146.0
State registration	174.3	184.6	184.9	186.6	186.6	192.3	192.3	173.9	184.0	184.3	186.3	186.3	192.1	192.1
Drivers' licenses (12/77 = 100)	127.7	132.8	133.5	133.9	133.9	133.9	150.3	127.9	133.1	133.7	134.1	134.1	134.1	150.6
Vehicle inspection (12/77 = 100)	126.7	128.6	128.6	129.2	131.1	131.2	131.2	128.3	129.9	129.9	130.5	132.4	132.5	132.5
Other vehicle-related fees (12/77 = 100)	149.3	155.8	156.2	157.0	157.6	158.5	159.0	156.3	163.9	164.1	165.1	165.4	166.5	167.0
Public	345.6	357.7	355.2	354.5	361.1	359.1	361.2	337.9	349.8	347.7	347.3	353.3	351.2	352.7
Airline fare	396.0	412.3	405.5	402.9	417.2	411.2	415.4	392.4	409.8	401.5	398.9	415.9	407.4	410.9
Intercity bus fare	363.7	381.8	383.8	389.4	394.6	401.7	403.9	365.4	383.3	385.4	392.0	396.9	403.0	405.2
Intracity mass transit	309.2	318.5	319.4	320.1	320.2	321.7	321.7	307.9	317.4	318.3	319.0	319.1	320.1	320.6
Taxi fare	298.0	300.9	301.2	300.8	302.0	302.1	301.0	307.6	310.5	310.8	310.4	311.4	311.6	311.0
Intercity train fare	338.2	351.8	351.8	351.9	352.0	352.3	353.2	338.2	352.3	352.2	352.3	352.5	352.7	353.6
MEDICAL CARE	326.4	347.8	351.3	352.3	353.5	354.3	355.4	324.8	345.3	348.9	350.0	351.2	352.1	353.3
Medical care commodities	205.6	215.3	216.7	218.6	221.2	222.5	223.2	206.3	215.9	217.2	219.0	221.6	222.8	223.6
Prescription drugs	191.8	204.1	205.9	208.7	211.6	212.9	213.7	192.7	205.3	207.1	209.9	212.8	214.1	214.8
Anti-infective drugs (12/77 = 100)	143.3	151.4	153.3	153.8	155.2	155.8	156.6	145.1	153.5	155.5	155.8	157.2	157.8	158.8
Tranquilizers and sedatives (12/77 = 100)	154.9	166.6	168.2	171.4	174.7	176.3	177.0	154.7	166.4	167.9	171.2	174.5	176.1	176.7
Circulatories and diuretics (12/77 = 100)	138.4	145.9	147.2	151.2	153.4	153.5	153.3	138.2	145.8	147.2	151.0	153.2	153.4	153.2
Hormones, diabetic drugs, biologicals, and prescription medical supplies (12/77 = 100)	177.2	186.6	189.0	192.4	196.1	197.8	198.1	178.6	188.0	190.8	194.2	198.1	199.7	199.9
Pain and symptom control drugs (12/77 = 100)	154.9	167.7	168.6	170.0	171.7	172.3	173.3	156.0	169.5	170.3	171.7	173.4	174.1	175.1
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100)	146.3	155.8	156.4	157.8	159.4	160.7	161.8	146.4	156.2	156.7	158.1	159.7	161.0	162.0
Nonprescription drugs and medical supplies (12/77 = 100)	146.3	151.0	151.6	152 3	153.8	154.7	155.2	147.1	151.8	152.4	153.1	154.6	155.4	156.0
Eyeglasses (12/77 = 100)	131.6	133.9	134.6	134.9	135.1	134.8	135.0	130.4	132.6	133.4	133.7	133.9	133.8	133.9
Internal and respiratory over-the-counter drugs	235.2	244.3	245.1	245.5	248.7	250.9	251.9	236.8	245.7	246.4	246.8	250.2	252.1	253.3
Nonprescription medical equipment and supplies (12/77 = 100)	141.1	145.3	146.1	148.0	149.4	150.0	150.4	142.0	146.3	147.4	149.4	150.6	151.3	151.4
Medical care services	353.0	377.4	381.5	382.2	382.8	383.5	384.6	350.7	374.0	378.2	379.0	379.7	380.5	381.7
Professional services	301.2	312.5	315.4	316.7	318.0	319.7	322.0	301.3	312.7	315.7	316.9	318.4	320.0	322.2
Physicians' services	326.4	341.3	344.8	346.4	348.2	349.4	351.7	329.4	344.6	348.2	349.8	351.8	353.9	355.3

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1982	1983						1982	1983					
	June	Jan.	Feb.	Mar.	Apr.	May	June	June	Jan.	Feb.	Mar.	Apr.	May	June
MEDICAL CARE—Continued														
Medical care service—Continued														
Professional services—Continued														
Dental services	283.9	291.6	294.0	294.6	295.7	298.6	301.2	282.1	289.3	291.8	292.3	293.4	296.1	298.9
Other professional services (12/77 = 100)	171.6	149.1	150.5	151.6	151.9	151.8	152.3	140.7	145.7	147.2	148.3	148.5	148.5	148.7
Other medical care services	415.7	455.9	461.3	461.4	461.1	460.5	460.4	412.1	451.3	457.0	457.1	456.9	456.4	456.4
Hospital and other medical services (12/77 = 100)	171.6	185.1	188.6	189.5	190.2	190.8	191.5	170.0	183.4	187.0	187.8	188.4	189.0	189.6
Hospital room	546.8	594.6	604.1	606.2	608.0	609.6	609.6	539.4	587.1	596.7	598.8	600.7	601.8	602.2
Other hospital and medical care services (12/77 = 100)	168.5	180.6	184.5	185.6	186.3	187.0	188.3	167.5	179.4	183.3	184.3	184.9	185.6	186.8
ENTERTAINMENT	235.6	241.5	243.1	244.6	244.6	244.8	245.4	232.3	237.7	239.5	240.8	241.1	241.3	241.9
Entertainment commodities	239.6	242.6	244.5	246.8	246.0	246.3	246.3	233.8	236.7	238.8	240.8	240.5	240.7	240.7
Reading materials (12/77 = 100)	149.4	156.1	156.1	159.3	158.4	159.7	158.5	148.6	155.5	155.5	158.7	157.8	159.1	158.0
Newspapers	283.9	295.7	296.5	299.6	300.2	301.6	302.0	283.4	295.6	296.4	299.8	300.4	301.7	302.0
Magazines, periodicals, and books (12/77 = 100)	155.0	162.6	162.2	167.1	164.8	166.8	164.2	154.8	162.6	162.1	167.3	164.8	167.0	164.2
Sporting goods and equipment (12/77 = 100)	132.7	131.5	133.4	134.2	133.6	133.2	134.0	125.3	124.4	127.0	127.2	127.5	127.3	127.7
Sport vehicles (12/77 = 100)	135.7	132.9	136.1	137.3	136.3	135.7	136.7	123.9	122.0	126.0	126.4	126.7	126.5	126.8
Indoor and warm weather sport equipment (12/77 = 100)	119.6	120.3	120.5	120.8	121.3	120.5	119.9	117.1	117.0	117.9	118.4	118.9	118.0	117.6
Bicycles	197.6	197.3	196.7	197.8	196.1	196.6	199.2	198.8	198.4	197.7	198.0	197.4	197.9	200.2
Other sporting goods and equipment (12/77 = 100)	127.9	131.4	132.1	131.6	132.0	132.2	132.2	128.3	130.9	131.9	131.5	132.0	132.3	132.2
Toys, hobbies, and other entertainment (12/77 = 100)	136.1	136.8	138.0	138.6	138.5	138.4	138.6	134.9	135.6	136.7	137.3	137.2	137.1	137.3
Toys, hobbies, and music equipment (12/77 = 100)	135.9	135.5	136.9	137.6	137.3	137.4	137.4	132.4	131.9	133.0	133.7	133.4	133.5	133.6
Photographic supplies and equipment (12/77 = 100)	130.3	129.9	131.2	131.6	131.6	131.7	131.4	131.5	131.0	132.3	132.8	132.6	132.6	132.4
Pet supplies and expenses (12/77 = 100)	140.6	144.2	144.9	145.6	145.8	145.1	145.9	141.5	145.1	145.9	146.5	146.9	146.1	146.9
Entertainment services	230.5	240.5	241.6	241.9	243.1	243.2	244.7	230.9	240.8	241.8	242.1	243.3	243.5	245.1
Fees for participant sports (12/77 = 100)	142.5	150.0	150.6	150.9	151.3	150.8	151.3	143.8	151.2	151.7	152.2	152.4	152.1	152.5
Admissions (12/77 = 100)	133.5	139.9	140.9	140.1	141.7	142.4	144.7	132.6	138.8	139.8	139.1	140.7	143.7	143.7
Other entertainment services (12/77 = 100)	127.9	129.8	130.3	131.0	131.6	131.9	131.8	128.7	130.6	131.2	131.8	132.4	132.6	132.6
OTHER GOODS AND SERVICES	255.8	279.9	281.6	281.9	283.2	283.6	284.5	253.1	277.8	279.6	280.0	281.4	281.8	282.8
Tobacco products	237.8	280.3	282.8	283.3	284.9	285.3	285.9	237.0	279.9	282.2	282.7	284.3	284.8	285.4
Cigarettes	240.7	287.6	290.0	290.4	292.0	292.4	293.1	239.9	286.5	288.8	289.3	290.9	291.5	292.0
Other tobacco products and smoking accessories (12/77 = 100)	141.8	145.8	147.8	148.6	149.6	149.6	149.9	142.0	145.8	147.7	148.5	149.5	149.6	149.8
Personal care	247.8	256.1	257.8	257.8	259.1	259.4	260.9	246.0	253.9	255.5	255.8	257.1	257.3	259.0
Toilet goods and personal care appliances	246.3	253.9	256.0	257.1	258.5	258.6	261.4	247.0	254.8	256.8	257.8	259.3	259.3	262.1
Products for the hair, hairpieces, and wigs (12/77 = 100)	143.2	147.1	148.1	148.5	150.9	150.8	151.7	142.6	146.5	147.4	147.8	150.3	150.0	150.9
Dental and shaving products (12/77 = 100)	150.5	157.6	159.3	160.4	160.5	161.2	162.5	148.9	155.9	157.8	158.9	158.9	159.6	160.8
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100)	139.6	144.0	145.6	146.0	145.6	145.1	148.5	140.1	144.8	146.4	146.7	146.3	145.7	149.2
Other toilet goods and small personal care appliances (12/77 = 100)	140.8	143.6	144.1	144.9	146.0	146.7	147.1	144.4	147.3	147.7	148.5	149.8	150.3	150.7
Personal care services	250.1	259.0	260.4	259.5	260.7	261.1	261.6	245.4	253.4	254.7	254.3	255.4	255.7	256.3
Beauty parlor services for women	252.3	263.3	264.4	262.4	264.2	264.5	265.0	245.9	255.8	256.8	255.5	257.2	257.4	258.0
Haircuts and other barber shop services for men (12/77 = 100)	139.4	142.0	143.1	143.7	143.8	144.1	144.4	138.2	140.8	141.9	142.6	142.7	143.0	143.2
Personal and educational expenses	293.3	322.1	323.3	323.9	324.9	325.6	326.0	295.2	323.6	325.0	325.7	326.8	327.7	328.1
Schoolbooks and supplies	264.6	288.4	292.0	292.3	292.5	292.9	293.6	268.8	292.4	296.0	296.3	296.5	296.8	297.6
Personal and educational services	300.3	330.2	331.0	331.5	332.7	333.5	333.8	302.0	331.5	332.5	333.2	334.5	335.5	335.8
Tuition and other school fees	151.5	167.3	167.4	167.4	167.6	167.7	167.6	152.1	167.7	167.9	167.9	168.2	168.2	168.2
College tuition (12/77 = 100)	151.2	166.9	167.0	167.0	167.4	167.4	167.3	151.4	167.0	167.1	167.1	167.5	167.5	167.4
Elementary and high school tuition (12/77 = 100)	152.2	168.7	168.8	168.8	168.8	168.9	168.9	152.9	169.7	169.8	169.8	169.8	169.9	169.9
Personal expenses (12/77 = 100)	164.5	178.8	179.6	181.2	183.1	185.1	186.1	164.6	177.9	179.5	181.1	183.1	185.3	186.2
Special indexes:														
Gasoline, motor oil, coolant, and other products	387.3	367.9	355.8	345.2	363.4	376.2	381.2	388.6	369.4	357.3	346.7	365.0	377.6	385.4
Insurance and finance	....	....	....	....	....	....	....	436.0	411.1	411.6	411.8	411.6	410.0	411.4
Utilities and public transportation	316.6	329.1	329.4	331.1	333.4	337.2	341.5	315.6	328.1	328.5	330.4	332.6	336.5	343.1
Housekeeping and home maintenance services	351.2	355.3	355.1	356.0	357.3	358.2	358.6	351.8	357.9	356.5	357.9	359.5	360.3	361.7

[1]Excludes motor oil, coolant, and other products as of January 1983.
[2]See box with "Price Data."

c = corrected.

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

[December 1977 = 100]

Category and group	Size class A (1.25 million or more)			Size class B (385,000–1,250 million)			Size class C (75,000–385,000)			Size class D (75,000 or less)		
	1983			1983			1983			1983		
	Feb.	Apr.	June	Feb.	Apr.	June	Feb.	Apr.	June	Feb.	Apr.	June
	Northeast											
EXPENDITURE CATEGORY												
All items	151.8	153.1	153.9	158.2	159.0	160.8	162.9	163.5	164.2	156.1	158.2	158.5
Food and beverages	146.0	147.0	147.4	144.2	146.2	146.8	149.8	151.1	150.6	144.0	145.8	146.3
Housing	156.7	158.0	158.9	168.8	169.1	170.7	176.2	176.4	176.7	163.1	165.1	163.9
Apparel and upkeep	120.3	122.6	122.6	121.9	122.4	124.4	126.6	128.5	128.9	124.3	130.2	129.5
Transportation	159.1	160.1	161.7	164.8	165.4	169.2	164.2	164.3	166.6	162.5	164.3	166.7
Medical care	158.1	159.6	160.9	161.6	163.0	163.5	165.5	166.0	166.7	164.1	165.8	168.5
Entertainment	141.6	143.1	144.1	139.1	139.1	138.8	140.0	139.8	142.1	147.2	146.5	148.1
Other goods and services	154.4	156.2	156.7	157.3	158.6	159.8	160.4	162.3	163.1	159.4	162.1	162.2
COMMODITY AND SERVICE GROUP												
Commodities	147.6	148.4	149.1	153.1	153.0	154.8	153.3	153.6	154.3	150.2	151.3	152.3
Commodities less food and beverages	148.4	149.0	150.0	157.1	155.7	158.3	154.5	154.3	155.8	152.7	153.4	154.8
Services	157.1	159.0	160.0	166.1	168.2	169.8	178.3	179.4	180.1	165.1	168.5	167.9
	North Central Region											
EXPENDITURE CATEGORY												
All items	162.4	163.6	165.2	159.6	161.1	162.0	155.8	157.3	158.3	156.6	158.1	159.3
Food and beverages	144.7	145.4	145.0	143.4	144.1	143.8	143.8	145.6	145.0	149.1	150.9	151.7
Housing	180.2	181.9	185.3	170.2	171.7	172.2	163.2	164.1	165.2	162.2	163.8	163.9
Apparel and upkeep	115.4	117.9	116.8	124.4	128.8	129.2	124.1	128.4	127.0	122.0	123.5	122.2
Transportation	160.7	161.7	164.2	162.1	164.0	167.1	162.0	163.9	167.1	160.6	161.2	165.7
Medical care	164.2	165.3	166.1	167.7	168.3	168.5	164.7	165.8	166.3	171.0	172.2	173.1
Entertainment	141.3	141.9	141.9	135.9	136.7	136.9	144.3	145.9	147.3	135.2	136.5	137.1
Other goods and services	155.4	156.2	156.7	167.5	167.4	168.5	152.9	152.6	153.8	163.3	165.2	166.3
COMMODITY AND SERVICE GROUP												
Commodities	151.2	152.7	153.5	149.7	151.7	152.8	147.2	149.1	150.0	147.2	148.5	149.9
Commodities less food and beverages	153.9	155.9	157.5	152.0	154.6	156.8	148.4	150.3	152.2	146.2	147.3	149.0
Services	178.8	179.9	182.4	175.3	176.1	176.8	169.6	170.7	171.7	171.5	173.0	174.1
	South											
EXPENDITURE CATEGORY												
All items	158.0	159.1	161.2	159.5	160.9	161.7	159.0	160.2	161.2	159.5	160.8	162.0
Food and beverages	148.7	150.5	150.9	147.3	149.2	148.9	146.1	147.4	147.3	147.7	149.9	150.7
Housing	164.9	163.5	168.5	166.1	166.9	167.9	167.3	167.8	168.7	169.9	169.9	170.3
Apparel and upkeep	127.6	128.7	129.8	124.0	126.2	124.6	120.1	123.1	123.0	108.3	112.5	113.9
Transportation	162.1	163.8	166.8	165.0	167.1	170.3	163.8	165.9	168.5	161.3	162.9	166.0
Medical care	167.1	168.7	169.0	167.2	167.9	167.5	176.8	177.5	178.5	182.5	183.0	184.4
Entertainment	137.5	138.6	139.4	151.0	169.0	153.0	145.9	146.5	146.1	145.4	145.6	145.5
Other goods and services	157.5	158.4	159.3	163.2	154.5	162.9	157.8	153.5	160.0	160.3	160.4	161.0
COMMODITY AND SERVICE GROUP												
Commodities	150.9	152.3	153.7	151.7	153.8	154.5	149.2	151.0	152.0	149.2	151.1	153.0
Commodities less food and beverages	151.5	152.7	154.8	153.2	155.5	156.8	150.2	152.4	154.1	149.6	151.4	153.8
Services	167.9	168.6	171.5	171.1	171.6	172.6	173.9	174.4	175.3	174.9	175.3	175.7
	West											
EXPENDITURE CATEGORY												
All items	157.8	159.2	161.4	158.3	159.5	161.8	151.0	152.2	153.5	157.9	157.0	160.0
Food and beverages	149.3	151.8	151.2	150.6	152.8	153.7	146.0	148.6	148.6	150.6	153.1	154.4
Housing	163.2	164.0	166.2	162.2	163.5	165.1	150.1	151.8	151.2	159.3	154.4	159.1
Apparel and upkeep	120.1	121.0	121.8	125.1	121.7	128.4	122.4	122.7	123.3	139.7	139.8	142.9
Transportation	162.8	165.1	171.3	165.3	165.8	171.6	161.0	162.4	167.7	162.0	161.1	165.6
Medical care	174.4	175.3	176.7	170.5	171.5	172.6	174.2	174.8	176.4	173.3	175.0	177.5
Entertainment	139.2	139.7	139.6	144.7	145.6	145.9	143.3	139.6	144.8	155.2	157.0	157.3
Other goods and services	162.9	163.5	155.5	161.7	162.8	163.4	155.9	158.1	158.0	168.8	169.3	169.2
COMMODITY AND SERVICE GROUP												
Commodities	148.0	149.9	152.4	150.5	151.7	154.6	148.5	149.8	152.1	148.0	149.0	151.2
Commodities less food and beverages	147.0	148.6	153.1	150.1	150.7	154.9	148.6	149.6	153.3	146.8	147.0	149.6
Services	170.7	171.6	173.5	169.0	170.2	171.8	154.0	155.3	155.3	172.5	168.8	173.0

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

[1967 = 100 unless otherwise specified]

Area[1]	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1982	1983						1982	1983					
	June	Jan.	Feb.	Mar.	Apr.	May	June	June	Jan.	Feb.	Mar.	Apr.	May	June
U.S. city average[2]	290.6	...	293.2	293.4	295.5	...	298.1	...	...	292.3	293.0	294.9	...	...
Anchorage, Alaska (10/67 = 100)	...	257.6	...	261.0	...	262.5	...	...	250.6	...	253.9	...	254.7	...
Atlanta, Ga.	291.1	...	295.1	...	297.6	...	302.3	293.1	...	297.0	...	300.1	...	302.0
Baltimore, Md.	...	291.4	...	292.4	...	296.5	...	...	289.7	...	295.0	...	296.7	...
Boston, Mass.	...	286.2	...	285.9	...	287.3	...	...	283.9	...	284.3	...	285.1	...
Buffalo, N.Y.	265.8	...	280.3	...	282.5	...	284.3	264.1	...	276.5	...	278.4	...	283.3
Chicago, Ill.-Northwestern Ind.	293.1	294.0	293.7	293.7	295.3	296.3	299.6	292.7	292.8	291.4	291.4	293.6	294.8	296.4
Cincinnati, Ohio-Ky.-Ind.	...	306.0	...	307.6	...	311.3	...	...	305.2	...	307.6	...	309.5	...
Cleveland, Ohio	297.8	...	319.9	...	320.6	...	325.5	297.0	...	313.7	...	315.4	...	316.8
Dallas-Ft. Worth, Tex.	304.8	...	304.5	...	308.6	...	314.1	300.5	...	298.1	...	301.7	...	306.3
Denver-Boulder, Colo.	...	327.5	...	329.6	...	334.7	...	...	323.9	...	326.8	...	331.9	...
Detroit, Mich.	292.4	292.6	292.3	292.4	294.9	294.9	298.4	289.3	288.0	287.1	289.8	295.0	298.9	303.8
Honolulu, Hawaii	269.0	...	270.4	...	272.8	...	271.4	268.9	...	274.8	...	276.9	...	273.4
Houston, Tex.	313.9	...	317.3	...	316.7	...	321.3	310.9	...	317.4	...	317.6	...	319.7
Kansas City, Mo.-Kansas	281.6	...	292.3	...	295.9	...	297.5	280.1	...	289.0	...	293.5	...	298.3
Los Angeles-Long Beach, Anaheim, Calif.	289.3	285.6	286.8	287.1	289.5	292.0	294.5	293.0	288.0	290.1	289.6	292.2	292.1	293.2
Miami, Fla. (11/77 = 100)	...	157.9	...	159.0	...	159.4	...	...	159.2	...	159.7	...	161.4	...
Milwaukee, Wis.	...	305.0	...	305.0	...	308.8	...	...	303.5	...	311.0	...	315.4	...
Minneapolis-St. Paul, Minn.-Wis.	304.0	...	305.8	...	309.4	...	312.6	303.8	...	309.0	...	312.4	...	311.8
New York, N.Y.-Northeastern N.J.	277.3	282.6	283.2	283.5	286.5	287.4	289.1	276.1	280.8	279.6	280.3	282.2	283.8	286.1
Northeast, Pa. (Scranton)	...	278.9	...	278.9	...	281.7	...	...	282.6	...	280.6	...	282.9	...
Philadelphia, Pa.-N.J.	281.1	282.1	282.9	283.0	283.5	283.5	288.3	280.9	282.5	283.3	285.5	286.8	286.5	291.1
Pittsburgh, Pa.	285.1	...	304.8	...	305.2	...	305.4	285.9	...	296.6	...	300.7	...	299.5
Portland, Oreg.-Wash.	...	286.6	...	284.7	...	288.5	...	...	281.7	...	283.0	...	283.8	...
St. Louis, Mo.-Ill.	...	291.1	...	293.2	...	295.4	...	...	285.3	...	293.2	...	294.0	...
San Diego, Calif.	...	324.9	...	327.5	...	332.0	...	...	313.6	...	315.4	...	314.8	...
San Francisco-Oakland, Calif.	304.6	...	297.3	...	299.3	...	303.0	303.4	...	293.9	...	294.7	...	298.6
Seattle-Everett, Wash.	...	297.5	...	297.8	...	300.9	...	...	291.4	...	290.8	...	290.4	...
Washington, D.C.-Md.-Va.	...	289.0	...	289.0	...	292.6	...	...	292.9	...	294.3	...	297.5	...

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

[2]Average of 85 cities.

23. Producer Price Indexes, by stage of processing

[1967 = 100]

Commodity grouping	Annual average 1982	1982						1983						
		July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.[1]	Apr.	May	June	July
FINISHED GOODS														
Finished goods	280.6	281.7	282.3	281.2	284.1	284.9	285.5	283.9	284.1	283.4	283.0	284.3	285.0	285.7
Finished consumer goods	281.0	282.1	282.8	281.9	284.3	285.3	285.6	283.5	283.7	r282.7	282.0	283.5	284.4	285.2
Finished consumer foods	259.3	260.6	259.7	259.9	257.7	257.4	258.3	258.4	261.0	r261.1	262.9	262.6	261.0	260.8
Crude	252.7	241.0	239.2	228.2	232.4	236.1	247.6	232.9	240.8	r247.9	265.4	266.8	250.9	249.7
Processed	257.7	260.2	259.4	260.6	257.9	257.2	257.1	258.5	260.7	r260.1	260.5	260.1	259.8	259.6
Nondurable goods less foods	333.6	335.3	337.2	338.3	340.0	342.5	342.2	336.6	333.7	r332.0	328.0	332.0	335.6	337.8
Durable goods	226.7	226.7	227.5	223.0	231.0	231.2	232.0	231.7	232.9	r231.9	232.2	232.6	232.8	233.1
Consumer nondurable goods less food and energy	223.8	223.7	224.3	225.5	227.8	228.4	229.2	228.3	228.9	r229.4	229.8	230.2	230.4	232.2
Capital equipment	279.4	280.2	280.7	278.8	283.2	283.8	284.9	285.2	285.6	r285.6	286.5	286.8	286.9	287.4
INTERMEDIATE MATERIALS														
Intermediate materials, supplies, and components	310.4	311.1	310.8	310.5	309.9	309.9	310.1	309.2	309.9	r309.5	309.1	310.1	311.7	313.0
Materials and components for manufacturing	289.8	289.2	288.7	289.9	289.4	288.7	288.3	288.6	291.1	r290.2	291.1	292.0	292.4	293.4
Materials for food manufacturing	255.1	259.7	258.0	257.3	254.2	251.0	249.8	250.9	254.1	r252.8	254.8	256.8	257.1	257.3
Materials for nondurable manufacturing	284.4	283.1	282.6	281.7	280.4	279.2	278.0	277.0	277.0	r276.6	277.5	277.7	278.0	278.3
Materials for durable manufacturing	310.1	308.0	306.5	310.5	309.8	309.3	309.4	312.0	319.2	r315.7	316.4	318.4	318.4	320.1
Components for manufacturing	273.9	273.9	274.3	275.8	276.7	276.9	277.3	276.8	277.6	r278.3	279.0	279.6	280.6	281.8
Materials and components for construction	293.7	294.3	293.5	294.2	293.7	293.6	294.7	296.5	298.8	r299.6	300.1	300.5	301.5	302.9
Processed fuels and lubricants	591.7	600.7	603.8	592.3	590.0	593.0	595.0	577.9	565.4	r564.2	549.0	552.8	567.4	572.7
Manufacturing industries	497.8	506.9	510.7	496.4	496.6	500.4	502.2	485.2	475.5	r480.6	468.5	470.1	483.6	487.7
Nonmanufacturing industries	674.3	683.0	685.5	676.9	672.1	674.2	676.4	659.4	644.6	r637.2	619.2	624.9	640.5	647.0
Containers	285.6	286.3	285.4	285.3	285.1	284.9	285.0	285.0	285.3	r285.2	285.0	286.1	285.9	286.5
Supplies	272.1	273.1	272.6	272.2	272.0	272.8	273.0	273.1	273.5	r273.9	275.6	275.9	275.9	276.4
Manufacturing industries	265.8	266.8	266.5	266.7	266.9	266.9	267.2	267.4	267.8	r268.1	268.8	269.2	270.2	270.4
Nonmanufacturing industries	275.7	276.7	276.0	275.3	274.9	276.1	276.3	276.4	276.8	r277.1	279.4	279.6	279.1	279.8
Feeds	207.0	210.3	203.1	198.1	192.9	199.8	204.7	206.5	207.4	r207.7	219.1	218.0	213.6	216.1
Other supplies	289.8	290.5	291.1	291.3	291.9	291.9	291.1	290.9	291.2	r291.6	292.1	292.5	292.8	293.1
CRUDE MATERIALS														
Crude materials for further processing	319.5	323.4	319..8	316.1	312.0	313.2	312.7	313.9	320.2	r321.6	325.7	325.7	323.2	320.6
Foodstuffs and feedstuffs	247.8	255.5	249.6	242.9	236.3	236.3	237.1	239.6	249.3	r249.1	256.8	256.5	252.1	248.6
Nonfood materials	473.9	469.8	471.0	473.7	474.8	478.6	475.3	473.6	473.0	r477.7	474.4	475.1	476.4	475.5
Nonfood materials except fuel	376.8	369.2	369.5	369.5	371.9	369.2	365.8	368.0	366.0	r366.8	366.5	368.5	369.9	370.5
Manufacturing industries	387.2	378.4	378.9	379.1	382.2	379.2	375.0	377.6	375.1	r375.9	376.0	378.1	379.6	379.6
Construction	270.3	271.4	270.3	268.8	266.3	265.6	268.1	267.5	269.1	r269.3	267.2	267.6	268.1	272.9
Crude fuel	886.1	901.3	906.9	923.5	917.2	954.7	952.2	930.7	937.7	r961.8	943.2	936.8	937.7	929.1
Manufacturing industries	1,034.8	1,053.9	1,061.1	1,083.6	1,075.3	1,125.5	1,121.4	1,093.8	1,103.9	r1,134.3	1,109.4	1,102.2	1,103.6	1,091.9
Nonmanufacturing industries	782.2	794.5	798.9	810.7	805.9	834.2	832.2	815.5	820.0	r839.2	825.5	819.7	820.1	814.1
SPECIAL GROUPINGS														
Finished goods excluding foods	285.8	286.7	287.9	286.3	290.8	292.0	292.5	290.3	289.6	r288.7	287.5	289.3	290.8	291.9
Finished consumer goods excluding foods	287.8	288.8	290.2	288.9	293.3	294.8	295.0	291.4	290.3	r288.9	287.2	289.3	291.4	292.7
Finished consumer goods less energy	244.1	244.5	244.7	243.9	246.5	246.7	247.6	247.1	248.7	r248.6	249.5	249.6	249.2	249.8
Intermediate materials less foods and feeds	315.7	316.1	316.0	315.9	315.5	315.5	315.7	314.6	315.2	r314.8	314.0	315.0	316.8	318.1
Intermediate materials less energy	290.4	290.4	289.7	290.5	290.1	289.8	290.0	290.5	292.4	r292.1	293.1	293.9	294.3	295.3
Intermediate foods and feeds	239.4	243.6	240.2	238.1	234.4	234.4	235.1	236.4	238.8	r238.0	243.2	244.2	242.9	243.8
Crude materials less agricultural products	536.3	531.5	532.0	535.5	537.2	541.9	537.4	536.0	535.1	r539.7	535.9	536.2	537.5	536.3
Crude materials less energy	240.4	245.1	240.7	235.6	230.0	229.2	229.9	232.5	241.4	r242.7	248.4	248.8	246.0	243.7

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

r = revised.

24. Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1982	1982						1983						
			July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.[1]	Apr.	May	June	July
	All commodities	299.3	300.4	300.2	299.3	299.8	300.3	300.7	299.9	300.9	r300.6	300.8	301.7	302.5	303.2
	All commodities (1957-59 = 100)	317.6	318.7	318.5	317.6	318.1	318.6	319.0	318.2	319.3	r318.9	319.1	320.1	321.0	321.7
	Farm products and processed foods and feeds	248.9	252.4	249.6	247.4	243.8	243.9	244.8	245.8	250.4	r250.6	254.7	254.7	352.4	251.6
	Industrial commodities	312.3	312.8	313.2	312.7	314.3	315.0	315.2	313.9	313.9	r313.5	312.6	313.8	315.4	316.6
	FARM PRODUCTS AND PROCESSED FOODS AND FEEDS														
01	Farm products	242.4	246.6	240.8	234.5	299.2	230.7	232.6	233.2	240.7	r241.5	250.5	250.3	247.3	244.3
01–1	Fresh and dried fruits and vegetables	253.7	239.1	238.6	221.0	223.0	233.4	248.8	227.6	227.8	r234.9	266.0	259.5	263.9	258.0
01–2	Grains	210.9	212.8	197.2	187.3	183.2	198.6	262.3	206.3	222.4	227.4	243.8	242.2	241.5	236.7
01–3	Livestock	257.8	270.3	268.4	259.0	248.5	239.1	237.2	242.3	251.1	251.4	260.6	258.0	251.7	240.7
01–4	Live poultry	191.9	212.5	189.3	196.5	177.1	181.6	177.8	177.1	200.1	177.8	170.8	186.9	199.3	214.5
01–5	Plant and animal fibers	202.9	220.8	207.5	196.8	198.1	195.3	200.6	201.7	206.4	217.0	213.6	223.9	229.7	230.4
01–6	Fluid milk	282.5	279.0	278.8	281.9	285.0	285.9	285.5	284.5	284.3	282.9	280.8	279.8	278.6	278.7
01–7	Eggs	178.7	171.7	171.7	173.3	177.9	172.5	170.0	170.0	170.0	170.0	170.0	185.1	169.3	177.2
01–8	Hay, hayseeds, and oilseeds	212.8	220.0	204.5	201.8	194.3	204.8	209.0	212.4	217.9	217.8	226.3	227.3	213.3	227.3
01–9	Other farm products	274.5	265.5	274.4	276.8	274.0	276.3	280.1	279.9	281.2	280.3	279.2	281.0	284.4	282.5
02	Processed foods and feeds	251.5	254.6	253.5	253.5	250.8	250.2	250.5	251.7	254.7	r254.5	256.0	256.1	254.2	254.6
02–1	Cereal and bakery products	253.8	253.0	252.7	254.0	253.0	254.2	256.2	257.3	256.8	r256.9	259.1	259.8	260.0	261.9
02–2	Meats, poultry, and fish	257.6	266.0	262.2	265.7	256.9	251.6	249.9	252.3	261.0	r260.7	259.3	257.7	250.3	248.2
02–3	Dairy products	248.9	248.6	248.8	249.1	249.8	250.2	250.8	250.7	250.9	250.7	251.0	250.9	250.4	250.3
02–4	Processed fruits and vegetables	274.5	274.4	274.1	272.8	273.4	272.8	275.7	274.8	274.3	r274.9	273.8	275.0	276.8	277.0
02–5	Sugar and confectionery	269.7	275.7	285.5	278.5	276.3	280.4	280.1	282.1	286.4	283.7	286.7	289.5	296.0	296.4
02–6	Beverages and beverage materials	256.9	256.9	258.0	257.1	257.9	258.4	258.8	260.1	261.3	r262.0	263.0	263.3	262.8	263.0
02–7	Fats and oils	215.1	221.3	215.6	211.4	213.8	207.2	203.0	201.7	205.3	r206.0	213.4	219.4	219.4	222.7
02–8	Miscellaneous processed foods	248.6	248.1	245.9	247.0	247.9	247.8	248.6	248.8	249.3	248.5	249.9	249.9	250.4	253.9
02–9	Prepared animal feeds	211.3	213.9	207.5	204.3	199.8	206.0	210.1	211.6	212.3	r212.4	222.3	221.2	217.3	219.9
	INDUSTRIAL COMMODITIES														
03	Textile products and apparel	204.6	204.1	204.2	204.3	204.1	203.9	202.6	202.7	202.6	r203.4	203.3	203.9	204.5	205.1
03–1	Synthetic fibers (12/75 = 100)	162.1	161.5	162.2	162.5	161.1	161.2	159.7	156.7	153.1	r153.9	155.4	157.2	156.6	159.1
03–2	Processed yarns and threads (12/75 = 100)	138.3	135.9	135.9	136.6	136.5	136.7	136.7	134.7	135.0	r135.8	136.0	137.6	137.6	138.5
03–3	Gray fabrics (12/75 = 100)	145.3	144.9	144.6	143.6	143.7	143.1	143.3	144.4	144.3	r145.1	146.2	146.0	145.8	146.0
03–4	Finished fabrics (12/75 = 100)	124.6	123.8	124.3	123.7	123.2	123.0	122.8	122.2	122.3	r122.4	122.8	122.2	122.5	122.4
03–4	Aparel	194.4	194.8	195.1	195.4	195.7	195.4	193.0	194.4	195.0	r196.1	194.7	195.1	196.6	197.1
03–81	Textile housefurnishings	238.5	238.2	236.4	238.2	236.2	236.2	236.2	236.5	234.3	r234.2	238.5	241.9	239.5	238.9
03–82															
04	Hides, skins, leather, and related products	262.6	263.1	262.0	263.5	263.2	263.2	264.1	266.7	264.3	r264.9	267.1	270.1	270.6	272.7
04–2	Leather	311.4	307.4	304.9	309.2	309.5	312.8	314.4	314.4	312.8	r316.2	317.9	324.5	334.0	333.3
04–3	Footwear	245.0	247.3	247.7	248.3	248.0	249.1	247.7	251.5	247.7	r248.1	248.4	248.7	249.0	249.9
04–4	Other leather and related products	247.4	246.9	244.9	247.7	247.2	247.1	249.1	250.8	251.0	r250.9	254.4	255.2	252.1	257.4
05	Fuels and related products and power	693.2	701.1	705.6	700.4	698.8	706.1	703.4	683.6	668.6	r658.0	648.1	654.8	668.7	671.6
05–1	Coal	534.7	538.0	539.0	538.5	538.1	539.6	538.7	535.6	533.4	r538.6	539.3	535.0	534.0	535.5
05–2	Coke	461.7	460.3	459.1	460.0	452.3	562.3	452.3	450.9	450.9	447.3	447.3	438.4	438.4	438.4
05–3	Gas fuels[2]	1,060.8	1,054.3	1,074.6	1,112.2	1,130.1	1,190.0	1,181.2	1,147.3	1,154.7	r1,180.0	1,158.4	1,159.0	1,157.4	1,151.2
05–4	Electirc power	406.5	416.0	414.9	415.0	408.7	404.9	409.9	410.8	410.8	r411.4	409.5	412.5	419.7	425.1
05–61	Crude petroleum[3]	733.4	718.4	718.4	718.3	735.3	733.6	720.0	719.7	692.9	r678.0	678.4	678.4	678.4	676.1
05–7	Petroleum products, refined[4]	761.2	776.5	781.7	761.6	754.6	758.0	754.2	720.6	692.8	r666.6	651.8	664.5	690.1	694.9
06	Chemicals and allied products	292.3	291.6	291.6	290.7	289.9	290.5	289.6	289.3	290.5	r289.8	291.3	291.3	291.3	291.3
06–1	Industrial chemicals[5]	352.6	349.1	349.1	346.5	345.8	345.2	342.4	339.3	340.1	r338.8	339.7	339.8	339.7	338.8
06–21	Prepared paint	262.8	264.7	264.7	264.7	264.7	264.7	264.7	264.7	264.7	r264.7	265.1	265.1	265.1	265.6
06–22	Paint materials	304.6	304.5	302.5	303.0	303.0	302.4	301.7	301.5	299.5	r298.4	299.5	300.0	299.3	300.4
06–3	Drugs and pharmaceuticals	210.1	210.0	211.2	212.4	214.9	215.5	216.0	218.6	222.2	r222.9	225.1	225.3	225.7	227.5
06–4	Fats and oils, inedible	267.1	278.2	254.2	254.1	242.3	239.6	240.8	242.0	253.4	r262.2	278.8	286.2	277.9	263.6
06–5	Agricultural chemnicals and chemical products	292.4	291.5	290.8	289.9	288.8	286.5	285.2	283.2	283.3	r284.2	283.7	282.9	281.7	278.6
06–6	Plastic resins and materials	283.4	280.9	282.2	281.6	281.3	282.2	282.5	283.8	283.1	r282.1	284.7	285.4	289.1	290.6
06–7	Other chemicals and allied products	270.1	271.1	272.3	271.2	268.6	272.3	272.0	272.8	274.4	r272.0	273.4	272.3	272.0	273.6
07	Rubber plastic products	241.4	242.0	242.6	242.5	242.2	241.7	242.2	242.9	242.3	r241.8	242.2	242.9	242.7	244.4
07–1	Rubber and rubber products	267.8	268.8	270.1	269.5	268.9	267.9	268.2	269.6	268.3	r267.1	269.2	269.2	267.8	267.6
07–11	Crude rubber	278.9	280.3	278.7	276.6	272.5	2709	271.1	271.1	274.3	r281.2	280.6	280.5	280.1	283.1
07–12	Tires and tubes	255.2	255.0	257.8	255.6	255.7	254.5	256.0	259.1	250.5	r246.6	246.6	246.5	244.0	242.7
07–13	Miscellaneous rubber products	276.9	279.4	279.7	281.6	281.4	280.7	279.7	284.5	289.6	r285.8	291.6	291.8	291.5	291.5
07–2	Plastic products (6/78 = 100)	132.3	132.5	132.5	132.7	132.7	132.7	133.0	133.0	133.1	r133.2	132.5	133.4	133.9	135.9
08	Lumber and wood products	284.7	288.6	284.2	283.0	279.4	279.9	285.6	293.3	303.1	r305.8	305.4	306.2	312.5	314.5
08–1	Lumber	310.8	319.2	311.6	310.3	305.6	305.1	312.6	326.8	344.7	r349.3	352.8	357.3	371.3	372.5
08–2	Millwork	279.4	282.3	280.2	279.5	278.6	280.3	286.5	293.7	300.5	304.0	302.7	298.8	294.7	296.1
08–3	Plywood	232.1	232.4	229.0	228.5	224.0	227.8	231.2	235.3	239.5	r238.9	239.3	240.9	253.4	252.5
08–4	Other wood products	236.2	236.0	235.8	235.6	235.8	233.0	231.2	232.0	233.2	r231.6	230.8	231.1	229.6	229.7

See footnotes at end of table.

24. Continued—Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1982	1982						1983						
			July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.[1]	Apr.	May	June	July
	INDUSTRIAL COMMODITIES—Continued														
09	Pulp, paper, and allied products	288.7	289.1	289.3	289.4	289.8	289.8	290.5	293.6	294.2	r294.8	295.1	295.7	296.7	297.7
09–1	Pulp, paper,and products,excluding building paper and board	273.2	272.6	272.2	271.5	270.3	269.4	268.8	269.8	268.7	r268.7	268.8	269.1	269.4	269.9
09–11	Woodpulp	379.0	368.3	367.0	365.0	350.4	347.3	347.2	346.6	345.7	r343.0	344.5	345.8	346.5	347.5
09–12	Wastepaper	121.1	115.6	116.0	116.0	116.0	116.0	116.0	116.0	116.0	116.0	116.0	116.0	116.0	116.0
09–13	Paper	286.3	286.3	285.3	285.3	285.4	280.6	279.2	279.3	278.8	r278.4	278.7	279.1	179.6	281.7
09–14	Paperboard	254.9	255.0	255.4	250.7	248.0	247.6	244.1	243.3	244.1	r246.3	248.4	248.9	249.6	249.5
09–15	Converted paper and paperboard products	264.4	264.4	264.3	264.2	264.0	264.7	264.8	265.0	265.1	r265.1	264.5	264.5	264.7	264.5
09–2	Building paper and board	239.5	239.8	244.4	243.4	242.1	241.0	242.0	241.1	241.4	r244.2	246.1	249.3	255.7	256.2
10	Metals and metal products	301.6	299.5	299.2	301.8	301.6	300.5	299.9	300.3	304.7	r304.4	305.3	306.7	306.4	307.4
10–1	Iron and steel	339.0	337.5	337.1	336.5	337.6	335.9	332.8	333.3	339.9	r341.6	341.7	341.1	340.4	341.3
10–17	Steel mill products	349.5	349.0	348.6	348.2	349.8	348.6	344.7	343.7	351.1	r349.8	350.1	350.0	349.0	349.9
10–2	Nonferrous metals	263.6	256.4	255.7	265.1	262.9	261.7	263.2	267.0	275.8	r270.6	271.7	277.9	275.5	277.6
10–3	Metal containers	328.5	330.0	328.8	328.8	329.7	329.0	328.3	327.9	331.1	r331.4	332.0	337.4	336.8	337.4
10–4	Hardware	280.3	281.2	382.6	282.7	283.0	283.1	285.8	287.2	287.9	r288.2	286.3	286.2	289.2	289.7
10–5	Plumbing fixtures and brass fittings	278.7	283.3	274.6	277.1	277.8	278.3	279.2	280.6	283.5	r285.6	287.5	288.8	290.6	292.1
10–6	Heating equipment	237.2	238.9	238.4	239.1	238.4	238.8	239.3	240.7	240.7	241.1	242.3	242.4	142.6	249.0
10–7	Fabricated structural metal products	304.8	303.9	304.3	306.4	305.9	305.3	304.7	303.6	302.8	303.7	302.6	302.1	301.9	302.2
10–8	Miscellaneous metal products	282.3	283.2	283.3	283.8	284.1	283.4	283.2	279.1	279.0	r280.4	285.3	284.9	287.4	287.4
11	Machinery and equipment	278.8	279.6	279.9	280.2	281.1	281.8	282.4	283.3	284.3	r284.7	284.9	285.6	285.8	286.9
11–1	Agricultural machinery and equipment	311.1	311.0	312.2	314.1	317.5	318.7	320.7	322.4	323.3	r323.5	324.8	326.0	325.5	326.2
11–2	Construction machinery and equipment	343.9	346.1	346.5	347.5	347.6	347.9	348.1	348.3	349.3	r349.6	350.8	352.2	352.5	352.7
11–3	Metalworking machinery and equipment	320.9	322.5	322.8	323.1	323.1	323.5	323.6	324.1	325.2	r325.5	325.6	326.1	326.6	326.5
11 4	General purpose machinery and equipment	304.0	304.8	304.9	305.0	305.9	306.4	307.0	307.4	307.9	r307.5	307.9	308.4	308.5	308.4
11–6	Special industry machinery and equipment	325.1	327.1	326.7	326.8	327.8	329.1	329.9	331.8	332.6	r333.6	334.4	335.6	336.3	337.8
11–7	Electrical machinery and equipment	231.6	231.6	231.8	231.7	232.6	233.7	234.2	235.2	237.2	r237.5	237.3	237.7	238.2	240.8
11–9	Miscellaneous machinery	268.4	269.5	270.9	271.5	271.6	272.0	272.3	272.9	272.7	r273.7	274.0	275.2	274.8	274.9
12	Furniture and household durables	206.9	206.8	208.1	208.3	208.9	208.9	209.2	210.7	212.5	r212.3	213.1	213.3	213.6	214.4
12–1	Household furniture	229.8	230.0	230.4	230.7	231.2	231.4	232.0	231.9	232.6	r231.1	233.7	234.3	234.8	235.3
12–2	Commercial furniture	275.5	277.4	278.1	278.2	278.3	278.6	278.5	281.1	282.2	r285.1	286.7	286.6	287 0	287.9
12–3	Floor coverings	181.2	181.2	181.0	181.5	181.6	181.3	181.5	182.2	182.1	r182.0	181.4	181.3	180.6	185.1
12–4	Household appliances	199.1	200.2	201.0	201.2	201.3	201.2	201.8	203.9	204.9	r205.0	205.2	205.7	207.0	207.4
12–5	Home electronic equipment	88.1	87.2	88.0	87.4	87.8	87.0	87.1	87.3	87.0	r87.0	86.9	86.7	86.4	86.1
12–6	Other household durable goods	289.3	285.1	291.8	293.4	296.5	297.2	298.1	302.8	314.8	r312.9	313.3	313.7	312.9	313.5
13	Nonmetallic mineral products	320.2	321.1	320.5	321.2	321.1	321.2	320.5	321.5	322.3	r322.0	323.7	324.2	324.6	325.4
13–11	Flat glass	221.5	226.1	221.1	221.1	221.1	225.3	225.3	229.7	229.7	229.7	229.7	229.7	229.7	229.8
13–2	Concrete ingredients	310.0	311.8	311.2	310.8	309.9	310.0	306.7	307.2	310.0	r308.5	310.6	314.8	315.4	315.4
13–3	Concrete products	297.8	298.8	299.0	298.7	298.6	298.2	298.5	299.4	300.1	r300.4	300.3	301.0	301.4	302.2
13–4	Structural clay products, excluding refractories	260.8	259.3	263.9	264.0	264.0	264.8	264.8	264.9	264.3	r270.7	275.3	277.0	280.8	281.7
13–5	Refractories	337.1	340.4	340.7	340.8	340.8	337.2	337.2	337.7	337.7	r337.7	338.7	338.7	337.3	338.7
13–6	Asphalt roofing	298.4	399.8	400.1	413.4	406.7	399.0	397.0	393.7	380.4	r374.7	389.0	378.6	378.1	383.9
13–7	Gypsum products	256.1	255.8	253.9	253.9	255.1	255.0	253.9	263.1	267.4	r265.9	271.4	275.3	273.5	276.0
13–8	Glass containers	355.5	358.1	358.0	358.6	358.5	357.8	357.6	356.6	355.8	354.1	353.8	351.8	351.7	351.7
13–9	Other nonmetallic minerals	471.8	466.6	466.0	467.7	470.4	471.3	471.0	471.5	476.1	r476.4	478.6	478.1	479.4	480.8
14	Transportation equipment (12/68 = 100)	249.7	249.8	250.6	244.5	256.0	256.3	257.5	256.3	255.8	r255.2	255.6	256.0	256.3	256.4
14–1	Motor vehicles and equipment	251.3	252.0	252.8	244.6	257.8	257.8	258.1	257.0	256.3	r255.4	255.9	256.2	256.6	256.7
14–4	Railroad equipment	346.5	342.6	347.7	348.0	350.8	350.8	350.8	350.8	350.5	r350.3	357.2	357.1	356.8	358.1
15	Miscellaneous products	276.4	273.4	272.0	279.5	285.4	285.2	290.4	285.7	288.8	r287.4	287.6	287.1	288.0	291.7
15–1	Toys, sporting goods, small arms, ammunition	221.5	222.0	223.5	221.8	221.2	221.3	223.7	222.7	225.3	r225.7	226.8	226.5	226.4	224.8
15–2	Tobacco products	323.1	311.5	311.5	329.1	365.4	364.5	382.9	356.2	356.4	r353.8	354.7	353.9	352.2	373.5
15–3	Notions	277.0	280.1	280.1	280.1	280.1	279.8	279.8	280.5	280.6	280.6	380.3	280.3	280.3	280.3
15–4	Photograhic equipment and supplies	210.4	208.9	208.9	209.9	209.7	209.7	210.0	210.0	211.8	r216.6	216.9	216.9	216.8	216.8
15–5	Mobile homes (12/74 = 100)	161.9	162.6	162.8	162.9	162.6	161.6	161.7	161.8	161.7	r162.9	162.5	162.3	163.0	163.4
15–9	Other miscellaneous products	338.3	333.7	327.0	345.2	345.2	345.1	351.6	350.8	359.8	r350.5	349.8	348.6	352.7	353.5

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

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

[3] Includes only domestic production.

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

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

r = revised.

25. Producer Price Indexes, for special commodity groupings

[1967 = 100 unless otherwise specified]

Commodity grouping	Annual average 1982	1982						1983						
		July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.[1]	Apr.	May	June	July
All commodities—less farm products	303.0	303.9	304.1	303.7	304.7	305.1	305.4	304.4	304.9	r304.5	304.0	305.0	306.1	307.1
All foods	254.4	256.6	255.8	255.3	252.8	251.9	252.7	252.4	255.7	r255.8	258.1	258.2	256.5	256.4
Processed foods	256.0	259.5	258.7	259.2	256.2	254.7	254.7	255.8	259.3	r258.9	159.5	259.6	257.8	258.0
Industrial commodities less fuels	272.8	272.5	272.6	272.5	274.4	274.4	274.9	275.4	277.0	r276.9	277.5	278.1	278.6	279.5
Selected textile mill products (Dec. 1975 = 100)	138.2	137.6	137.8	137.8	137.4	137.1	136.8	136.7	136.8	r137.2	137.2	137.2	137.2	137.7
Hosiery	138.3	138.5	138.5	138.7	138.7	139.7	139.7	141.7	144.5	144.5	144.5	144.5	144.5	144.5
Underwear and nightwear	217.6	218.8	218.6	219.6	220.1	219.7	219.7	223.3	222.6	223.8	223.8	224.0	223.1	223.2
Chemicals and allied products, including synthetic rubber and fibers and yarns	283.8	282.9	283.3	282.5	281.8	282.3	281.4	280.8	281.4	r280.7	281.9	281.9	282.0	282.5
Pharmaceutical preparations	206.0	206.9	207.4	209.0	211.7	212.3	212.8	215.8	219.4	r220.3	222.9	223.2	223.9	226.0
Lumber and wood products, excluding millwork	288.8	294.8	288.3	287.2	282.5	283.4	289.6	300.7	314.3	r317.2	319.8	323.3	337.0	337.6
Steel mill products, including fabricated wire products	349.4	348.4	348.1	347.8	349.1	348.5	344.8	343.1	349.9	r348.4	348.7	348.7	347.7	348.4
Finished steel mill products, excluding fabricated wire products	348.4	347.7	347.3	346.9	348.6	348.0	344.0	342.1	349.8	r348.3	348.8	348.7	347.7	348.5
Finished steel mill products, including fabricated wire products	348.1	347.0	346.7	346.3	347.8	347.2	343.3	341.6	348.5	r347.0	347.3	347.3	346.4	347.0
Special metals and metal products	286.6	285.7	286.8	284.0	289.5	288.9	288.7	288.6	290.9	r290.3	291.0	292.1	292.1	292.7
Fabricated metal products	291.6	292.0	291.9	292.9	293.0	292.5	292.5	291.1	291.3	r292.3	293.4	293.9	295.2	295.5
Copper and copper products	185.5	179.2	179.8	181.0	178.8	181.2	181.8	190.7	201.5	r198.9	201.0	206.7	201.5	202.2
Machinery and motive products	272.1	272.8	273.3	270.7	276.4	277.0	277.9	277.8	278.2	r278.1	278.5	279.0	279.3	279.9
Machinery and equipment, except electrical	306.4	307.6	308.1	308.6	309.4	310.0	310.6	311.3	311.9	r312.2	312.8	313.6	313.7	313.9
Agricultural machinery, including tractors	323.1	321.8	322.8	325.5	330.6	332.2	335.1	337.0	337.7	r337.8	340.1	341.1	340.4	341.4
Metalworking machinery	350.4	352.8	353.1	353.5	354.1	354.2	354.1	354.6	355.7	r355.6	356.3	358.0	357.7	357.7
Total tractors	355.0	354.8	355.5	359.6	361.4	361.4	364.2	365.6	365.6	365.7	370.4	370.5	370.6	370.7
Agricultural machinery and equipment less parts	313.8	312.8	313.8	315.8	320.1	321.5	324.3	325.9	326.6	r326.8	328.7	329.6	329.0	329.8
Farm and garden tractors less parts	327.8	325.4	326.0	333.0	336.1	336.1	340.3	342.2	342.2	342.2	348.7	348.8	348.8	348.8
Agricultural machinery, excluding tractors less parts	319.6	319.1	320.4	319.6	326.4	329.3	331.1	333.1	334.4	r334.5	333.4	335.1	333.8	335.6
Construction materials	288.0	289.2	288.3	288.4	288.0	287.8	287.9	290.3	294.6	r295.0	195.5	296.3	297.7	299.1

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

r = revised.

26. Producer Price Indexes, by durability of product

[1967 = 100]

Commodity grouping	Annual average 1982	1982						1983						
		July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.[1]	Apr.	May	June	July
Total durable goods	279.0	278.9	278.8	278.6	281.2	281.2	282.0	282.6	284.8	r284.6	285.1	285.9	286.4	287.3
Total nondurable goods	315.3	317.6	317.1	315.7	314.3	315.3	315.3	313.3	313.4	r313.0	312.8	313.9	315.0	315.5
Total manufactures	292.7	293.7	293.8	292.9	293.8	293.9	294.3	293.5	293.9	r293.2	292.9	293.9	295.1	296.1
Durable	279.8	279.9	279.8	279.5	282.3	282.4	283.2	283.7	285.7	r285.3	285.8	286.6	287.0	287.9
Nondurable	306.4	308.5	308.6	307.1	306.0	306.1	305.9	303.8	302.5	r301.4	300.2	301.4	303.6	304.7
Total raw or slightly processed goods	331.2	333.2	331.1	329.9	327.9	330.9	331.6	330.4	335.2	r337.3	340.7	341.2	339.3	338.3
Durable	233.8	225.3	225.0	226.2	224.2	219.2	217.4	224.2	235.4	r243.3	244.9	246.9	250.2	250.7
Nondurable	337.3	340.1	337.9	336.5	334.5	338.1	339.0	337.2	341.5	r343.2	346.7	347.0	344.8	343.7

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

r = revised.

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

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1982	1982						1983						
			July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.[1]	Apr.	May	June	July
	MINING														
1011	Iron ores (12/75 = 100)	175.2	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1
1092	Mercury ores (12/75 = 100)	312.2	306.2	287.5	289.5	312.5	308.3	312.5	306.2	289.5	285.4	272.9	268.7	254.1	237.5
1311	Crude petroleum and natural gas	925.8	924.3	926.7	937.6	945.9	969.0	958.4	945.2	931.2	r934.4	922.9	922.7	925.0	917.4
1455	Kaolin and ball clay (6/76 = 100)	151.2	151.7	151.7	151.7	151.7	151.7	151.7	153.6	156.3	158.4	164.3	164.3	164.3	164.3
	MANUFACTURING														
2021	Creamery butter	276.0	275.0	276.3	276.8	276.8	276.5	277.8	275.5	275.6	275.6	275.6	275.6	275.6	275.6
2044	Rice milling	185.1	177.6	183.0	183.0	183.0	175.2	196.1	191.3	183.0	183.0	188.9	191.3	194.5	193.7
2067	Chewing gum	304.1	303.3	304.7	304.7	304.8	306.0	306.1	326.0	326.0	326.1	326.1	326.1	327.2	327.2
2074	Cottonseed oil mills	168.3	174.6	173.1	164.4	157.6	r164.1	169.4	157.5	173.4	r167.1	172.0	172.2	179.2	192.4
2083	Malt	256.9	259.8	259.8	251.2	251.2	240.6	240.6	232.6	232.6	232.6	232.6	232.6	232.6	232.6
2091	Canned and cured seafoods (12/73 = 100)	187.0	187.8	184.3	186.2	186.3	186.4	186.6	182.8	179.2	177.9	177.8	175.7	173.4	173.7
2098	Macaroni and spaghetti	258.5	259.5	259.5	259.5	255.5	255.5	255.5	255.5	255.5	255.5	255.5	255.5	255.5	255.5
2251	Women's hosiery, except socks (12/75 = 100)	116.8	116.8	116.9	116.9	116.9	118.5	118.3	118.5	122.6	r122.7	122.8	122.8	122.8	122.9
2261	Finishing plants, cotton (6/76 = 100)	139.5	140.3	139.8	138.5	136.8	136.2	136.1	135.3	136.0	136.1	135.6	132.8	132.9	132.6
2262	Finishing plants, synthetics, silk (6/76 = 100)	128.2	126.8	129.0	128.2	127.5	127.8	127.3	125.7	126.7	r126.2	125.6	125.3	125.8	125.1
2284	Thread mills (6/76 = 100)	157.2	156.5	158.0	158.0	157.9	157.9	157.8	157.9	161.9	165.6	165.7	165.7	165.7	165.7
2298	Cordage and twine (12/77 = 100)	141.5	141.0	141.0	142.6	142.6	142.6	142.6	142.6	142.7	142.8	137.6	137.6	137.6	137.6
2323	Men's and boys' neckwear (12/75 = 100)	119.5	121.3	121.3	121.3	121.3	121.3	121.3	121.3	121.3	121.3	121.3	121.3	121.3	121.3
2361	Children's dresses and blouses (12/77 = 100)	120.6	119.4	120.3	118.6	118.6	117.0	117.0	117.0	117.0	115.5	115.5	115.5	117.0	117.0
2381	Fabric dress and work gloves	292.1	294.5	288.2	288.2	287.4	287.4	287.4	288.8	288.8	288.8	291.0	291.7	291.7	296.3
2394	Canvas and related products (12/77 = 100)	145.4	143.1	143.1	144.8	147.3	147.3	147.3	148.7	148.7	r146.2	146.8	146.8	146.8	146.8
2396	Automotive and apparel trimmings (12/77 = 100)	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0
2448	Wood pallets and skids (12/75 = 100)	145.6	144.1	143.9	143.8	144.3	144.2	144.6	144.6	145.2	r145.7	146.8	148.3	149.3	150.8
2521	Wood office furniture	270.3	270.9	271.3	271.3	271.4	271.4	271.4	271.4	273.4	r279.6	281.5	281.5	283.6	284.7
2654	Sanitary food containers	259.7	259.9	259.9	260.8	261.7	261.7	261.7	261.7	261.7	r265.1	266.6	266.7	266.7	268.6
2655	Fiber cans, drums, and similar products (12/75 = 100)	177.8	176.7	177.5	177.5	177.9	180.7	183.8	183.8	183.8	183.8	185.5	185.6	185.9	187.7
2911	Petroleum refining (6/76 = 100)	278.3	281.5	283.7	279.6	278.3	280.1	278.3	267.2	257.4	r250.4	241.4	246.7	254.9	256.3
2952	Asphalt felts and coating (12/75 = 100)	173.5	174.7	174.4	180.4	177.2	173.7	172.9	171.4	165.8	r163.2	169.1	164.4	164.2	166.8
3251	Brick and structural clay tile	307.4	305.9	313.8	314.0	314.0	315.5	315.5	315.7	315.6	r328.3	333.7	334.9	335.7	337.5
3253	Ceramic wall and floor tile (12/75 = 100)	140.6	140.6	140.7	140.7	140.7	140.7	140.7	140.7	140.7	r140.7	138.1	139.7	146.8	146.8
3255	Clay refractories	352.8	356.3	358.8	356.9	357.0	350.3	350.3	351.1	351.1	r351.2	353.1	353.1	350.4	353.0
3259	Structural clay products, n.e.c.	219.7	215.9	219.0	219.0	219.0	218.9	219.0	219.0	215.7	r215.7	232.8	234.8	234.8	235.4
3261	Vitreous plumbing fixtures	265.0	264.2	263.9	267.2	269.1	270.3	269.7	272.1	273.3	275.1	175.3	276.0	276.9	277.2
3262	Vitreous china food utensils	357.8	360.2	360.2	360.2	360.8	370.2	377.7	380.1	380.1	r380.1	369.2	369.2	369.2	369.2
3263	Fine earthenware food utensils	318.2	316.9	316.9	316.9	323.5	324.8	326.0	365.7	365.7	r365.7	136.5	363.6	364.3	364.3
3269	Pottery products, n.e.c. (12/75 = 100)	167.3	167.4	167.4	167.4	169.6	171.9	173.7	186.5	186.6	r186.6	183.8	183.8	183.8	183.8
3274	Lime (12/75 = 100)	186.3	188.0	188.0	187.8	187.7	187.5	185.7	187.3	185.5	r185.1	188.1	185.5	186.5	187.3
3297	Nonclay refractories (12/74 = 100)	201.8	203.8	203.8	203.8	203.8	203.7	203.6	203.7	203.6	203.6	203.8	203.7	203.7	203.8
3482	Small arms ammunition (12/75 = 100)	164.2	170.3	170.3	149.0	150.1	150.6	174.1	175.1	175.1	r181.6	187.6	187.6	187.6	187.6
3623	Welding apparatus, electric (12/72 = 100)	239.6	241.6	242.4	242.8	243.0	243.3	243.3	243.6	244.0	r243.4	238.1	237.9	237.3	238.4
3636	Sewing machines (12/75 = 100)	154.6	154.3	153.6	153.6	154.2	154.2	154.2	154.2	154.4	r155.0	156.1	156.1	156.1	156.1
3641	Electric lamps	294.0	291.8	293.7	296.3	302.9	303.0	303.4	306.0	311.5	311.4	316.3	313.8	316.7	319.4
3648	Lighting equipment, n.e.c. (12/75 = 100)	170.0	171.1	171.2	171.2	171.3	171.3	171.4	171.4	171.5	r171.6	172.6	172.6	173.1	173.4
3671	Electron tubes, receiving type	382.1	375.4	375.4	380.2	380.3	414.0	414.1	431.6	432.0	431.9	431.9	431.9	432.2	432.4
3942	Dolls (12/75 = 100)	136.7	136.8	136.8	136.8	136.8	136.8	136.5	137.1	136.8	r136.8	137.4	137.4	137.4	137.3
3944	Games, toys, and children's vehicles	234.0	234.4	234.4	234.8	235.3	235.3	235.5	235.3	243.4	r241.8	237.9	237.9	237.9	231.9
3955	Carbon paper and inked ribbons (12/75 = 100)	140.0	140.4	140.5	139.3	139.3	139.2	139.4	139.2	139.2	139.2	139.2	139.2	139.2	139.2
3995	Burial caskets (6/76 = 100)	148.4	150.8	150.8	150.8	150.8	150.8	150.8	147.0	152.1	152.1	152.1	152.1	152.1	155.4
3996	Hard surface floor coverings (12/75 = 100)	155.9	155.0	155.7	156.9	158.9	158.9	156.8	159.2	159.2	159.2	159.4	159.4	159.4	162.0

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

NOTE: Indexes which were deleted in the September issue may now be found in Table 4 of the BLS monthly report, *Producer Prices and Price Indexes*.

r = revised.

PRODUCTIVITY DATA

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

Definitions

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

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

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

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

Notes on the data

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

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

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

[1977 = 100]

Item	1950	1955	1960	1965	1970	1975	1976	1977	1978	1979	1980	1981	1982
Business sector:													
Output per hour of all persons	50.4	58.3	65.2	78.3	86.2	94.5	97.6	100.0	100.6	99.4	98.9	101.3	101.2
Compensation per hour	20.0	26.4	33.9	41.7	58.2	85.5	92.9	100.0	108.6	118.7	131.2	143.9	155.1
Real compensation per hour	50.5	59.6	69.5	80.1	90.8	96.3	98.9	100.0	100.9	99.1	96.5	95.9	97.4
Unit labor costs	39.8	45.2	52.1	53.3	67.5	90.5	95.1	100.0	108.0	119.5	132.7	142.1	153.3
Unit nonlabor payments	43.4	47.6	50.6	57.6	63.2	90.4	94.0	100.0	106.7	112.8	119.0	136.2	136.9
Implicit price deflator	41.0	46.0	51.6	54.7	66.0	90.4	94.7	100.0	107.5	117.2	128.1	140.1	147.7
Nonfarm business sector:													
Output per hour of all persons	56.3	62.7	68.3	80.5	86.8	94.7	97.8	100.0	100.6	99.1	98.4	100.3	100.2
Compensation per hour	21.8	28.3	35.7	42.8	58.7	86.0	93.0	100.0	108.6	118.4	130.7	143.5	154.7
Real compensation per hour	55.0	64.0	73.0	82.2	91.5	96.8	99.0	100.0	100.9	98.9	96.1	95.6	97.1
Unit labor costs	38.8	r45.1	52.3	53.2	67.6	90.8	95.1	100.0	108.0	r119.5	132.8	143.0	54.4
Unit nonlabor payments	42.7	47.8	50.4	58.0	63.8	88.5	93.5	100.0	105.3	110.4	118.5	135.0	137.0
Implicit price deflator	40.1	46.0	51.6	54.8	66.3	90.0	94.6	100.0	107.1	116.5	128.1	140.4	148.6
Nonfinance corporations:													
Output per hour of all persons	(1)	(1)	68.0	81.9	87.4	95.5	98.2	100.0	100.9	100.7	99.8	102.3	102.8
Compensation per hour	(1)	(1)	37.0	43.9	59.4	86.1	92.9	100.0	108.5	118.7	130.9	143.6	154.8
Real compensation per hour	(1)	(1)	75.8	84.3	92.7	96.9	98.9	100.0	100.7	99.1	96.3	95.7	97.2
Unit labor costs	(1)	(1)	54.4	53.5	68.0	90.2	94.6	100.0	107.5	117.8	131.2	140.3	150.6
Unit nonlabor payments	(1)	(1)	54.6	60.8	63.1	90.8	95.0	100.0	104.2	106.9	117.4	134.4	137.6
Implicit price deflator	(1)	(1)	54.5	56.1	66.3	90.4	94.7	100.0	106.4	114.1	126.4	138.3	146.1
Manufacturing:													
Output per hour of all persons	49.4	56.4	60.0	74.5	79.1	93.4	97.5	100.0	100.8	101.5	101.7	105.3	106.5
Compensation per hour	21.5	28.8	36.7	42.8	57.6	85.4	92.3	100.0	108.3	118.8	132.7	145.8	158.2
Real compensation per hour	54.0	65.1	75.1	82.3	89.8	96.2	98.3	100.0	100.6	99.2	97.6	97.2	99.3
Unit labor costs	43.4	51.0	61.1	57.5	72.7	91.5	94.6	100.0	107.4	117.0	130.5	138.5	148.5
Unit nonlabor payments	54.3	58.5	61.1	69.3	65.0	87.3	93.7	100.0	102.5	99.9	97.7	110.2	109.2
Implicit price deflator	46.6	53.2	61.1	61.0	70.5	90.3	94.4	100.0	106.0	112.0	120.9	130.2	137.0

[1] Not available. r = revised.

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

Item	Year											Annual rate of change	
	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1950-82	1972-82
Business sector:													
Output per hour of all persons	3.5	2.6	−2.4	2.2	3.3	2.4	0.6	−1.2	−0.5	2.4	−0.1	2.2	0.9
Compensation per hour	6.5	8.0	9.4	9.6	8.6	7.7	8.6	9.4	10.5	9.7	7.7	6.6	8.9
Real compensation per hour	3.1	1.6	−1.4	0.5	2.6	1.2	0.9	−1.7	−2.6	−0.6	1.5	2.1	0.2
Unit labor costs	2.9	5.3	12.1	7.3	5.1	5.1	8.0	10.7	11.1	7.1	7.9	4.3	7.9
Unit nonlabor payments	4.5	5.9	4.4	15.1	4.0	6.4	6.7	5.8	5.5	14.4	0.5	3.7	6.8
Implicit price deflator	3.4	5.5	9.5	9.8	4.7	5.6	7.5	9.0	9.2	9.4	5.4	4.1	7.6
Nonfarm business sector:													
Output per hour of all persons	3.7	2.4	−2.5	2.0	3.2	2.2	0.6	−1.5	−0.7	1.9	−0.1	1.8	0.8
Compensation per hour	6.7	7.6	9.4	9.6	8.1	7.5	8.6	9.0	10.4	9.8	7.8	6.3	8.8
Real compensation per hour	3.3	1.3	−1.4	0.4	2.2	1.0	0.9	−2.0	−2.8	−0.6	1.6	1.8	0.1
Unit labor costs	2.8	5.0	12.2	7.5	4.8	5.2	8.0	10.7	11.1	7.7	7.9	4.4	8.0
Unit nonlabor payments	3.2	1.3	5.9	16.7	5.7	6.9	5.3	4.8	7.4	13.9	1.4	3.7	6.8
Implicit price deflator	3.0	3.8	10.2	10.3	5.1	5.7	7.1	8.8	10.0	9.6	5.8	4.2	7.6
Nonfinancial corporations:													
Output per hour of all employees	2.9	2.4	−3.7	2.9	2.9	1.8	0.9	−0.2	−0.9	2.5	0.5	[1]	0.9
Compensation per hour	5.7	7.5	9.4	9.6	7.9	7.6	8.5	9.4	10.3	9.7	7.8	[1]	8.8
Real compensation per hour	2.4	1.2	−1.5	0.4	2.0	1.1	0.7	−1.7	−2.8	−0.6	1.6	[1]	0.0
Unit labor costs	2.8	4.9	13.6	6.5	4.9	5.7	7.5	9.6	11.3	7.0	7.3	[1]	7.8
Unit nonlabor payments	2.7	1.5	7.1	20.1	4.6	5.3	4.2	2.6	9.8	14.5	2.4	[1]	7.1
Implicit price deflator	2.8	3.8	11.4	10.9	4.8	5.6	6.4	7.2	10.8	9.4	5.7	[1]	7.6
Manufacturing:													
Output per hour of all persons	5.0	5.4	−2.4	2.9	4.4	2.5	0.8	0.7	0.2	3.5	c1.2	2.4	r1.9
Compensation per hour	5.4	7.2	10.6	11.9	8.0	8.3	8.3	9.7	11.7	9.9	8.5	6.4	9.4
Real compensation per hour	2.0	0.9	−0.3	2.5	2.1	1.8	0.6	−1.4	−1.6	−4	2.2	1.9	0.6
Unit labor costs	0.3	1.7	13.3	8.8	3.4	5.7	7.4	9.0	11.5	6.1	7.2	3.9	7.4
Unit nonlabor payments	0.8	−3.3	−1.8	25.9	7.4	6.7	2.5	−2.6	−2.2	12.8	−0.9	p2.2	p4.1
Implicit price deflator	0.5	0.3	9.0	13.1	4.6	6.0	6.0	5.7	7.9	7.7	5.2	p3.4	p6.5

[1] Not available.
r = revised.
p = preliminary.
c = corrected.

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

[1977 = 100]

Item	Annual average		Quarterly indexes										
			1980	1981				1982				1982	
	1981	1982	IV	I	II	III	IV	I	II	III	IV	I[p]	II[p]
Business sector:													
Output per hour of all persons	101.3	101.2	99.1	100.5	101.1	102.3	101.2	101.1	100.7	101.1	101.9	102.5	r103.9
Compensation per hour	143.9	155.1	136.0	139.7	142.2	145.5	148.2	151.6	153.9	156.5	158.7	160.7	r162.1
Real compensation per hour	95.9	97.4	96.1	96.3	96.1	95.6	95.6	97.1	97.4	97.1	98.0	99.4	r99.2
Unit labor costs	142.1	153.3	137.2	139.0	140.7	142.3	r146.4	149.9	152.9	154.7	155.6	156.9	r156.1
Unit nonlabor payments	136.2	136.9	124.2	131.2	133.4	139.9	140.2	137.0	137.0	136.3	137.4	140.8	r145.8
Implicit price deflator	140.1	147.7	132.8	136.3	138.2	141.5	144.3	145.5	147.5	148.5	149.4	151.5	r152.6
Nonfarm business sector:													
Output per hour of all persons	100.3	100.2	98.8	100.1	100.1	101.1	99.9	100.0	99.9	100.4	100.8	101.7	r103.2
Compensation per hour	143.5	154.7	135.5	139.3	141.8	145.1	147.7	151.3	153.5	156.1	158.3	161.0	r162.7
Real compensation per hour	95.6	97.1	95.8	96.0	95.8	95.3	95.4	96.9	97.1	96.9	97.8	99.5	99.6
Unit labor costs	143.0	154.4	137.2	r139.2	141.6	143.5	147.8	151.3	153.6	155.4	157.1	158.3	r157.6
Unit nonlabor payments	135.0	137.0	123.2	130.3	132.2	138.3	139.5	136.4	137.7	136.5	137.2	140.7	145.7
Implicit price deflator	140.4	148.6	132.5	r136.2	138.4	141.8	145.0	146.4	148.3	149.1	150.5	152.4	r153.6
Nonfinancial corporations:													
Output per hour of all employees	102.3	102.8	r100.4	101.8	102.1	103.0	102.2	102.4	102.3	103.2	103.4	104.3	p105.7
Compensation per hour	143.6	154.8	135.8	139.5	142.0	145.0	147.8	151.7	153.7	156.1	158.1	160.4	p161.6
Real compensation per hour	95.7	97.2	96.0	96.2	95.9	95.2	95.4	97.2	97.2	96.9	97.7	99.2	p98.9
Total unit costs	142.7	153.5	135.9	138.4	141.1	143.6	147.7	150.9	153.1	153.8	156.3	156.7	p155.7
Unit labor costs	140.3	150.6	135.3	137.0	139.0	140.7	144.6	148.1	150.2	151.1	152.9	153.9	p152.9
Unit nonlabor costs	149.4	161.8	137.9	142.3	147.0	151.9	156.6	158.9	161.2	161.3	165.9	164.7	p163.5
Unit profits	104.1	88.9	90.9	103.0	100.3	108.6	104.2	90.8	90.3	91.2	83.0	96.1	p114.1
Implicit price deflator	138.3	146.1	130.8	134.3	136.4	139.6	142.7	144.0	145.9	146.6	147.9	149.7	p150.9
Manufacturing:													
Output per hour of all persons	105.3	106.5	103.6	105.1	105.4	106.1	104.4	105.1	105.3	107.8	108.1	110.2	r112.4
Compensation per hour	145.8	158.2	138.3	141.6	144.3	147.0	150.5	155.1	157.1	159.6	161.4	165.5	r166.4
Real compensation per hour	97.2	99.3	97.8	97.5	97.5	96.5	97.1	99.4	99.4	99.1	99.7	102.3	101.8
Unit labor costs	138.5	148.5	133.5	136.9	136.9	138.5	144.1	147.6	149.1	148.1	149.3	150.2	r148.0

[1] Not available.

r = revised.

p = preliminary.

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

Item	Quarterly percent change at annual rate					Percent change from same quarter a year ago						
	IV 1981 to I 1982	I 1982 to II 1982	II 1982 to III 1982	III 1982 to IV 1982	IV 1982 to I 1983	I 1983 to II 1983	I 1981 to I 1982	II 1981 to II 1982	III 1981 to III 1982	IV 1981 to IV 1982	I 1982 to I 1983	II 1982 to II 1983
Business sector:												
Output per hour of all persons	−0.4	1.6	1.7	3.3	2.0	r5.7	0.6	−0.4	1.1	0.7	1.3	r3.2
Compensation per hour	9.4	6.4	6.7	5.7	5.4	r3.5	8.5	8.2	7.5	7.1	6.1	r5.3
Real compensation per hour	6.3	1.1	−1.0	3.7	5.8	r−0.7	0.8	1.3	1.6	2.5	2.4	r1.9
Unit labor costs	9.8	8.1	5.0	2.3	3.3	r−2.1	7.9	8.7	8.7	6.3	4.7	r2.1
Unit nonlabor payments	−8.8	−0.1	2.0	3.2	10.5	r15.0	4.4	2.7	2.6	2.0	2.8	6.5
Implicit price deflator	3.4	5.5	2.7	2.6	5.5	r3.1	6.7	6.7	4.9	3.5	4.1	r3.5
Nonfarm business sector:												
Output per hour of all persons	0.1	0.4	2.3	1.3	3.7	r6.1	−0.1	−0.3	0.6	0.8	1.7	r3.3
Compensation per hour	10.0	5.8	7.2	5.8	6.8	r4.3	8.6	8.2	7.6	7.2	6.4	r6.0
Real compensation per hour	6.8	0.5	−0.6	3.7	7.2	r0.1	0.9	1.3	1.7	2.6	2.7	2.6
Unit labor costs	9.9	6.2	4.7	r4.4	3.0	r1.6	8.7	8.5	8.3	6.3	4.6	r2.6
Unit nonlabor payments	8.5	3.7	−3.4	2.0	10.6	r15.0	4.7	4.2	−1.3	−1.6	r3.1	5.8
Implicit price deflator	3.7	5.4	2.2	3.7	5.3	r3.3	7.4	7.1	5.2	3.7	4.1	r3.6
Nonfinancial corporations:												
Output per hour of all employees	0.9	0.5	3.8	0.6	3.4	p5.5	0.6	0.1	0.2	1.2	1.8	p3.3
Compensation per hour	10.9	5.4	6.4	5.4	6.0	p2.9	8.7	8.2	7.6	7.0	5.8	p5.2
Real compensation per hour	7.7	0.1	−1.3	3.4	6.4	p−1.3	1.0	1.3	1.7	2.4	2.1	p1.7
Total units costs	8.8	6.0	1.8	6.7	1.0	p−2.5	9.0	8.5	7.1	5.8	3.8	p1.7
Unit labor costs	9.9	6.0	2.4	4.8	2.5	p−2.4	8.1	8.1	7.4	5.7	3.9	p1.8
Unit nonlabor costs	6.1	6.0	0.1	11.9	−2.8	p−2.8	11.7	9.7	6.2	6.0	3.7	p1.4
Unit profits	−42.2	−2.1	3.8	−31.4	79.9	p98.5	−1.8	−9.9	−16.1	20.3	5.8	p26.3
Implicit price deflator	3.6	5.4	1.9	3.6	5.1	p3.2	7.2	7.0	5.0	3.6	4.0	p3.4
Manufacturing:												
Output per hour of all persons	c2.8	0.8	9.6	1.2	8.0	r8.4	0.8	−0.1	1.6	3.5	4.8	r6.7
Compensation per hour	r13.1	5.1	6.5	4.5	10.7	r2.1	9.6	8.8	8.6	7.3	6.7	5.9
Real compensation per hour	9.8	c−0.2	−1.2	2.5	11.1	r−21	1.8	1.9	2.6	2.7	3.0	r2.5
Unit labor costs	9.9	4.3	−2.8	3.3	2.5	r−5.9	9.5	8.9	6.9	3.6	1.8	r−0.8

[1] Not available.
c = corrected.
r = revised.
p = preliminary.

WAGE AND COMPENSATION DATA

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

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

Definitions

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

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

Data on negotiated wage changes apply to private nonfarm industry collective bargaining agreements covering 1,000 workers or more. Data on compensation changes apply only to those agreements covering 5,000 workers or more. *First-year* wage or compensation changes refer to average negotiated changes for workers covered by settlements reached in the period and implemented within the first 12 months after the effective date of the agreement. *Changes over the life of the agreement* refer to all adjustments specified in the contract, expressed as an average annual rate. These measures exclude wage changes that may occur under cost-of-living adjustment clauses, that are triggered by movements in the Consumer Price Index. *Wage-rate changes* are expressed as a percent of straight-time hourly earnings; *compensation changes* are expressed as a percent of total wages and benefits.

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

Notes on the data

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

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

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

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

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

32. Employment Cost Index, by occupation and industry group

[June 1981 = 100]

Series	1981			1982				1983		Percent change	
										3 months ended	12 months ended
	June	Sept.	Dec.	March	June	Sept.	Dec.	March	June	June 1983	
Civilian workers[1]	100.0	102.6	104.5	106.3	107.5	110.1	111.4	113.2	114.5	1.1	6.5
Workers, by occupational group											
White-collar workers	100.0	102.7	104.9	106.5	107.7	110.7	111.9	113.7	114.9	1.1	6.7
Blue-collar workers	100.0	102.3	104.1	105.7	107.1	109.2	110.5	112.3	113.6	1.2	6.1
Service workers	100.0	102.8	104.2	107.2	108.3	110.8	112.4	114.3	115.1	.7	6.3
Workers, by industry division											
Manufacturing	100.0	102.1	104.0	106.0	107.2	109.3	110.4	c 112.5	113.5	.9	5.9
Nonmanufacturing	100.0	102.8	104.8	106.4	107.7	110.5	111.8	c 113.5	114.9	1.2	6.7
Services	100.0	104.4	107.1	108.2	109.2	113.5	115.0	116.6	117.1	.4	7.2
Public administration[2]	100.0	104.3	106.0	108.1	109.1	112.8	113.6	116.2	117.0	.7	7.2
Private industry workers	100.0	102.0	104.0	105.8	107.2	109.3	110.7	112.6	113.9	1.2	6.3.
Workers, by occupational group											
White-collar workers	100.0	101.8	104.0	105.8	107.2	109.5	110.8	112.8	114.2	1.2	6.5
Blue-collar workers	100.0	102.2	104.0	105.6	107.0	109.0	110.3	112.1	113.5	1.2	6.1
Service workers	100.0	101.9	103.1	106.7	107.9	109.6	111.8	113.8	114.6	.7	6.2
Workers, by industry division											
Manufacturing	100.0	102.1	104.0	106.0	107.2	109.3	110.4	112.5	113.5	.9	5.9
Nonmanufacturing	100.0	102.0	103.9	105.7	107.1	109.3	110.8	112.6	114.2	1.4	6.6
State and local government workers	100.0	106.3	107.4	108.8	109.3	114.3	115.1	116.5	117.1	.5	7.1
Workers, by occupational group											
White-collar workers	100.0	106.7	107.8	109.1	109.5	114.9	115.8	117.0	117.5	.4	7.3
Blue-collar workers	100.0	104.2	105.9	108.2	108.9	112.7	113.0	114.9	115.8	.8	6.3
Workers, by industry division											
Services	100.0	105.8	107.9	109.0	109.4	114.9	115.9	116.8	117.4	.5	7.3
Schools	100.0	106.0	107.9	108.9	109.1	114.8	115.8	116.6	116.9	.3	7.1
Elementary and secondary	100.0	106.3	108.3	109.3	109.5	115.6	116.6	117.2	117.4	.2	7.2
Hospitals and other services[3]	100.0	105.0	107.8	109.5	110.3	115.3	116.0	117.5	118.8	1.1	7.7
Public administration[2]	100.0	104.3	106.0	108.1	109.1	112.5	113.6	116.2	117.0	.7	7.2

[1] Excludes farm, household, and Federal workers.

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

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

c = corrected.

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

[June 1981 = 100]

Series	1981			1982				1983		Percent change	
										3 months ended	12 months ended
	June	Sept.	Dec.	March	June	Sept.	Dec.	March	June	June 1983	
Civilian workers[1]	100.0	102.5	104.4	106.3	107.3	109.7	110.9	112.2	113.4	1.1	5.7
Workers, by occupational group											
White-collar workers	100.0	102.6	104.7	106.7	107.6	110.4	111.4	113.0	114.2	1.1	6.1
Blue-collar workers	100.0	102.4	104.0	106.5	106.7	108.6	109.8	110.8	112.0	1.1	5.0
Service workers	100.0	102.5	103.6	106.8	107.9	110.1	111.8	113.2	113.9	.6	5.6
Workers, by industry division											
Manufacturing	100.0	102.1	104.0	105.9	107.0	108.8	109.8	111.0	112.0	.9	4.7
Nonmanufacturing	100.0	102.7	104.5	106.5	107.5	110.1	111.3	112.7	114.0	1.2	6.0
Services	100.0	104.4	106.6	108.6	109.5	113.2	114.4	115.8	116.3	.4	6.2
Public administration[2]	100.0	103.8	106.5	107.5	108.4	111.9	112.6	114.6	115.4	.7	6.5
Private industry workers	100.0	102.0	103.8	105.9	107.1	109.0	110.3	111.6	112.9	1.2	5.4
Workers, by occupational group											
White-collar workers	100.0	101.8	103.9	106.2	107.3	109.4	110.6	112.2	113.6	1.2	5.9
Professional and technical workers	100.0	103.3	105.5	108.0	109.4	111.8	112.9	114.8	115.9	1.0	5.9
Managers and administrators	100.0	101.6	102.8	105.8	107.2	108.5	109.3	112.0	114.0	1.8	6.3
Salesworkers	100.0	98.0	101.9	102.2	101.8	104.5	106.2	105.7	107.1	1.3	5.2
Clerical workers	100.0	102.7	104.2	107.0	108.3	110.3	111.6	113.4	114.6	1.1	5.8
Blue-collar workers	100.0	102.3	103.9	105.4	106.6	108.5	109.7	110.7	111.9	1.1	5.0
Craft and kindred workers	100.0	102.9	104.3	106.2	107.6	109.6	111.2	112.2	113.4	1.1	5.4
Operatives, except transport	100.0	102.1	104.1	105.4	106.6	108.3	109.3	110.0	111.1	1.0	4.2
Transport equipment operatives	100.0	101.0	102.7	103.2	104.1	106.0	106.9	108.0	110.3	2.1	6.0
Nonfarm laborers	100.0	101.5	103.3	104.1	105.1	106.5	107.8	109.0	109.8	.7	4.5
Service workers	100.0	101.8	102.7	106.7	107.9	109.3	111.4	112.9	113.5	.5	5.2
Workers, by industry division											
Manufacturing	100.0	102.1	104.0	105.9	107.0	108.8	109.8	111.0	112.0	.9	4.7
Durables	100.0	102.1	104.5	106.3	107.4	109.0	110.3	111.1	111.8	.6	4.1
Nondurables	100.0	102.0	103.1	105.3	106.3	108.5	109.1	110.9	112.3	1.3	5.6
Nonmanufacturing	100.0	102.0	103.8	105.9	107.1	109.1	110.5	112.0	113.4	1.3	5.9
Construction	100.0	103.0	104.3	105.9	107.3	109.1	109.7	110.4	112.1	1.5	4.5
Transportation and public utilities	100.0	102.0	103.6	105.7	106.9	109.5	111.1	112.9	114.7	1.6	7.3
Wholesale and retail trade	100.0	101.3	102.3	103.9	105.8	106.5	107.2	108.5	110.8	2.1	4.7
Wholesale trade	100.0	102.0	103.4	106.3	108.9	109.0	109.8	111.8	114.1	2.1	4.8
Retail trade	100.0	101.0	101.9	103.0	104.5	106.5	106.1	107.2	109.4	2.1	4.7
Finance, insurance, and real estate	100.0	98.3	102.3	103.7	102.4	106.1	109.0	110.6	111.1	.5	8.5
Services	100.0	103.6	105.8	108.8	110.0	112.5	114.3	116.0	116.6	.5	6.0
State and local government workers	100.0	105.0	107.0	108.2	108.7	113.5	114.0	115.1	115.7	.5	6.4
Workers, by occupational group											
White-collar workers	100.0	105.4	107.5	108.5	108.9	114.2	114.6	115.6	116.1	.4	6.6
Blue-collar workers	100.0	103.9	105.5	107.5	107.9	111.5	112.0	113.3	114.3	.9	5.9
Workers, by industry division											
Services	100.0	105.5	107.6	108.4	108.8	114.2	114.6	115.5	115.9	.3	6.5
Schools	100.0	105.7	107.7	108.3	108.5	114.2	114.5	115.2	115.4	.2	6.4
Elementary and secondary	100.0	106.0	107.9	108.7	108.8	114.9	115.1	115.6	115.8	.2	6.4
Hospitals and other services[3]	100.0	104.6	107.3	108.8	109.5	114.3	114.9	116.5	117.7	1.0	7.5
Public administration[2]	100.0	103.8	105.5	107.5	108.4	111.9	112.6	114.6	115.4	.7	6.5

[1] Excludes farm, household, and Federal workers.

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

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

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

[June 1981 = 100]

Series	1981			1982				1983		Percent change	
										3 months ended	12 months ended
	June	Sept.	Dec.	March	June	Sept.	Dec.	March	June	June 1983	
COMPENSATION											
Workers, by bargaining status[1]											
Union	100.0	102.5	104.8	106.5	108.4	110.6	112.3	114.5	116.0	1.3	7.0
Manufacturing	100.0	102.3	104.6	106.3	108.0	110.3	111.8	114.0	114.8	.7	6.3
Nonmanufacturing	100.0	102.7	105.0	106.8	108.7	111.0	112.8	114.9	117.1	1.9	7.7
Nonunion	100.0	101.7	103.5	105.3	106.5	108.5	109.7	111.5	112.8	1.2	5.9
Manufacturing	100.0	101.8	103.5	105.7	106.6	106.4	109.2	111.2	112.3	1.0	5.3
Nonmanufacturing	100.0	101.7	103.5	106.2	106.4	108.6	109.9	111.6	113.0	1.3	6.2
Workers, by area size[1]											
Metropolitan areas	100.0	102.1	104.1	105.7	107.2	109.4	110.9	112.9	114.2	1.2	6.5
Other areas	100.0	101.8	103.2	106.2	107.0	108.6	109.1	110.8	112.3	1.4	5.0
WAGES AND SALARIES											
Workers, by bargaining status[1]											
Union	100.0	102.7	105.0	106.5	108.1	110.3	111.8	112.9	114.2	1.2	5.6
Manufacturing	100.0	102.6	104.7	105.9	107.3	109.5	110.8	111.4	112.3	.8	4.7
Nonmanufacturing	100.0	102.8	105.2	107.0	108.8	111.1	112.7	114.3	116.0	1.5	6.6
Nonunion	100.0	101.6	103.2	105.6	106.5	108.3	109.5	110.9	112.2	1.2	5.4
Manufacturing	100.0	101.7	103.3	105.9	106.7	108.2	109.1	110.7	111.8	1.0	4.8
Nonmanufacturing	100.0	101.6	103.2	105.5	106.4	108.3	109.6	111.0	112.4	1.3	5.6
Workers, by region[1]											
Northeast	100.0	101.7	104.4	106.1	106.7	109.7	111.5	112.0	113.6	1.4	6.5
South	100.0	101.9	102.8	105.7	107.4	108.8	109.8	111.4	112.5	1.0	4.7
North Central	100.0	101.6	103.3	104.7	106.1	107.6	108.6	110.1	111.5	1.3	5.1
West	100.0	103.2	105.1	107.9	108.6	110.7	112.0	114.1	114.9	.7	5.8
Workers by area size[1]											
Metropolitan areas	100.0	102.1	104.0	105.9	107.1	109.1	110.5	111.9	113.2	1.2	5.7
Other areas	100.0	101.8	103.1	106.0	106.8	108.3	108.8	110.1	111.4	1.2	4.3

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

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

[In percent]

Measure	Annual average					Quarterly average							
						1981		1982				1983[p]	
	1978	1979	1980	1981	1982	III	IV	I	II	III	IV	I	II
Total compensation changes, covering 5,000 workers or more, all industries:													
First year of contract	8.3	9.0	10.4	10.2	3.2	10.5	11.0	1.9	2.6	6.2	3.3	−1.7	4.7
Annual rate over life of contract	6.3	6.6	7.1	8.3	2.8	8.1	5.8	1.2	0	4.7	4.8	1.5	3.9
Wage rate changes covering at least 1,000 workers, all industries:													
First year of contract	7.6	7.4	9.5	9.8	3.8	10.8	9.0	3.0	3.4	5.4	3.8	−1.2	2.9
Annual rate over life of contract	6.4	6.0	7.1	7.9	3.6	8.7	5.7	2.8	3.2	4.5	4.8	2.3	3.1
Manufacturing:													
First year of contract	8.3	6.9	7.4	7.2	2.8	9.0	6.6	2.5	1.8	5.1	4.1	−3.4	1.3
Annual rate over life of contract	6.6	5.4	5.4	6.1	2.6	7.5	5.4	2.7	1.7	3.9	4.5	.9	1.6
Nonmanufacturing (excluding construction):													
First year of contract	8.0	7.6	9.5	9.8	4.3	8.6	9.6	2.7	6.6	5.5	3.6	3.9	6.8
Annual rate over life of contract	6.5	6.2	6.6	7.3	4.1	7.2	5.6	2.1	6.1	4.8	5.2	5.9	6.1
Construction:													
First year of contract	6.5	8.8	13.6	13.5	6.5	16.4	11.4	8.6	6.2	6.3	3.4	−.3	1.9
Annual rate over life of contract	6.2	8.3	11.5	11.3	6.3	12.4	11.7	8.2	6.3	5.9	2.9	2.6	2.5

p = preliminary.

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

Measure	Year					Year and quarter							
	1978	1979	1980	1981	1982	1981		1982				1983p	
						III	IV	I	II	III	IV	I	II
Average percent adjustment (including no change):													
All industries	8.2	9.1	9.9	9.5	6.8	3.3	1.5	1.0	2.0	2.4	1.3	0.4	1.3
Manufacturing	8.6	9.6	10.2	9.4	5.2	3.1	1.9	.9	1.0	1.7	1.5	−.4	1.0
Nonmanufacturing	7.9	8.8	9.7	9.5	7.9	3.4	1.1	1.1	2.7	2.9	1.2	.9	1.4
From settlements reached in period	2.0	3.0	3.6	2.5	1.7	.5	.4	.2	.4	.5	.6	−.2	.2
Deferred from settlements reached in earlier period	3.7	3.0	3.5	3.8	3.6	1.5	.4	.6	1.4	1.3	.4	.4	1.0
From cost-of-living clauses	2.4	3.1	2.8	3.2	1.4	1.2	.6	.3	.2	.6	.3	.1	.1
Total number of workers receiving wage change (in thousands)[1]	—	—	—	8,648	7,852	4,364	3,225	2,878	3,423	3,760	3,441	3,030	3,108
From settlements reached in period	—	—	—	2,270	1,907	540	604	204	511	620	825	434	454
Deferred from settlements reached in earlier period	—	—	—	6,267	4,846	3,023	882	1,001	1,594	2,400	860	848	1,446
From cost-of-living clauses	—	—	—	4,593	3,830	2,934	2,179	1,920	1,568	2,251	1,970	2,075	1,395
Number of workers receiving no adjustments (in thousands)	—	—	—	145	483	4,428	5,568	5,457	4,912	4,575	4,895	5,085	5,007

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

p = preliminary.

WORK STOPPAGE DATA

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

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

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

Month and year	Number of stoppages		Workers involved		Days idle	
	Beginning in month or year	In effect during month	Beginning in month or year (in thousands)	In effect during month (in thousands)	Number (in thousands)	Percent of estimated working time
1947	270		1,629		25,720	
1948	245		1,435		26,127	.22
1949	262		2,537		43,420	.38
1950	424		1,698		30,390	.26
1951	415		1,462		15,070	.12
1952	470		2,746		48,820	.38
1953	437		1,623		18,130	.14
1954	265		1,075		16,630	.13
1955	363		2,055		21,180	.16
1956	287		1,370		26,840	.20
1957	279		887		10,340	.07
1958	332		1,587		17,900	.13
1959	245		1,381		60,850	.43
1960	222		896		13,260	.09
1961	195		1,031		10,140	.07
1962	211		793		11,760	.08
1963	181		512		10,020	.07
1964	246		1,183		16,220	.11
1965	268		999		15,140	.10
1966	321		1,300		16,000	.10
1967	381		2,192		31,320	.18
1968	392		1,855		35,567	.20
1969	412		1,576		29,397	.16
1970	381		2,468		52,761	.29
1971	298		2,516		35,538	.19
1972	250		975		16,764	.09
1973	317		1,400		16,260	.08
1974	424		1,796		31,809	.16
1975	235		965		17,563	.09
1976	231		1,519		23,962	.12
1977	298		1,212		21,258	.10
1978	219		1,006		23,774	.11
1979	235		1,021		20,409	.09
1980	187		795		20,844	.09
1981	145		729		16,908	.07
1982	96		656		9,061	.04
1982 January	2	4	6.1	11.4	202.8	.01
February	3	7	3.9	15.3	241.1	.01
March	4	9	13.3	26.1	357.0	.02
April	14	21	59.5	79.1	533.1	.03
May	15	23	42.7	66.1	657.6	.04
June	18	27	42.8	66.9	907.2	.05
July	13	25	38.4	65.9	844.7	.04
1983p January	1	3	1.6	38.0	794.8	.04
February	5	7	14.0	50.4	844.4	.05
March	5	10	10.5	54.9	1,131.5	.05
April	2	9	2.8	52.4	789.5	.04
May	r11	r16	r23.6	r32.9	r493.9	.03
June	r13	r22	r56.7	r76.6	r675.9	.03
July	8	20	40.8	75.0	1,048.3	.06

p = preliminary. r = revised.

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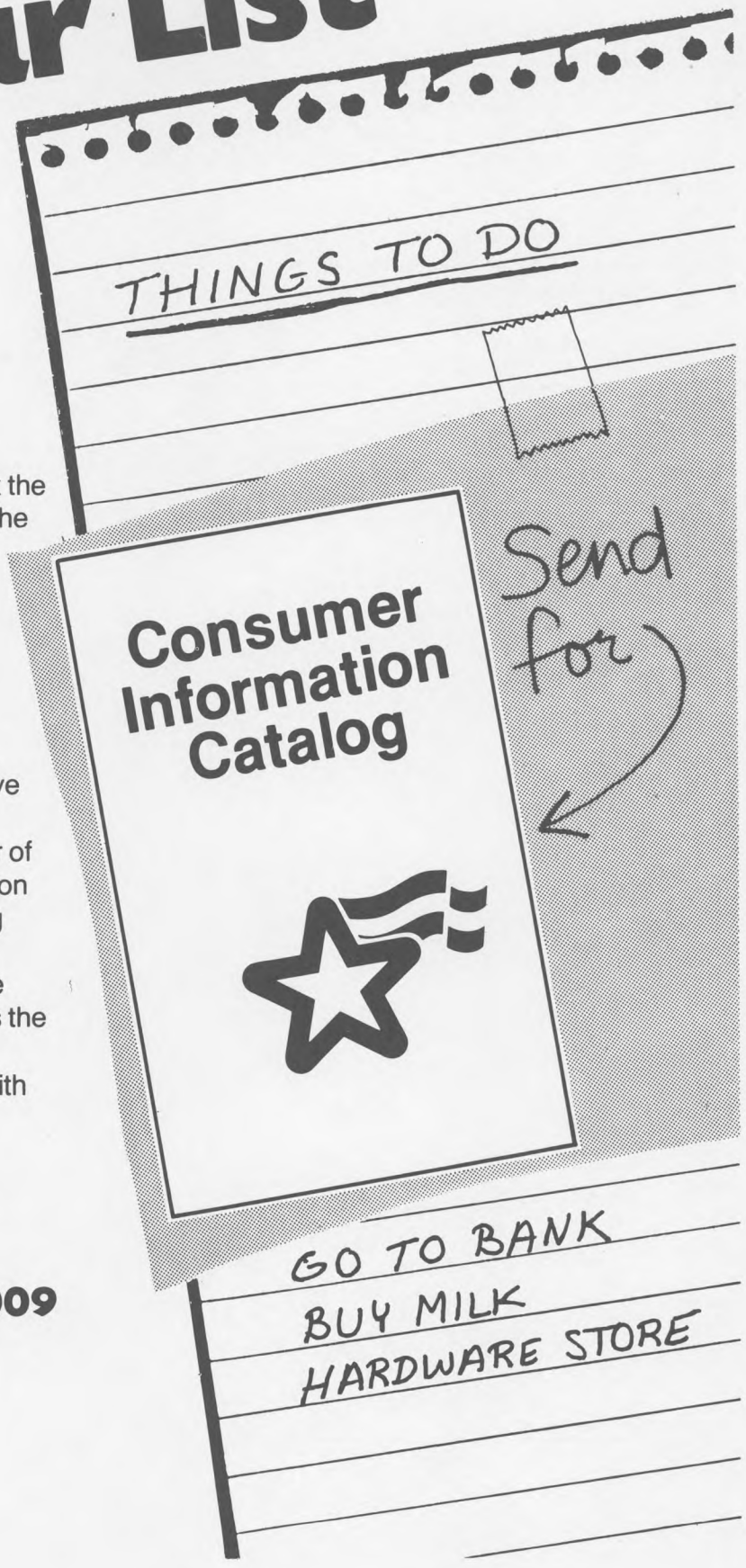

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