



MONTHLY LABOR REVIEW

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Bureau of Labor Statistics
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- Employment profile of older women
- Labor force activity from a new perspective
- Eye care sponsored by employers





U.S. DEPARTMENT OF LABOR
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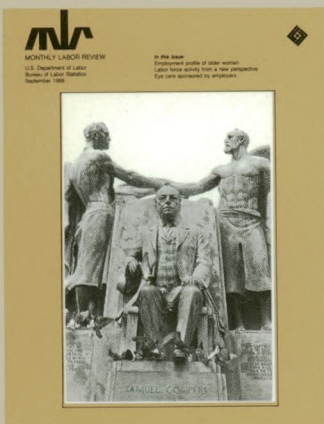
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Employment characteristics of older women, 1987

Early retirement by men and increased labor force participation by women in their mid-fifties have rapidly enlarged the female share of the older paid work force

DIANE E. HERZ

Since the late 1970's, the number of youths in the labor force has fallen by 2.4 million and labor force growth of women in the central age groups (25-44) has slowed considerably. Some employers have found it increasingly difficult to recruit workers and have turned to older persons (age 55 and over) to fill their hiring needs. As the "graying of America" progresses, older workers may become a greatly sought-after resource.

However, while the attractiveness of older persons as a source of labor may have increased, work force participation among those age 55 and over has, until the last few years, declined steadily. Understanding who older workers are, why they leave the labor force or continue to work, and what types of jobs they hold is critical for developing strategies aimed at increasing, or at least maintaining, their employment.¹

Most past studies on older workers and retirement have largely ignored women, partly because the female share of the older paid work force has traditionally been small. In 1950, for example, only 2 of 10 workers age 55 and over were women. Since then, early retirement by men and increased labor force participation by women in their mid-fifties have expanded that proportion rapidly. As a result, it is no longer possible to ignore the labor force

behavior of women age 55 and over, who now are 4 of every 10 older workers.

This article focuses on women age 55 and over who work. It first presents an overview of the group's work activity, occupational distribution, education, and earnings, and then discusses these characteristics as they vary according to marital status and race. The data for this study come primarily from the Current Population Survey (CPS).² Although it is limited in longitudinal capability, the CPS is probably the most comprehensive source of data on employment of older women. Where possible, other sources are used to supplement CPS findings.

Work activity

Recent trends. While labor force participation of men age 55 and over has declined dramatically, that of older women as a group has remained remarkably stable. In 1987, 6.2 million women, or 2 of 10 age 55 or older, were in the labor force—about the same proportion as 20 years earlier. However, between 1967 and 1987, the labor force patterns of subgroups of older women varied. Women between the ages of 55 and 59 participated in the general increase in female labor force activity, although to a lesser extent than younger groups of women. (See table 1.) In contrast, the rates for women ages 60 to 61 were largely unchanged. Women in their mid to late sixties, like their male counterparts, responded to changes in both Social

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Table 1. Labor force status of the population by sex and selected ages, 1967 and 1987 annual averages

Year and age	Women			Men		
	Population	Labor force	Labor force participation rate	Population	Labor force	Labor force participation rate
1967						
25-54	35,265	16,675	47.3	32,361	31,255	96.6
55-64	9,092	3,855	42.4	8,218	6,937	84.4
55-59	4,898	2,370	48.4	4,495	4,050	90.1
60-64	4,195	1,490	35.5	3,724	2,887	77.5
60-61	1,777	728	41.0	1,589	1,334	84.0
62-64	2,418	762	31.5	2,135	1,553	72.7
65 and over	10,222	984	9.6	7,811	2,125	27.2
65-69	3,485	593	17.0	2,896	1,260	43.5
70 and over	6,737	391	5.8	4,915	865	17.6
1987						
25-54	50,763	36,485	71.9	48,471	45,419	93.7
55-64	11,567	4,937	42.7	10,267	6,940	67.6
55-59	5,787	3,019	52.2	5,249	4,185	79.7
60-64	5,781	1,918	33.2	5,018	2,755	54.9
60-61	2,352	965	41.0	2,068	1,397	67.6
62-64	3,429	953	28.0	2,950	1,358	46.0
65 and over	16,476	1,221	7.4	11,632	1,899	16.3
65-69	5,325	761	14.3	4,411	1,138	25.8
70 and over	11,151	459	4.1	7,221	761	10.5

Security and private pension benefits by reducing their labor force participation.³

As table 1 illustrates, participation rates decline rapidly with age. This occurs for two reasons. First, as women get older, many leave their jobs and withdraw from the labor force. This is especially common at age 62, when eligibility begins for reduced Social Security benefits, and at age 65, for full benefits. Second, the women in the 55-and-over group who were born earliest participated in the labor market to a lesser extent than those born 10 or 15 years later. Thus, some of the age differences observed in the 1987 "snapshot" are not totally a result of aging; they also represent a cohort effect. Cohort effects may include differences in work patterns, attitudes, and education levels between groups of women born at different times.

Women who continue working beyond normal retirement age often reduce their work activity in terms of hours, weeks, or both.⁴ Chart 1 illustrates a shift in work schedules with age. In 1986, women between ages 55 and 61 worked similar schedules to those of their central-age counterparts—more than half worked full time and year round. That proportion edged down for those between ages 62 and 64, and only a quarter of women age 65 or older had such schedules. Similarly, the proportion of women working the most abbreviated schedules (part time for less than 50 weeks) increased to 1 of 5 after age 62 and 2 of 5 after age 70.

Changing worklife patterns. Women born at different times have had strikingly different worklife patterns. The fact that women at or near retirement ages have dramatically lower participation rates than young women is only partly an aging effect. To a large extent, it reflects

differences between cohorts of women. Many over the age of 50 in 1987, for example, first reached the age of labor force entry in the 1940's or 1950's, when women were not usually expected or encouraged to work and when employment opportunities for them were limited (an exception was during World War II, but most women returned to their prior work patterns after the war).

Changes in social norms regarding women's work force participation in subsequent decades affected young women dramatically, and the effect has been lasting. As a result, women in their late thirties today are far more likely to be in the labor force than were their mothers or grandmothers at any age.

Chart 2 illustrates differences in the labor force participation patterns of 5-year cohorts of women who were between ages 30 and 69 in 1987. By linking together the participation rates of these groups as they passed through successive ages (for example, women ages 60 to 64 in 1987 were 45 to 49 in 1972, 50 to 54 in 1977, and so on) a longitudinal perspective is derived from cross-sectional CPS data.⁵ As the chart illustrates, even between cohorts born as few as 5 years apart, differences in labor force participation are striking. At every age, each successive cohort was more likely to work than the preceding one. A comparison of the oldest and youngest groups of women illustrates the cumulative effect of that trend. For example, 7 of 10 women in their thirties worked in 1987, more than twice as many as in 1957.

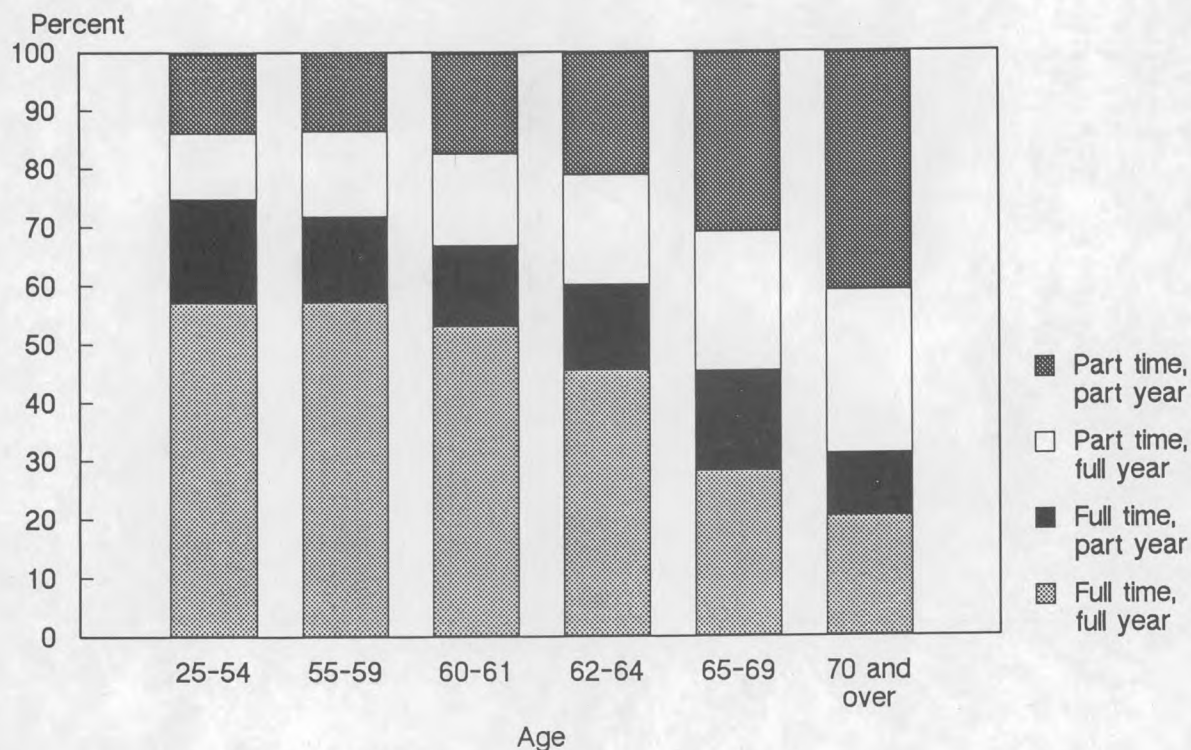
Not only have participation rates risen with each successive cohort of women, but, as chart 2 shows, fundamental changes in worklife patterns have occurred over time. The older cohorts followed a pattern in which slightly fewer than half of women were in the work force in their early twenties; their participation rates dropped sharply during their childbearing years, and then rose to a peak in their late forties or early fifties. The peak rose higher and higher for each successive cohort, but the pattern remained essentially the same.

In the last decade or so, that pattern has apparently been replaced by one in which participation rates start much higher and continue to rise with no dropoff during childbearing years. The pattern for the two groups of women in their thirties makes it easy to envision future generations having sustained participation rates above 70 percent until they approach retirement age—a pattern reflected in the Bureau of Labor Statistics' projections to the year 2000.⁶ In fact, although women's participation rates are lower than men's at each age, the current labor force patterns of young women resemble those of their fathers more closely than those of their mothers.⁷

Jobs older women hold

Occupational segregation. Despite media attention focusing on women's movement into nontraditional

Chart 1. Distribution of work schedules of women, selected ages, 1986



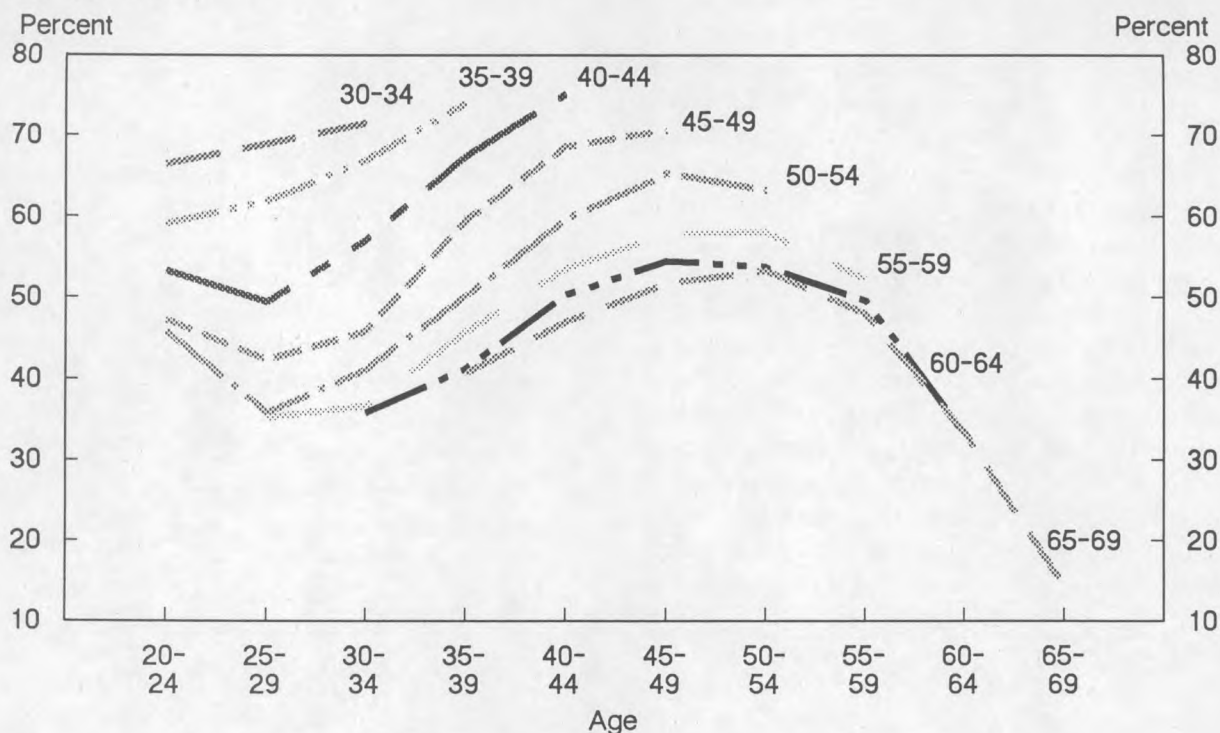
occupations, a majority of women, both older and younger, work in stereotyped occupations. In 1987, for example, nearly two-thirds of working women age 55 and over and more than half of those between the ages of 25 and 34 were employed in three traditionally female job categories—sales, administrative support (including clerical), and services. (See table 2.)

Some reduction in occupational sex segregation has occurred in recent years, although new opportunities have accrued almost exclusively to young women and new labor force entrants. The limited employment options available in their youth largely determined the type of jobs held by women currently age 55 or older. This explains why only 1 of 10 lawyers and judges between ages 55 and 64 is a woman, compared to 3 of 10 between ages 25 and 34. Young women have also increased their representation in medicine, accounting, engineering, and management. However, this movement into nontraditional occupations has been somewhat overshadowed by strong employment growth in several female-dominated occupations, such as nursing and clerical jobs.⁸

Occupational representation. After age 55, the proportion of women employed in any occupation begins to reflect not only past opportunities, but also other factors.

Earnings, retirement income, and opportunities for part-time work all vary between occupations and greatly affect whether women work and what types of jobs they hold. Also, health status determines, to some degree, which jobs older women may be able to perform. The representation index in table 2 provides a measure of the degree to which, among all women, older women are overrepresented or underrepresented in selected occupation and worker categories.⁹ An index value of more than 1 indicates that an age group of women makes up a larger proportion of one occupation than of all occupations combined. A value of 1.16 in sales, for example, indicates that relative to their representation in all occupations, women age 65 and over are overrepresented in sales jobs by 16 percent. It is important to note that the index does not capture the effects of occupational sex segregation; that is, overrepresentation refers only to the unusually large presence of *older women* among *all women* in a particular occupation.

Within the 55-and-over group, sharp differences exist in occupational representation. Among other reasons, the jobs held by women in their late fifties are usually full time and year round, while those held by women age 65 or older often reflect a more marginal, near-retirement or postretirement pattern. In general, women in their late

Chart 2. Labor force participation rates for selected 5-year cohorts of women, by age in 1987

NOTE: Each line represents the worklife pattern of a specific cohort (whose age in 1987 is indicated on the graph).

fifties are about evenly represented across job groups, while those age 65 and over are substantially overrepresented in some occupations and underrepresented in others.

As seen in table 2, women age 65 and older are overrepresented in both sales and services jobs. While the rigid hours required by many occupations force women to choose between full-time work and no work at all, those in sales and services jobs are often able to work part time for the same employer.¹⁰ Some women switch jobs late in life, moving to these occupations from those that are not as flexible. Apparently, however, job switching is uncommon among older women as most are already working in these occupations.¹¹ Also, changing jobs becomes less common with increasing age.

Another reason for older women's overrepresentation in sales and services jobs may be low rates of pension coverage in the industries that employ these workers.¹² Receipt of a pension other than Social Security greatly affects whether women continue to work beyond normal retirement age. In the Social Security Newly Entitled Beneficiary Survey (NBS), a survey of recipients of retired-worker benefits, it was found that women who did not receive a pension were about 3 times more likely to be working (18 to 30 months after first Social Security

receipt) than those who received pension benefits.¹³ In this context, it is not surprising that women age 65 and older hold a disproportionate share of both sales and services (especially private household) jobs, as women employed in these occupations may work to later ages than those employed in jobs with higher rates of pension coverage.

Health also plays a role in whether older women continue to work, and is one reason the oldest groups of women are underrepresented in some physically demanding occupations, such as operators, fabricators, and laborers. The relatively small proportion of women who have been employed in such jobs are likely to be in poorer health than are those who have performed less strenuous work. And, even when their health status is comparable to that of other older women, the greater physical demands of these jobs may make continued employment difficult. However, health status is less of a determinant of women's continued work activity than is pension receipt; in 1982, New Beneficiary Survey respondents who reported physical limitations and did not receive pension benefits were two times more likely to be working than persons with no health limitations who received pensions.¹⁴

Older women are substantially overrepresented among both self-employed and unpaid family workers and are underrepresented among wage and salary workers. Women who are self-employed are often in services industry jobs and may continue working because of low earnings and lack of pension coverage.¹⁵ Also, these jobs often provide flexible work schedules and make possible continued employment. The predominance of all three age groups of older women (shown in table 2) among unpaid family workers primarily reflects their employment in farming and other family businesses.¹⁶

Cohort differences not only affect the amount of work older women perform, but also have an impact on the representation of older women in many occupations. The most dramatic example is among private household workers. Limited employment opportunities available to women in the past, especially black women, channeled many into domestic work. In 1987, 8 percent of employed women age 65 or older were in private household jobs (33 percent of black women); this compared to less than 1 percent of women ages 25 to 34. Cohort effects are also seen in the underrepresentation of older women in executive, administrative, and managerial jobs, and among professionals and technicians. Although many of these jobs remain extremely segregated by sex, employment growth in these fields has created more opportunities for young women. Consequently, there is an overrepresentation of younger women and an underrepresentation of older women in these fields.

Education

Education is one of the best predictors of older women's labor force patterns. It dramatically affects not only whether they participate in the labor force, but also their likelihood of finding employment, of working full or part time, and of holding relatively high- or low-paying jobs.

In general, women age 55 or older have completed fewer years of education than their younger counterparts. As the following tabulation illustrates, in 1987, 4 of 10 women age 55 or older had completed less than 4 years of high school, compared with about 1 of 10 women between the ages of 25 and 34. Similarly, those in the younger group were more than twice as likely as were older women to have completed 4 years or more of college.

Years of school completed	Percent distribution of female population	
	25-34	55 and over
Less than 4 years of high school	13.0	41.2
4 years of high school	41.8	38.0
1-3 years of college	22.2	11.8
4 or more years of college	22.9	9.1

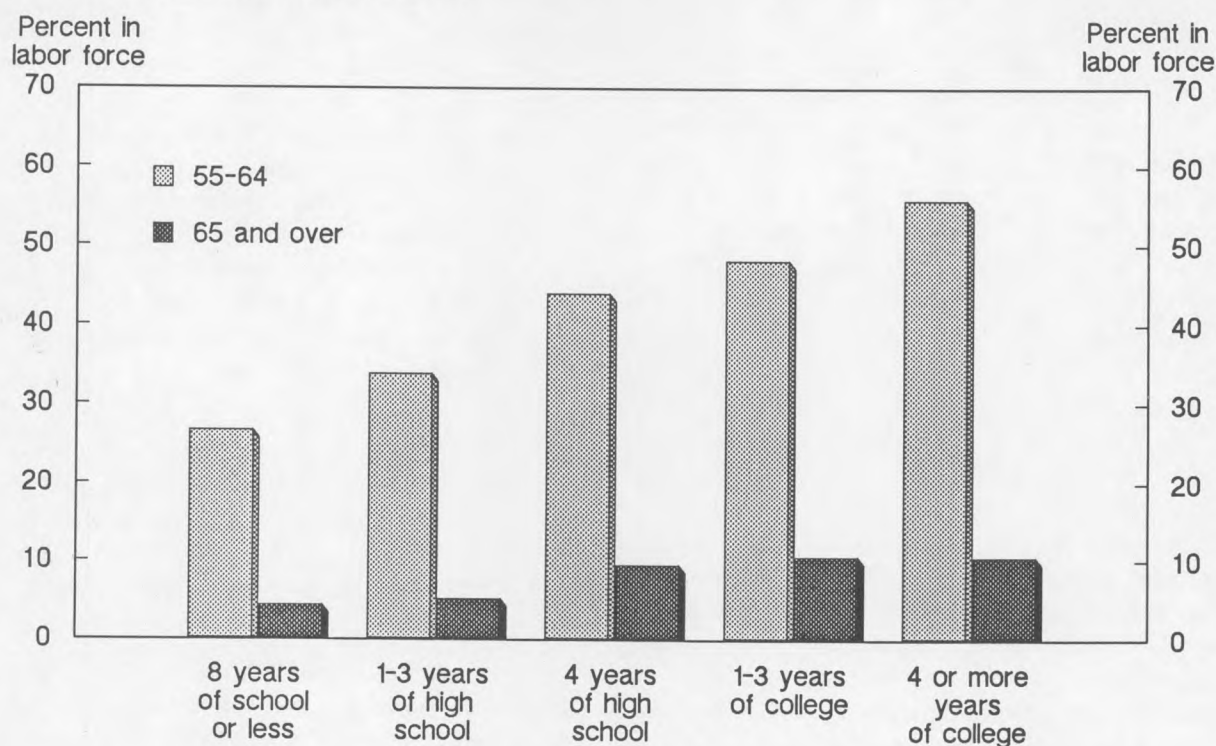
Women who have completed the most years of education are substantially more likely to work than are their less-educated counterparts. Education not only increases the likelihood that one will find work, but it also expands opportunities for jobs which require minimal physical demands and provide high levels of satisfaction, making

Table 2. Percent distribution and representation index for selected age groups of women by occupation and class of worker, 1987 annual averages

Category	Percent distribution of employed women			Occupational representation index		
	25-34	55-64	65 and over	55-59	60-64	65 and over
Occupation						
Total employed (in thousands)	14,617	4,783	1,191	1.00	1.00	1.00
Executive, administrative, and managerial	11.3	9.8	8.2	1.02	.90	.82
Professional specialty	16.4	11.7	10.2	.88	.73	.71
Health assessment and treating	4.9	3.0	1.3	.86	.74	.36
Teachers, college and university .....	.4	.5	.5	1.05	1.32	1.03
Teachers, except college and university	5.0	4.3	3.4	.92	.64	.64
Technicians and related support	4.5	1.7	1.1	.53	.50	.34
Sales occupations	10.9	12.6	14.9	.91	1.10	1.16
Administrative support (including clerical)	29.2	29.6	24.1	1.00	1.05	.83
Services	15.5	19.6	29.1	1.06	1.10	1.61
Private household	1.0	2.7	7.6	1.42	1.68	4.27
Protective .....	.6	.5	.5	1.02	.80	.94
Services, except private household and protective	14.0	16.3	20.9	1.02	1.05	1.32
Precision production, craft, and repair	2.3	2.5	2.7	1.18	.99	1.17
Operators, fabricators, and laborers	9.0	10.6	6.8	1.22	1.14	.76
Farming, forestry, and fishing .....	.9	1.8	2.9	1.56	1.66	2.59
Class of worker						
Wage and salary	94.5	90.1	82.5	.97	.96	.88
Self-employed	5.1	8.8	16.1	.72	.77	1.35
Unpaid family workers .....	.4	1.1	1.5	1.63	2.05	2.41

NOTE: Percents may not sum to 100 due to rounding.

Chart 3. Labor force participation rates of women age 55 and over by years of school completed, March 1987



continued work both possible and desirable for some women.

Differences in labor force participation by years of school completed are illustrated in chart 3. As shown, high school completion dramatically increases the likelihood that older women will be in the labor force. Among women ages 55 to 64, nearly one-half of those who had completed 4 years of high school were in the labor force in 1987, compared with fewer than a third of those with less education. Similarly, about 1 of 10 high school graduates age 65 or older worked, compared to fewer than 1 of 20 women with less education.

Education is also a good predictor of the amount of work older women perform. Of women who were employed in 1986, those with the most education worked the fullest schedules. Sixty-one percent of college graduates ages 55 to 64 worked full time and year round, compared with only 46 percent of women with 8 years or less of education. Among women 65 and over, 28 percent of the most educated worked these full schedules, compared with a fifth of the least educated.

Earnings

As women get older, their earnings decline in importance relative to other income sources. For those who

continue to work, however, earnings remain a critical source of income. In 1984, for example, 75 percent of nonmarried women ages 62 to 64 and 31 percent of those age 65 or older who worked relied on their earnings for at least half of their total income.¹⁷

Women in their late fifties and early sixties who worked in 1986 had median annual earnings of \$11,141, while those age 65 and over earned \$5,348. The lower earnings of the oldest group primarily reflected their more marginal work schedules. Earnings of women who worked full time and year round were substantially higher, with those 55 to 64 making \$16,066, and those 65 or older, \$13,217.

Although earnings depend on a number of factors, the best predictor is probably years of school completed. Table 3 compares the earnings of full-time, year-round workers of different education levels. As shown, older women with the most education earned between two and three times as much as their least-educated counterparts.

The cross-sectional data included in the table reveal different patterns for men and women. Within each educational group, men's earnings are higher for each successive age group—until they peak in the 45- to 54-year interval. For women, the pattern is much less clear. In fact, earnings peak at ages 35 to 44 for the group as a

whole, and at different ages depending on educational attainment. While men in their late fifties and early sixties earn substantially higher pay than younger men, older women often earn about the same amount or even less than their younger counterparts. This pattern—or lack of one—reflects a combination of factors, including variations between cohorts of women in years of work experience and in occupational mix. Older women, for example, are far more likely than younger women to be employed in low-paying private household work.

Marital status

Marital status has a substantial impact on the work activity of older women. As discussed previously, for women 55 and beyond, participation in the labor force is partially a function of retirement resources. Married women, who benefit from their husband's income as well as their own, generally have the easiest time retiring or remaining out of the labor force. Many of these women stop working prior to or upon receipt of reduced Social Security benefits at age 62.¹⁸ In contrast, a large proportion of never-married or divorced women rely solely on their own earnings, other income, or both for support. Hence, they must continue working beyond normal retirement age.

Labor force participation rates illustrate differences in the extent of work activity according to marital status. As shown in table 4, older unmarried women have a much stronger attachment to the work force than do married women. At the extremes, 70 percent of divorced women ages 55 to 59 were working in 1987, compared to only 45 percent of those with a husband present. After age 65, divorced women were about three times more likely to be in the labor force than were married women.

Differences in work activity between specific groups of older unmarried women are also striking, and reflect variations in resources available for retirement. For

example, divorced women have participation rates far exceeding those of never-married or widowed women. This is not surprising, because divorced women are more likely to rely primarily on their own income for support, while widows generally receive survivor benefits. Also, in contrast to never-married women, many of whom have worked for most of their lives and can retire on their own pensions, divorced women may have started their careers late, accumulating limited pension resources. Data on occupational tenure indicate that half of never-married women age 65 or older have 25 or more years of experience in their current occupation, compared to just 30 percent of their divorced and widowed counterparts.¹⁹ Occupational tenure affects pension eligibility, earnings, and level of Social Security benefits. Hence, divorced women are often worse off than their never-married counterparts and must continue to work to older ages.

It is interesting to note that marital status affects the labor force patterns of men and women in different ways. While being married tends to reduce the work activity of older women, older married men have higher participation rates than their nonmarried counterparts. Also, except for those over 70, older divorced women are both more likely to be in the labor force and to work full schedules than are divorced men of the same age. (See table 4.)

Differences in the work activity of older women according to marital status have lessened dramatically in recent years. As the following tabulation illustrates, never-married women have reduced their labor force participation dramatically, while married women have increased theirs. Changes in pensions and Social Security benefits increased the ability of older never-married women to stay out of the labor force. Also, changes in cultural norms that encouraged work activity by married women of all ages reduced the differences dramatically.

Table 3. Median annual earnings of full-time, year-round wage and salary workers by sex, age, and years of school completed, 1986

Sex and age	Total	8 years or less of school	1 to 3 years of high school	4 years of high school	1 to 3 years of college	4 or more years of college
Women						
Total, 16 and over	\$16,323	\$10,088	\$11,815	\$14,698	\$16,724	\$23,276
25-34	16,813	10,269	11,710	14,424	16,946	21,883
35-44	18,179	10,358	11,679	15,761	18,936	25,326
45-54	17,450	10,314	12,637	16,206	18,750	25,861
55-64	16,066	10,616	12,464	16,085	16,989	24,211
65 and over	13,217	8,239	9,860	13,601	12,300	21,403
Men						
Total, 16 and over	25,400	15,503	17,829	22,670	25,852	32,288
25-34	22,607	12,101	15,905	20,540	23,469	27,693
35-44	27,991	15,714	19,959	25,633	28,070	34,189
45-54	28,955	18,989	23,930	26,969	29,636	39,932
55-64	27,326	17,881	21,725	26,957	28,143	39,366
65 and over	23,922	15,843	17,568	24,488	26,724	38,976

	Labor force participation rates	
	1957	1987
Age 55-64:		
Never-married	69.2	48.4
Married, spouse present	24.0	37.4
Age 65 and over:		
Never-married	23.7	9.1
Married, spouse present	6.6	6.9

It is important to emphasize again that the work patterns of women age 55 and older not only reflect their current resources, but also depend on past experiences. Many of the differences in work activity between older married and unmarried women should narrow even further for future groups. Marital status often determined the lifetime work experiences of women born in the 1920's and 1930's. For the most part, married women had a more tenuous attachment to the labor force than did their never-married counterparts. Relying on her husband's income, a married woman often remained out of the labor force, worked intermittently, or chose an abbreviated work schedule, while an unmarried woman typically worked full time for many years.

Today, a majority of women work regardless of marital status. The participation rates of never-married and

Table 4. Labor force participation rates and percent of workers with full-time, year-round schedules by sex, age, and marital status, March 1987

Sex and age	Married, spouse present	Never married	Divorced	Widowed
Labor force participation rate				
Women:				
25 to 34	67.5	82.9	83.3	52.7
55 and over	23.6	22.8	43.9	14.3
55 to 59	44.9	58.7	69.6	58.0
60 to 64	29.4	37.3	52.6	37.0
65 to 69	11.3	18.9	24.5	17.1
70 and over	3.1	5.3	11.1	4.1
Men:				
25 to 34	97.1	88.0	92.9	86.4
55 and over	43.4	37.3	42.5	15.8
55 to 59	83.1	65.6	66.1	63.1
60 to 64	57.1	45.3	48.9	44.0
65 to 69	26.9	18.3	22.3	19.4
70 and over	11.0	14.9	12.4	6.9
Percent of workers who worked full time, year round				
Women:				
25 to 34	48.6	69.2	62.4	(1)
55 and over	45.7	58.3	60.2	41.4
55 to 59	51.7	73.0	69.8	63.4
60 to 64	45.6	64.6	61.6	47.2
65 and over	24.8	33.3	33.8	23.1
Men:				
25 to 34	80.2	64.8	67.2	(1)
55 and over	65.7	58.3	56.5	44.6
55 to 59	78.7	68.8	64.8	(1)
60 to 64	70.5	57.3	58.3	54.2
65 and over	35.9	38.8	27.6	33.8

¹Not calculated where base is less than 75,000.

Table 5. Population, labor force, and labor force participation rates of women age 55 and over by years of school completed and race, March 1987

Years of school completed	Population		Labor force		Labor force participation rate	
	Black	White	Black	White	Black	White
Total (in thousands)	2,547	24,928	610	5,296	23.9	21.2
Less than 4 years of high school	1,619	9,656	287	1,123	17.7	11.6
4 years of high school	576	9,899	183	2,585	31.8	26.1
1-3 years of college	186	3,058	79	844	42.5	27.6
4 or more years of college	166	2,314	61	744	36.7	32.2
Percent distribution						
Total	100.0	100.0	100.0	100.0	—	—
Less than 4 years of high school	63.6	38.7	47.0	21.2	—	—
4 years of high school	22.6	39.7	30.0	48.8	—	—
1-3 years of college	7.3	12.3	13.0	15.9	—	—
4 or more years of college	6.5	9.3	10.0	14.0	—	—

NOTE: Percents may not sum to 100 due to rounding.

married women ages 25 to 34 in 1957 differed by more than 50 percentage points. By 1987, that gap had narrowed to only 15 points.

Racial differences

Older black women have higher levels of work activity than older white women. Although the labor force participation rate of black women age 55 and older (24 percent) is only slightly higher than that of white women (21 percent), after controlling for educational differences, the greater work attachment of black women is evident. (See table 5.) At every educational level, black women are more likely to be in the labor force than are their white counterparts. Yet, the employment of older black women is concentrated in a relatively narrow range of lower paying occupations.

The more extensive work activity of older black women, in part, reflects differences in available retirement resources. New Beneficiary Survey data indicate that blacks (men and women together) are less likely than whites to receive pension income, to own their own homes, or to own other valuable assets.²⁰ Also, older black women are much less likely than older whites to be married; hence, black women have fewer resources for retirement and are likely to continue working to support themselves. In 1987, more than half of white women age 55 and older were married with a husband present, compared to only a third of older blacks.

Older black women have completed far fewer years of education than their white counterparts. In 1986, fully two-thirds of black women age 55 or older had completed fewer than 4 years of high school, compared to 39 percent of white women. Of those in the labor force, nearly half of older black women had not completed high school, compared with a fifth of white women. (See table 5.)

Reflecting these differences in education as well as differences in employment opportunities, in 1987, black women age 55 and older were about three times as likely as white women to be employed in service occupations. In fact, about 1 of 3 black women in their late sixties or older was employed as a private household worker; this compared to only 5 percent of white women in the same age group. Also, administrative support (including clerical) occupations employed about a third of older white women, but only 13 percent of older blacks. (See table 6.) In general, workers in services jobs have completed fewer years of school than those in clerical jobs. In fact, service workers are four times more likely than clerical workers to have less than a high school education.

The effect of education is especially clear when comparing the occupational distributions of groups of older black women. More than two-thirds of black women between ages 45 and 64,²¹ and nearly all of those age 65 or older who had completed fewer than 4 years of high school worked in the services occupations in 1987, while the majority of those who were college graduates were employed in professional specialties, mostly as teachers or nurses.

Vast differences in both educational and employment opportunities available to black women decades ago and today have resulted in very different occupational employment patterns for today's older and younger black women. The most outstanding difference between the youngest and oldest cohorts is the proportion employed in private household work. Fully 33 percent of black working women age 65 or older worked as cooks, servants, or cleaners (or in related occupations) in 1987, compared with only 1 percent of black women between ages 25 and 34. Young black women, like their white counterparts, were employed primarily in administrative support (including clerical) jobs. Although differences exist even between the youngest groups of black and white women, their relative narrowness is an indication that the occupational distributions of future generations of older women will vary much less by race than in the past.

Black women ages 55 to 64 working year round and full time in 1986 earned about 84 cents for each dollar earned by white women the same age.²² Median earnings were \$13,801 for black women ages 55 to 64 and \$16,370 for

Table 6. Occupational distribution of women by selected ages and race, 1987 annual averages

[In percent]

Occupation	25-34		55-64		65 and over	
	Black	White	Black	White	Black	White
Total employed (in thousands)	1,793	12,345	489	4,172	117	1,047
Managerial and professional specialty	17.2	29.2	15.7	22.4	10.3	19.6
Executive, administrative, and managerial	6.6	12.0	4.5	10.5	4.3	8.9
Professional specialty	10.6	17.2	11.0	12.0	6.8	10.7
Technical, sales, and administrative support	44.6	44.7	20.9	46.9	14.5	43.4
Technicians and related support	3.9	4.6	2.5	1.6	1.7	1.0
Sales occupations	8.1	11.3	4.7	13.6	4.3	16.1
Administrative support (including clerical)	32.7	28.8	13.7	31.7	8.5	26.3
Services	21.2	14.7	49.3	15.9	68.4	24.5
Private household	1.3	.9	11.5	1.7	32.5	5.0
Protective service	1.3	.5	1.4	.4	.9	.6
Services, except private household and protective	18.6	13.3	36.4	13.8	35.9	19.1
Precision production, craft, and repair	2.1	2.3	1.6	2.6	1.7	2.7
Operators, fabricators, and laborers	14.5	8.2	12.1	10.3	4.3	6.7
Forestry, farming, and fishing .....	.4	1.0	.6	1.9	.9	3.2

NOTE: Percents may not sum to 100 due to rounding.

white women. Sex differences in earnings were greater than race differences, however, as both groups of older women earned less than older black men (\$17,556) and older white men (\$28,165).

MANY OF THE LABOR FORCE EXPERIENCES of women age 55 and over in 1987 may never be repeated for new groups of older women. In the future, women reaching their late fifties and early sixties will have had substantially more work experience than their mothers or grandmothers. Differences in work history dependent on race and marital status will have lessened, and women's retirement decisions will be more similar to those of men.

However, the employment characteristics of older women in 1987 do provide some insight into what the experiences of later generations will be like. Though future groups of older women will have had many more years of work experience than women currently age 55 or older, their occupation and earnings profiles will undoubtedly continue to affect their work activity at age 55 and beyond. □

FOOTNOTES

¹Recognizing the importance of issues related to older workers, Secretary of Labor Ann McLaughlin recently convened a Task Force on Older Workers.

²The Current Population Survey (CPS) is the monthly household survey (including 59,500 households in 1987) conducted for the Bureau of Labor Statistics by the Bureau of the Census. The CPS provides detailed information on the U.S. labor force, with some data going back as many as four decades.

³See Donald Bell and William Marclay, "Trends in retirement eligibility and pension benefits, 1974-83," *Monthly Labor Review*, April 1987, pp. 18-25; and *Employee Benefits in Medium and Large Firms, 1986*, Bulletin 2281 (Bureau of Labor Statistics, 1987).

⁴Although from cross-sectional data it is impossible to determine the actual "normal retirement age," it is clear that the range of ages 62 to 65 often represents a turning point in work activity, as Social Security and private pension eligibility lure many workers into retirement.

⁵For an explanation of this cohort approach, see Philip L. Rones, "Using the CPS to track retirement trends among older men," *Monthly Labor Review*, February 1985, pp. 46-48.

⁶See Howard N. Fullerton, Jr., "Labor force projections: 1986 to 2000," *Monthly Labor Review*, September 1987, pp. 19-29.

⁷For a comparison of male and female participation patterns using cross-sectional labor force data for several years, see Susan E. Shank, "Women and the labor market: the link grows stronger," *Monthly Labor Review*, March 1988, pp. 3-8.

⁸See Barbara F. Reskin and Heidi Hartmann, eds. *Women's Work, Men's Work: Sex Segregation on the Job* (Washington, National Academy Press, 1986), Chapter 2.

⁹This technique was used in Philip L. Rones, "Older men—the choice between work and retirement," *Monthly Labor Review*, November 1978, pp. 3-10.

¹⁰For a detailed analysis of the demographic characteristics of older full-time and part-time workers, see William H. Crown, Phyllis H. Mutschler, and Thomas D. Leavitt, *Beyond Retirement: Characteristics of Older Workers and the Implications for Employment Policy* (Waltham, MA, Heller School, Brandeis University, The Policy Center on Aging, 1987).

¹¹Working paper by Donald C. Snyder, U.S. General Accounting Office, Human Resources Division, "Work After Retirement," p. 5 and table 3.

¹²For a comparison of pension coverage rates by industry, see *Pensions: Worker Coverage and Retirement Income, 1984, Current Population Reports, Household Economic Studies, Series P-70, No. 12* (Bureau of the Census, 1987), pp. 1-13. Also see Donald C. Snyder, "Pension Status of Recently Retired Workers on Their Longest Job: Findings From the New Beneficiary Survey," *Social Security Bulletin*, August, 1986, pp. 5-21.

¹³Howard M. Iams, "Employment of Retired-Worker Women," *Social Security Bulletin*, March 1986, pp. 5-13.

¹⁴Iams, "Employment," p. 8.

¹⁵See Eugene H. Becker, "Self-employed workers: an update to 1983," *Monthly Labor Review*, July 1984, pp. 14-18. See also Sheldon E. Haber, Enrique J. Lamas, and Jules H. Lichtenstein, "On their own: the self-employed and others in private business," *Monthly Labor Review*, May 1987, pp. 17-22.

¹⁶See Patricia A. Daly, "Unpaid family workers: long-term decline continues," *Monthly Labor Review*, October 1982, pp. 3-5.

¹⁷See Susan Grad, *Income of the Population 55 and Over, 1984*, Publication No. 13-11871 (Social Security Administration, 1985), p. 81.

¹⁸Iams, "Employment," p. 7.

¹⁹Occupational tenure data are for 1987 and are available for three marital status groups: women who are 1) never-married, 2) married (spouse present), or 3) of other marital status. The third category includes both widowed and divorced women as well as married women with a spouse absent.

²⁰Working paper by Donald C. Snyder, U.S. General Accounting Office, Human Resources Division, "Income and Assets of Recently Retired Workers by Race and Hispanic Origin."

²¹Occupational data by educational attainment is not tabulated for 55- to 64-year-olds specifically, so data for women ages 45 to 64 were used in this case.

²²After controlling for educational attainment, earnings ratios for older black women and white women range between 85 and 99 percent. The overall 84 percent ratio reflects the overrepresentation of black women at the lower end (and white women at the upper end) of the education and earnings scale.

A year's work: labor force activity from a different perspective

The annual March work experience supplement to the Current Population Survey provides a unique view of labor force activity which complements the monthly CPS data

EARL F. MELLOR AND WILLIAM PARKS II

"How many Americans work all year?" "How many persons experience unemployment sometime during a given year?" These are some of the questions that cannot be answered with the typical data from the Current Population Survey (CPS), which refer to a single week each month. Even the annual average data are nothing more than an average of the situation in those 12 "typical" weeks. The annual work experience survey, conducted each March as a supplement to the CPS, provide data which reveal how many persons worked or looked for work, or did both, during the previous year.

The March supplement provides a comprehensive year-long view of labor force activity, that is, the number of weeks each person spent working, looking for work, or not in the labor force. These data provide a different perspective on the work force than the monthly data. For example, while the monthly survey indicated that about 8.2 million people were unemployed in a typical week in 1986, the March supplement showed that almost 21 million persons had been unemployed for at least 1 week during that year.

Thus, the work experience data enhance the monthly CPS numbers. Some trends, for example, the overall economic strength from year to year or the long-term increases in labor force participation of women, are

evident from both perspectives. Often, however, one view provides information not obtained from the other, such as the inability of the monthly CPS to show the number and weeks women work during the year.

This report examines the results of the March 1987 work experience questions. It addresses five specific issues or trends for which these data provide a unique view of the labor market.

1. *Despite a widespread perception of a recent proliferation of part-time or temporary jobs in the economy, the proportion of workers who were employed year round, usually full time in 1986 was at its highest level in the past 20 years and was up sharply from 1982.*

In 1986, 59.2 percent of all persons with some employment during the year worked at least 50 weeks, usually in a full-time job. Such schedules are called "year-round, full-time," or "full-schedule" work. That proportion was slightly higher than in the mid-1960's, and well above the recessionary low of 55.0 percent in 1982 and the 1976 low for the two decades for which a consistent series of data are available. (See table 1.) This lengthening of work schedules is even more impressive when one considers that women, who are generally less likely than men to work full schedules, have made up a steadily expanding share of the work force.

Between 1982 and 1986, the total number of persons with some employment during the year rose by 9.5

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Table 1. Work experience of the population during the year, by sex, 1966-86

Year	Number of workers (thousands)	Percent distribution				Workers as a percent of population	Year-round, full-time workers as a percent of population	
		Total	Full time		Part time			
			50 to 52 weeks	1 to 49 weeks	50 to 52 weeks			1 to 49 weeks
Both sexes								
1966 ...	86,266	100.0	58.0	23.3	6.3	12.4	66.9	38.8
1967 ...	88,179	100.0	58.6	22.9	6.4	12.1	67.2	39.4
1968 ...	90,230	100.0	57.9	23.3	6.4	12.4	67.6	39.1
1969 ...	92,477	100.0	57.1	23.4	6.8	13.0	67.9	38.8
1970 ...	93,850	100.0	55.6	23.8	6.7	13.9	67.4	37.5
1971 ...	95,481	100.0	56.1	23.3	7.2	13.5	66.7	37.4
1972 ...	97,654	100.0	57.0	23.0	6.7	13.2	66.8	38.1
1973 ...	101,112	100.0	57.0	22.3	7.0	13.7	67.8	38.6
1974 ...	102,608	100.0	54.3	24.3	7.0	14.4	67.3	36.5
1975 ...	102,603	100.0	54.3	24.6	7.5	13.7	66.0	35.8
1976 ...	105,809	100.0	54.2	24.3	7.2	14.3	66.9	36.3
1977 ...	108,914	100.0	54.8	23.8	7.1	14.3	67.6	37.0
1978 ...	112,335	100.0	56.2	22.9	7.0	13.9	68.5	38.5
1979 ...	114,993	100.0	56.3	22.7	7.1	13.9	68.9	38.8
1980 ...	115,752	100.0	56.1	22.4	7.7	13.7	68.3	38.3
1981 ...	116,794	100.0	55.9	21.7	7.8	14.5	68.0	38.0
1982 ...	116,277	100.0	55.0	22.0	8.4	14.5	67.0	36.8
1983 ...	117,575	100.0	56.8	20.3	8.8	14.2	66.8	37.9
1984 ...	121,148	100.0	58.1	19.7	8.1	14.0	68.2	39.6
1985 ...	123,466	100.0	58.7	19.5	8.3	13.6	68.6	40.2
1986 ...	125,763	100.0	59.2	19.1	8.4	13.4	69.0	40.8
Men								
1966 ...	51,708	100.0	70.0	18.8	4.0	7.2	85.4	59.8
1967 ...	52,396	100.0	69.9	19.2	4.0	6.9	85.1	59.5
1968 ...	53,312	100.0	69.4	19.3	4.2	7.1	85.3	59.2
1969 ...	54,390	100.0	58.3	19.5	4.4	7.9	85.2	58.2
1970 ...	55,041	100.0	66.1	21.5	4.4	8.0	84.1	55.6
1971 ...	56,257	100.0	66.0	21.2	4.5	8.3	83.5	55.1
1972 ...	57,420	100.0	67.2	20.4	4.2	8.2	83.5	56.1
1973 ...	58,858	100.0	67.9	19.5	4.3	8.3	83.7	56.8
1974 ...	59,389	100.0	64.5	22.8	4.3	8.5	82.7	53.3
1975 ...	59,091	100.0	63.8	23.7	4.4	8.1	80.6	51.4
1976 ...	60,361	100.0	64.1	23.4	4.2	8.3	80.8	51.8
1977 ...	61,693	100.0	64.6	22.8	4.1	8.5	81.1	52.4
1978 ...	63,015	100.0	66.1	21.7	4.0	8.1	81.3	53.7
1979 ...	64,063	100.0	66.3	21.3	4.2	8.3	81.1	53.8
1980 ...	64,260	100.0	65.2	22.0	4.4	8.4	80.1	52.2
1981 ...	64,769	100.0	64.5	21.6	4.5	9.3	79.7	51.4
1982 ...	64,365	100.0	62.3	23.0	4.8	9.8	78.2	48.8
1983 ...	64,512	100.0	64.3	21.2	5.0	9.6	77.5	49.8
1984 ...	65,960	100.0	66.5	19.9	4.7	9.0	78.3	52.1
1985 ...	67,301	100.0	66.8	19.7	4.8	8.7	78.8	52.6
1986 ...	68,233	100.0	67.3	19.4	4.7	8.7	78.8	53.0
Women								
1966 ...	34,588	100.0	40.1	30.0	9.6	20.3	50.4	20.3
1967 ...	35,787	100.0	42.1	28.4	9.9	19.5	51.3	21.6
1968 ...	36,918	100.0	41.4	28.9	9.6	20.1	52.0	21.5
1969 ...	38,087	100.0	41.1	28.3	10.3	20.4	52.6	21.6
1970 ...	38,809	100.0	40.7	27.2	10.0	22.1	52.5	21.4
1971 ...	39,224	100.0	41.8	26.3	10.9	21.0	51.7	21.6
1972 ...	40,233	100.0	42.5	26.6	10.3	20.5	52.0	22.1
1973 ...	42,253	100.0	41.9	26.2	10.6	21.3	53.6	22.5
1974 ...	43,218	100.0	40.4	26.5	10.6	22.5	53.6	21.7
1975 ...	43,511	100.0	41.4	25.7	11.7	21.1	52.9	21.9
1976 ...	45,447	100.0	41.1	25.4	11.2	22.3	54.4	22.4
1977 ...	47,219	100.0	42.1	25.0	11.1	21.8	55.5	23.4
1978 ...	49,318	100.0	43.6	24.3	10.8	21.3	57.0	24.9
1979 ...	50,929	100.0	43.7	24.5	10.8	21.1	57.9	25.3
1980 ...	51,492	100.0	44.7	23.0	11.9	20.4	57.7	25.8
1981 ...	52,025	100.0	45.1	21.9	11.9	21.1	57.5	25.9
1982 ...	51,912	100.0	45.9	20.8	12.9	20.3	56.8	26.1
1983 ...	53,063	100.0	47.6	19.2	13.4	19.8	57.3	27.3
1984 ...	55,188	100.0	48.2	19.6	12.2	20.1	59.1	28.5
1985 ...	56,165	100.0	48.9	19.2	12.3	19.5	59.4	29.1
1986 ...	57,530	100.0	49.5	18.8	12.7	19.0	60.2	29.8

million, but the number who reported full-schedule work rose by 10.5 million. The number of part-timers working all year also grew, although by only 700,000, while part-year employment, particularly among full-time workers, fell. Over the same 4-year period, a growing proportion of workers held full-schedule jobs, while the proportion of the total working population was also expanding. Combining the two trends, the proportion of the working age population who worked year round, full time increased to 41 percent in 1986—significantly higher than earlier peaks of 39 percent in the late 1960's, 1973, and 1979, and well above the recent low of 37 percent in 1982.

Men's work schedules have gradually declined, with proportionately fewer working and, of those, fewer working full schedules. However, between 1982 and 1986, their work schedules were expanded. The proportion working year round, full time rose from 49 percent in 1982 to 53 percent in 1986. Despite this rebound, the proportion of men with full-time, full-year employment was still well below the 60-percent high recorded in 1966.

Women, however, have had an impressive growth in year-round, full-time work over the 20-year period. The proportion with at least some employment during the year rose from almost 50 percent in 1966 to 60 percent in 1986, while the percentage on full schedules among those working rose from 40 to 50 percent. Nearly 30 percent of the female population worked at year-round, full-time jobs in the mid-1980's—almost half again more than the 20- to 22-percent proportions of the late 1960's. Proportionately fewer women now are working part time, and, most importantly, fewer are taking extended time off during the year. The upward trend has been so strong that the proportion of women on full schedules did not fall even during the last two recessions.

2. *Women are becoming less and less likely to leave the work force for part of the year (or on a seasonal basis).*

Of all women with jobs, more than three-fifths worked year round in 1986, up from about half in 1966. As the following tabulation shows, the long-term trend toward full-year work has been evident both among women who work full time (35 hours or more per week) as well as those who usually work part time. The growing tendency toward year-round work has also cut across all age groups, although it was greater for younger than for older workers.

	Total	Percent of women working:			
		Year round		Part year	
		Full time	Part time	Full time	Part time
1966	100.0	40.1	9.6	30.0	20.3
1986	100.0	49.5	12.7	18.8	19.0

Table 2. Percent of population who worked and percent who did not work, by sex, age, and race, 1986 and 1966

Age	Percent of population who worked				Percent of population who did not work			
	1986		1966		1986		1966	
	White	Black	White	Black ¹	White	Black	White	Black ¹
Men								
16 to 19	67.1	37.5	75.9	67.3	32.9	62.5	24.1	32.7
20 to 24	92.4	76.8	93.8	90.1	7.6	23.2	6.2	9.9
25 to 44	94.5	86.5	98.4	97.1	5.5	13.5	1.6	2.9
45 to 64	84.5	77.1	93.2	88.4	15.5	22.9	6.8	11.6
65 and older	22.0	16.4	35.3	34.1	78.0	83.6	64.7	65.9
Women								
16 to 19	64.6	36.6	59.8	48.9	35.4	63.4	40.2	51.1
20 to 24	83.1	64.5	69.8	67.2	16.9	35.5	30.2	32.8
25 to 44	77.4	75.3	52.4	66.3	22.6	24.7	47.6	33.7
45 to 64	59.2	60.0	53.8	65.2	40.8	40.0	46.2	34.8
65 and older	10.0	10.0	13.4	20.8	90.0	90.0	86.6	79.2

¹Data are for black and other racial minorities.

Women have traditionally limited themselves to part-year work, often to care for their school-age children during the summer vacation months. But the proportion of women leaving the labor force to care for their children has been declining steadily. Since 1966, the proportion working full time, year round even though they had children of school age (6 to 17 years) has increased by 11 percentage points—to 49.6 percent. And there has been a growing tendency toward full-year work even among women with younger children, including those with toddlers under age 3.

The increased stability of women's labor force activity is also supported by the "gross-flow" data available from the monthly CPS. Annual averages of these estimates, which compare the labor force status of people in 2 consecutive months, have been available since 1968. In that year, about 8 percent of women in the labor force in one month, and 3 percent of those who worked a full-time schedule, had withdrawn from the labor force as of the next month (departures). By 1986, these figures had fallen to 6 and 2 percent, respectively. Declines of almost the same magnitude are also evident in terms of "arrivals"—those not in the labor force in the previous month but who were in the labor force in the current month. The following tabulation shows the average monthly percentage of women both entering and leaving the labor force:

	<u>Leaving labor force</u>		<u>Entering labor force</u>	
	Total	Worked full-time schedule	Total	Worked full-time schedule
1968.....	7.9	2.8	7.0	2.3
1986.....	5.7	1.7	5.4	1.5

The decline in the rate of mobility into and out of the labor force has been dominated by young women, particularly those ages 25 to 34, who are most likely to

have young children. The gross-flow data show that women are tending to stay in their jobs year round.

3. *Adult black men, and young blacks of both sexes, are far more likely than their white counterparts either to spend the entire year without a job, or when they worked, to work fewer weeks.*

Racial disparities in nonwork rates in 1986 were sharpest among the young. For example, almost one-fourth of all black men ages 20 to 24 reported that they did not work at all in 1986, compared to fewer than one-tenth of white men. (See table 2.) This gap has widened considerably since 1966, when the proportion not working in this age group was 10 percent for black and other minority races and 6 percent for whites.¹ The widening gap was primarily the result of an increase in the nonwork rates for blacks, a pattern that was typical of almost all age groups of men.

For women ages 20 to 24, the story was somewhat different. Although there was a wide racial discrepancy in the incidence of work for young women in 1986, it resulted more from a much-improved employment record for whites over the 20-year period than a worsening one for blacks. One might say, then, that young black women were not part of the surge in employment that affected most other groups of women.

Teenage blacks experienced a dramatic decline in work activity over the two decades. In 1966, the nonwork rates of black teens of each sex exceeded those of white teens by 10 percentage points; by 1986, the gap had grown to 30 points. This large spread stems principally from an increased rate of employment for white teenage women and a drop in the black employment rate.

The percentage of teenage men of both races with some employment fell over the two decades, but much more so for blacks. In 1986, a black male teenager was twice as

Table 3. Percent distribution of workers with employment, by work schedule, 1986

Characteristic	Total	Usually full time		Usually part time
		50-52 weeks	1-49 weeks	
Men				
White:				
16 to 19 years	100.0	9.3	26.7	64.0
20 to 24 years	100.0	46.7	32.1	21.2
25 to 54 years	100.0	78.9	16.1	5.0
55 years and older...	100.0	64.3	16.7	19.1
Black:				
16 to 19 years	100.0	10.8	32.7	56.0
20 to 24 years	100.0	35.6	35.9	28.5
25 to 54 years	100.0	70.4	22.1	7.5
55 years and older...	100.0	63.4	13.5	23.4
Women				
White:				
16 to 19 years	100.0	7.1	18.3	74.6
20 to 24 years	100.0	39.6	27.4	33.0
25 to 54 years	100.0	56.0	17.1	26.9
55 years and older...	100.0	47.2	14.1	38.8
Black:				
16 to 19 years	100.0	5.5	22.9	72.3
20 to 24 years	100.0	29.2	32.7	38.2
25 to 54 years	100.0	62.9	20.7	16.4
55 years and older...	100.0	47.3	16.6	35.9

likely to have spent the entire year without a job as he would have in 1966.

In the mid-1960's, it was rare for a man to spend the entire year without working except for those in the youngest and oldest age groups. By 1986, however, it had become more common even among men ages 25 to 44. Proportionately far more black men than white men spent all of 1986 without work. For example, among the 25- to 44-year-olds²—an age group in which most persons have completed their education and very few have a disability that would prevent them from working—14 percent of black men were reported as not working at all during the year, compared with 6 percent of white men. (See table 2.)

Among the men not working in 1986, a greater proportion of blacks than whites cited the inability to find a job. This was particularly true for the 25- to 44-year-olds, where 1 of every 3 black nonworkers, as compared to 1 of every 4 whites, gave that as a reason. The overall effect of these job market problems on blacks is more than the differences these rates suggest, because, as stated earlier, a far larger proportion of blacks than whites reported not working at all.

Differences in nonwork rates tend to disappear by age 55, although reasons for nonparticipation differ by race. Older black men were far more likely than white men to cite ill health or disability as their main reason for not working, while whites were more likely to cite retirement.

While nonwork rates fall sharply as education increases, the racial difference in the proportions of nonworking men cannot be explained solely by the generally lower levels of

education of blacks as compared to whites. In fact, at each level of education, from high school dropouts to college graduates, black men were more likely than whites to have been jobless the entire year.

Only among adult women was there little racial difference in annual nonwork rates. White and black women ages 25 to 44 had virtually identical nonwork rates in 1986, at about 25 percent. The converse, of course, is that 75 percent of each group worked in 1986; in 1966, the work rates in this age group were 66 percent for black women and only 52 percent for whites.

Racial discrepancies were also evident in the work schedules of persons who held jobs in 1986. In almost every age group, a much higher proportion of white than black men reported working full time year round. (See table 3.) The large majority of men ages 25 to 44 who worked part of the year (fewer than 50 weeks) listed job market difficulties or layoff as the reasons for not working a full year. Only among older men did whites record more part-year work than did blacks. As with the nonwork data, older white men were more likely than blacks to cite retirement as their reason for part-year work. Blacks were more likely than whites to cite health and job market factors.

The patterns of work among women of both races were generally very similar in 1986. While the proportion of women in both races employed in year-round, full-time jobs was up sharply from 1966, the gain was greater for black women.

4. *The numbers of people employed and of those unemployed anytime during the year are much larger than those found in the monthly surveys. Unemployment was experienced by 16 percent of the labor force in 1986 versus an annual average unemployment rate of 7.0 percent.*

As mentioned earlier, estimates from the March work experience survey differ from the annual averages of the 12 monthly surveys. The reference periods are totally different and the manner in which persons are placed in the three labor force status categories also differs. The reference period for the work experience survey is the entire year, while that for each monthly survey is 1 week. Moreover, persons are not placed into mutually exclusive categories in the work experience survey as occurs in the monthly CPS. For example, in the work experience data, an individual who was employed part of the year, unemployed part of the year, and not in the labor force part of the year shows up in all three categories. In the monthly data, by contrast, all individuals are classified in a priority order, as *either* employed, unemployed, or not in the labor force each month; they can never be in more than one category.

In 1986, almost 126 million persons worked all or part of the year, while the annual average employment level

Table 4. Comparison of employment and unemployment data obtained from the March 1987 work experience supplement with those from the averages of the 12 monthly surveys

Characteristic	Worked in 1986 as a percent of March 1987 population (Work Experience Survey)	Employed as a percent of population, 1986 annual averages	Ratio of March survey to annual averages	Percent of labor force with 1 week or more unemployment (Work Experience Survey)	Unemployment rate, 1986 annual averages	Ratio of March survey to annual averages
Sex and age						
Total, 16 years and older	69.0	60.7	1.1	16.2	7.0	2.3
Men, 16 years and older	78.8	71.0	1.1	16.9	6.9	2.4
16 to 19 years	61.9	45.7	1.4	25.8	19.0	1.4
20 to 24 years	89.9	76.3	1.2	27.6	11.0	2.5
25 to 44 years	94.3	89.0	1.1	16.8	6.0	2.8
45 to 64 years	83.8	76.0	1.1	11.3	4.4	2.6
65 years and older	21.5	15.4	1.4	4.9	3.2	1.5
Women, 16 years and older	60.2	51.4	1.2	15.3	7.1	2.2
16 to 19 years	59.6	43.6	1.4	24.3	17.6	1.4
20 to 24 years	80.1	64.9	1.2	23.5	10.3	2.3
25 to 44 years	77.0	67.8	1.1	15.0	6.2	2.4
45 to 64 years	59.4	51.9	1.1	9.7	4.2	2.3
65 years and older	10.0	7.2	1.4	4.4	2.8	1.6
Sex, race, and Hispanic origin						
Both sexes:						
White	69.7	61.5	1.1	15.0	6.0	2.5
Black	63.6	54.1	1.2	25.1	14.5	1.7
Hispanic origin	67.4	58.5	1.2	22.3	10.6	2.1
Men:						
White	79.9	72.3	1.1	15.9	6.0	2.7
Black	70.0	60.6	1.2	25.3	14.8	1.7
Hispanic origin	81.2	72.5	1.1	23.6	10.5	2.2
Women:						
White	60.3	51.7	1.2	13.9	6.1	2.3
Black	58.5	48.8	1.2	24.8	14.2	1.7
Hispanic origin	53.9	44.7	1.2	20.5	10.8	1.9

from the monthly surveys was just under 110 million. Similarly, the work experience data show that 20.7 million persons were unemployed sometime during the year; the average of the 12 monthly figures was 8.2 million.

The proportion of the population age 16 and older who worked sometime in 1986, at 69.0 percent, was considerably higher than the 60.7 percent annual average employment-population ratio. As shown in table 4, the higher the likelihood of year-round work, the closer the estimates from the two surveys will be. If all those with some employment in 1986 had worked every week of the year, the two series would be identical. On the other hand, if everyone had worked only 1 month, the ratio of the work experience survey employment numbers to those of the monthly data would be 12 to 1. Because the proportion working year round, full time has risen over the years, the work experience-monthly average differences have narrowed slightly.

In terms of unemployment, there is even greater turnover from month to month. In times of economic expansion, when unemployment duration is relatively short, there will be larger differences between total annual unemployment and average monthly unemployment, for example, a ratio of 2.2 in 1983, compared to 2.5 in 1986. Similarly, the ratio of the incidence of unemployment in

the March work experience survey to the annual average unemployment rate was 2.5 for whites and 1.7 for blacks. This indicates that blacks were unemployed more weeks during the year and were more likely to be picked up among the unemployed in the monthly surveys.

In summary, both with regard to the measurement of employment and unemployment, the two surveys are complementary, providing very different but useful perspectives on the work force.

5. Virtually all persons who experienced some unemployment also worked sometime during the year. In 1986, the proportion was nearly 90 percent. Much of the joblessness was of short duration, but 44 percent of the unemployed were without work for 15 weeks or more.

Of the 20.7 million persons with some unemployment, about one-fourth were jobless only 4 weeks or less (including just under 1 million year-round workers with 1 or 2 weeks of unemployment). The probability of having only a short spell of unemployment was greater for whites, particularly white women, than for blacks, as shown in the following tabulation:

	Percent of unemployed			
	Who also worked in 1986	Un-employed 1 to 4 weeks	Un-employed 15 weeks or more	Un-employed 40 weeks or more
Total	88.5	24.2	44.0	10.2
White men	93.1	22.0	45.8	10.0
White women ...	87.5	30.6	37.2	7.3
Black men	83.5	16.9	53.5	16.0
Black women ...	73.1	18.3	51.4	16.2
Hispanic men ...	93.2	17.4	54.3	12.6
Hispanic women	83.4	27.1	40.5	8.3

At the other end of the joblessness spectrum, 44 percent of those with unemployment were out of work for 15

weeks or more. As shown in the tabulation, there was more of such long-term unemployment among blacks than whites. Unemployment of 40 weeks or longer was reported for 16 percent of blacks and 9 percent of whites.

As indicated earlier, the work experience and the basic CPS data complement each other in the analysis of employment and unemployment. Most importantly, the work experience data add another dimension to labor force behavior—that individuals can experience a range of work and nonwork situations over the course of a year. While the monthly data are more timely, and therefore provide the only measures for current analysis, the year-long perspective provides an insight into long-term changes in work patterns not available elsewhere. □

—FOOTNOTES—

¹ Data were not tabulated separately for blacks until 1972. In that year, blacks made up 90 percent of the black and other noninstitutional population. Data for 1966 to 1971 on blacks include both blacks and

other minority races.

² Available data for 1966 place 25- to 44-year-olds into a single "central-age" category.

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, DC 20212.

Employer-sponsored vision care brought into focus

Employee participation in vision care plans doubled from 1980 to 1986 in medium and large firms; coverage rose 150 percent for white-collar workers and 60 percent for blue-collar workers

RITA S. JAIN

In recent years, vision care has emerged as a prominent part of the health care package. Vision care benefits provide a variety of services to plan participants that are not usually covered by regular health insurance plans, such as eye examinations, eyeglasses, contact lenses, and orthotics (eye muscle exercises). In an era when concern over rising premiums has prompted employers to add various "cost containment" features to their health care plans, the growth of vision care represents a significant benefit improvement.

This article is based on data from the Bureau of Labor Statistics 1980-86 surveys of benefits for full-time employees in medium and large firms. The 1986 survey data were from a sample of 1,500 establishments, which represented approximately 46,000 business establishments employing 24 million workers.¹ Data were tabulated for three broad occupational groups: professional and administrative workers, technical and clerical workers, and production workers. The first two groups are considered white-collar workers, in contrast to blue-collar or production workers.

Vision care plan participation, 1980-86

The mid-1980's were years of rapid growth in vision care plan coverage. According to the 1986 Employee Ben-

efits Survey, vision care, wholly or partially financed by employers, was available to 40 percent of full-time employees in medium and large firms—nearly double the 21 percent recorded for 1980. Coverage rose 150 percent for white-collar workers and 60 percent for blue-collar workers during this period.

Participation in vision care plans was relatively unchanged from 1980 to 1982. Beginning in 1983, participation grew steadily, and by 1986, nearly twice as many workers had coverage as in 1980. Although blue-collar workers were more likely to have vision care benefits in 1980, the faster growth rate for white-collar workers put them on a par with their blue-collar counterparts by 1986. The following tabulation shows the percent of full-time health insurance participants with vision benefits in medium and large firms between 1980 and 1986:

Year	All participants	Professional and administrative	Technical and clerical	Production
1980	21	16	17	25
1981	22	17	18	26
1982	22	18	19	25
1983	28	25	24	32
1984	30	26	26	33
1985	35	32	33	37
1986	40	39	41	40

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Table 1. Participants in vision care plans by extent of coverage for selected benefits, medium and large firms, 1986
 [In percent]

Type of vision benefit	Total	Covered	Covered in full up to usual, customary, and reasonable charge	Subject to separate vision care limits				Subject to overall limit of health care plan	Not covered	Coverage not determinable
				Total	Scheduled allowance	Portion of usual, customary, and reasonable charge	Copayment			
All participants:										
Examination.....	100	93	32	56	42	4	13	4	7	—
Eyeglasses.....	100	77	10	64	47	3	15	3	23	—
Contact lenses.....	100	70	3	65	60	3	15	2	29	(1)
Orthoptics.....	100	4	(1)	1	—	—	1	3	96	(1)
Professional and administrative participants:										
Examination.....	100	93	32	56	39	4	14	6	7	—
Eyeglasses.....	100	70	9	57	42	3	13	3	30	—
Contact lenses.....	100	67	4	61	54	3	13	2	33	(1)
Orthoptics.....	100	4	(1)	1	—	—	1	3	96	(1)
Technical and clerical participants:										
Examination.....	100	92	28	59	42	3	15	5	8	—
Eyeglasses.....	100	70	7	59	44	3	13	5	30	—
Contact lenses.....	100	66	4	61	56	3	13	1	34	(1)
Orthoptics.....	100	4	(1)	2	—	—	2	2	96	(1)
Production participants:										
Examination.....	100	92	34	55	44	4	10	3	8	—
Eyeglasses.....	100	85	12	70	51	3	18	2	15	—
Contact lenses.....	100	75	2	69	66	3	18	3	25	(1)
Orthoptics.....	100	3	(1)	—	—	—	—	3	97	(1)

¹Less than 0.5 percent.

NOTE: Because of rounding, sums of individual items may not equal totals. Dashes indicate no employees in these categories.

Extent of coverage

Approximately four-fifths of the participants received vision care benefits from their regular health insurance plan, and the remainder had benefits provided under separate vision care plans. Even for the former group, vision benefits typically were covered under special provisions that were rarely coordinated with other health care benefits.

Vision care plans cover such services as eye examinations, eyeglasses (including frames), contact lenses, and orthoptics (exercises to improve the functioning of the eye muscles). Eye examinations provide the information needed for lens prescriptions and for the diagnosis of disease or injury. Treatment of eye disease or injury, however, is covered by regular health care plans rather than as a vision care benefit. (Some regular health plans cover contact lenses after cataract surgery or examinations and eyeglasses required because of accidental injury or surgery.)

Provisions for eye examinations covered 93 percent of vision care participants in 1986. Seventy-seven percent of the participants had provisions for eyeglasses, and 70 percent for contact lenses. Only 4 percent, however, had coverage for orthoptics. Coverage differed among occupa-

tions, as table 1 shows. Blue-collar workers were more likely to be in plans that paid for eyeglasses and contact lenses than were white-collar workers—a pattern that has remained essentially unchanged since 1980.

Although participation in vision care plans has grown considerably since 1980, the proportion of participants in plans paying for eyeglasses and contact lenses has declined. This is due less to changes in vision care plans themselves than to the increasing prominence of Health Maintenance Organizations (HMO's).² (Participation in HMO's rose from 2 percent of employees in 1980, to 3 percent in 1983, and to 13 percent in 1986.) In 1986, for example, three-fourths of the HMO participants were in plans that also provided vision benefits, compared with 28 percent of participants in other types of health insurance plans. Generally, HMO vision benefits included only eye examinations, while traditional insurers usually covered eyeglasses and contact lenses, as well as examinations. Thus, while the growth in HMO enrollment has contributed to the rise in vision care participation, it has caused the proportion of participants with coverage for eyeglasses and contact lenses to decline. The following tabulation shows the changing mix of services provided by vision plans in 1980, 1983, and 1986:

Services covered	Percent of participants		
	1980	1983	1986
Total	100	100	100
Eye examinations only	11	10	19
Examinations and eyeglasses	13	7	7
Examinations, eyeglasses, and contact lenses	68	78	64
Orthoptics only	5	3	3
Other combinations of services	3	2	7

Methods of reimbursement

Vision care plans pay for covered services in one of four ways: (1) full or partial payment up to the usual, customary, and reasonable charge for the service (UCR);³ (2) payment according to a schedule (list) of cash allowances, which specifies the maximum amount payable for each type of service; (3) the copayment method, in which the participant pays the initial cost of each service and the plan pays the remaining portion; and (4) payment subject to overall health insurance plan deductible or coinsurance requirements.⁴

Table 2. Participants in vision care plans with scheduled allowances by provisions for examinations and eyeglasses, medium and large firms, 1986

Allowance	Percent of participants
Eye examinations:	
Total participants	100
Allowance per examination	89
Less than \$25	3
\$16-\$20	8
\$21-\$25	48
\$26-\$30	8
\$31-\$35	4
\$36-\$40	12
\$41-\$45	3
\$46-\$50	2
Amount not determinable	(1)
Allowance not on a per examination basis, or also applicable to other vision care expenses	11
Eyeglasses, per pair of single vision lenses:	
Total participants	100
Allowance per pair	91
Less than \$20	1
\$20	(1)
\$21-\$29	4
\$30	1
\$31-\$39	7
\$40	21
\$41-\$49	9
\$50	6
\$51-\$59	20
\$60	7
\$61-\$69	2
\$70 or more	10
Amount not determinable	4
Allowance not on a per pair of eyeglasses basis, or also applicable to other vision care expenses	9

¹Less than 0.5 percent.

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

Table 3. Participants in vision care plans with scheduled allowances by provision for contact lenses, medium and large firms, 1986

Provision for contact lenses	Percent of participants having allowances payable under—		
	Any condition	Ordinary conditions	Special conditions
Total participants	100	100	100
Participants covered	100	81	100
Allowance per examination	93	81	39
Less than \$25	1	3	—
\$24-\$49	15	43	—
\$50-\$74	23	19	(1)
\$75-\$99	46	12	1
\$100-\$149	6	2	1
\$150-\$199	(1)	1	14
\$200-\$249	—	1	12
\$250 or more	(1)	—	10
Allowance not determinable	(1)	—	—
Other type of allowance ²	7	—	40
No specified maximum	—	—	21
Participants not covered ³	—	19	—

¹Less than 0.5 percent.

²Benefits were subject to a dollar limitation which applied to all vision care expenses during a year or other specified period.

³Coverage was limited to special conditions.

NOTE: Dashes indicate no employees in this category. Because of rounding, sums of individual items may not equal totals.

The methods used vary somewhat by type of service, as illustrated in table 1. About one-third of the participants were in plans that paid in full up to the UCR charge for eye examinations, while 10 percent were in plans that paid in full for eyeglasses. Contact lenses were rarely covered at the full UCR rate. Three to four percent of participants were in plans that paid a portion of the UCR rate, typically 50 or 80 percent.

The most common method of reimbursement was through a schedule of maximum cash allowances. This method applied to about four-tenths of the participants for examinations and eyeglasses, and to 60 percent for contact lenses.

Table 2 shows the range of payments that plan schedules allowed for vision care services. Allowances for eye examinations were commonly set at \$21 to \$25 and rarely exceeded \$40. Maximum payments for a pair of eyeglasses (frames and single vision lenses) ranged widely, but most commonly were \$40 to \$60.

In plans covering about four-tenths of the participants, reimbursements for contact lenses depended on whether the lenses were required as a result of surgery. Maximum allowances were usually either not specified or set at \$150 or more if lenses were needed after cataract surgery or other special conditions (table 3). Otherwise, allowances were lower, generally ranging from \$25 to \$100. In the remaining plans, maximum allowances were the same regardless of surgery, and were usually set at \$50 to \$100.

About one-sixth of the participants were under the copayment method of reimbursement. Essentially the

opposite of the scheduled cash allowances method, copayment arrangements pay the balance of covered charges after the employee has paid an initial amount of expense. Copayments ranged considerably, depending on the type of service provided, as illustrated in table 4.

Participants were most often required to make a copayment of \$3 or \$5 for each eye examination. Copayments for eyeglasses and contact lenses were commonly set at \$5 per visit or \$10 per prescription. About one-fourth of the participants in copayment plans were required to satisfy one copayment, usually an annual payment of \$10, rather than a separate copayment for each use of vision care services.

A few participants were subject to the reimbursement methods of the regular health care plan. In these cases, two types of reimbursement provisions usually applied. First, vision care expenses were included along with other types of medical expenses in meeting an overall deductible (a specified amount of medical expense that an insured person must pay before benefits will be paid by the plan). Second, the participant paid a specified percentage (usually 20 percent) of the charges for covered services that exceeded the deductible, and the plan paid the rest.

Special plan limits

Most vision care plans imposed limitations on how frequently covered services would be reimbursed. Participants in a plan were commonly limited to one eye examination per

6- or 12-month period and to one set of lenses per 1- or 2-year period. Other special limits also applied. Most plans did not cover the extra cost of oversized, photosensitive, or multifocal plastic lenses; nor did they cover prescription sunglasses or duplicate glasses. As noted previously, some plans did not cover contact lenses unless required by cataract surgery.

Employee contributions to plan premiums

Four-fifths of the participants in vision care plans had the benefits provided through their regular health insurance plan. Although reimbursement methods and benefit limits generally applied separately to the vision care portion of the plan, employee premium payments were usually specified for the health care plan as a whole. In these cases, it was impossible to determine how much, if any, of the employee premium was intended to help finance the cost of vision care. As the following tabulation shows, total employee premium payments differed little when plans with vision care benefits were compared with those without such benefits:

<i>Regular health plans</i>		
<i>Without vision care benefits</i>	<i>With vision care benefits</i>	<i>Separate vision care plans</i>

Individual coverage

Percent of participants in:

Contributory plans	41	36	11
Noncontributory plans	59	65	89

Average monthly

employee contribution	\$12	\$14	\$ 8
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Family coverage

Percent of participants in:

Contributory plans	63	48	14
Noncontributory plans	37	52	86

Average monthly

employee contribution	\$42	\$40	\$15
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Not only were plans with vision care benefits less likely to require employee contributions than plans without such benefits, but monthly premiums on average were about the same regardless of the presence of vision benefits.

In contributory plans, employee are required to contribute toward plan premiums. In noncontributory plans, premiums are fully financed by the employer. Average monthly employee contributions were computed only for plans that specified a fixed monthly premium for the employee.

Approximately one-fifth of the vision care participants had their benefits provided under special vision care plans. Of these employees, about one-tenth contributed toward the cost of their coverage. Monthly premium payments for individual coverage averaged about \$8, while contributions for family coverage amounted to about \$15. (These data, however, apply to a very small number of employees and are subject to higher than normal sample error.)

Table 4. Participants in vision care plans with copayment provisions, by type and amount of copayment, medium and large firms, 1986

Copayment provision	Percent of participants		
	Eye examinations	Eyeglasses	Contact lenses
Total	100	100	100
Per visit	70	35	34
\$1	4	—	—
\$2	5	(1)	(1)
\$2.50	1	1	—
\$3	11	1	1
\$4	2	—	—
\$5	35	23	24
\$7.50	1	1	1
\$10	7	5	5
\$15	2	2	1
\$20	3	2	2
More than \$20	(1)	(1)	(1)
Per prescription	—	41	41
\$5	—	1	2
\$7.50	—	7	7
\$10.00	—	32	32
More than \$10	—	1	(1)
Per year	28	23	23
Less than \$10	2	1	1
\$10	23	19	20
\$15	3	2	2
Other period	2	2	2

¹Less than 0.5 percent.

NOTE: Dashes indicate no employees in this category. Because of rounding, sums of individual items may not equal totals.

—FOOTNOTES—

¹The 1986 survey results are reported in *Employee Benefits in Medium and Large Firms, 1986*, Bulletin 2281 (Bureau of Labor Statistics, 1987). The survey is part of a series of annual studies conducted from 1979 to 1986 in private sector establishments employing at least 50, 100, or 250 workers, depending on the industry. Industrial coverage includes: mining; construction; manufacturing; transportation, communications, electric, gas, and sanitary services; wholesale trade; retail trade; finance, insurance, and real estate; and selected services. The 1980–85 results are reported in the following BLS bulletins: 1980 survey (Bulletin 2107); 1981 survey (Bulletin 2140); 1982 survey (Bulletin 2176); 1983 survey (Bulletin 2213); 1984 survey (Bulletin 2237); and the 1985 survey (Bulletin 2262).

²Health Maintenance Organizations provide comprehensive health care on a prepayment rather than fee-for-service basis. For additional

information on HMOs, see Allan Blostin and William Marclay, "HMOs and other health plans: coverage and employee premiums," *Monthly Labor Review*, June 1983, pp. 28–33.

³The usual, customary, and reasonable rate (UCR) is a rate that is: not more than the provider's usual charge; within the customary range of fees in the locality; and is reasonable, considering the circumstances.

⁴The deductible is a specified amount of medical expense that an insured person must pay before benefits will be paid by the plan. Coinsurance is a provision where both the (insured) participant and the insurer share, in a specified ratio, the health care expenses resulting from an illness or injury. The coinsurance percentage is the portion of charges paid by the insurer.

Is the 40-hour week immutable?

Most workers—women as well as men—have a strong work commitment, typically asserting that they would continue to work even if it were financially unnecessary to do so. But this psychological commitment to work is not always reflected in the work histories of women, who move in and out of the labor force and between full-time and part-time jobs as a consequence of their changing family responsibilities. Permitting workers to tailor their working hours to their family circumstances would both reinforce their work commitment and contribute to the development of a more productive and satisfied labor force.

Much of the stress experienced by parents—mothers and fathers—is a consequence of the existing structure of work. But the 5-day, 40-hour workweek need not be considered immutable. Indeed, this "normal" work schedule is itself a fairly recent phenomenon, dating back only to the 1930's. Employment policies offering greater flexibility in working hours through both temporary leaves and a reduction in work hours could substantially alleviate the conflicts and strains working parents now face.

—PHYLLIS MOEN

"New Patterns of Work," *Work & Family: A Changing Dynamic* (Washington, The Bureau of National Affairs, 1986), p. 219.

An evaluation of BLS projections of the 1985 economy

Evaluation of BLS projections of 1985 employment shows their sensitivity to underlying population, labor force, and productivity estimates; it also shows their accuracy is similar to past projections

JOHN TSCHETTER

The Bureau of Labor Statistics regularly prepares projections of the growth of gross national product (GNP) and industrial output and employment for the U.S. economy. These projections are a framework for the Bureau's occupational projections program. They also serve as a framework for analysis of other issues. This article evaluates BLS projections for 1985,¹ and is the final step in the projections program at the Bureau.² This final evaluation is an important process. Without it we cannot quantify the limits of our projected data but can only describe them in general terms.

The Bureau has published projections of the 1985 economy on three separate occasions: 1973, 1976, and 1978. As seen in the following tabulation, the 1973 and 1976 projections underestimated the level of 1985 total employment. In contrast, the 1978 projections overestimated employment.

	Employment (millions)	Difference from actual:	
		Percent	Level (millions)
Projected in—			
1973	109.9	-1.8	-2.0
1976	109.7	-1.9	-2.1
1978	113.9	1.8	2.0
Actual 1985	111.9	—	—

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The 1973 and 1976 projections underestimated both the level of the 1985 population (16 years and older) and the level of labor force participation. A low estimate of the 1985 unemployment rate offset somewhat the population and labor force errors. The error for the 1978 projections reflects an underestimate of the unemployment rate and an overestimate of the labor force, which offset somewhat the total 1978 error.

BLS prepares projections of the labor force, total economic activity, industry output and employment, and occupational employment. A forthcoming article in the *Monthly Labor Review* will evaluate the projections of the 1985 labor force. This article evaluates the projections of 1985 GNP and industry employment and describes the size of the projection errors for GNP and employment by major industries. It also describes some of the factors contributing to these errors. However, for the projections of industry employment, it is possible only to calculate the size of the errors.

Framework for the evaluation

The 1973 BLS projections of the U.S. economy estimated economic growth for the 1972-85 period; the 1976 projections were for the 1973-85 period; and the 1978 projections were for the 1977-85 period. BLS projections describe what the economy might look like in 10 to 15 years, and are designed to capture secular rather than cyclical changes. The projections, in turn, reflect the re-

sults from economic models as well as specific judgments concerning key variables such as growth of the labor force, fiscal policy, labor productivity, and unemployment.³

To emphasize the uncertainty of projections, BLS has developed three alternative projections or scenarios—high, middle, and low. Each in turn incorporates a number of alternative judgments concerning labor force, fiscal policy, labor productivity, and unemployment. The projections reviewed here are the middle scenarios from the three projection efforts.

Data revisions, as usual, complicate this evaluation. The definitions and conventions for classifying industries in the Standard Industrial Classification (SIC) system have changed. The 1973 and 1976 projections used the 1967 SIC. The 1978 projections and the actual 1985 data used the 1972 SIC. Because of this and other changes, we cannot directly compare the projected values, as originally published, with the actual 1985 values. To solve this problem, this evaluation applies the projected trends to the revised historical data series to obtain “revised” projected 1985 values consistent with the new classification system. In essence, the “jumping off point” was revised for each projection to reflect data revisions. However, the projected trends for each detailed series remained unchanged.

Review of the projection errors

The following sections describe the errors in the three sets of BLS projections. They are reviewed and discussed in the sequence in which BLS developed them. The basic principles underlying BLS procedures used to develop projections have remained constant over the years, but many changes in procedure have been made as new data series became available and as statistical tools improved. Thus, if the reader is familiar with current BLS methodology, he or she is also relatively familiar with the methodology for the projections being evaluated here.

The first several steps of the BLS projection procedure involve estimates of the aggregate economy or GNP. Another set of steps involves estimates of industry level activity. The GNP estimates reflected groups of assumptions about five major economic factors—fiscal policy, demographics, productivity, unemployment, and prices. For the projections evaluated here, BLS used the Thurow macroeconomic model. This model, like any macroeconomic model currently used, is basically a set of equations that correlate different aspects of the economy with each other. The Thurow model, which was developed in the late 1960's, divides the economy into three distinct but related blocks: supply GNP, total income, and demand GNP. Estimates of supply GNP, demand GNP, and total income were developed *simultaneously*. The specific equations used in the Thurow model differ substantially from

models currently used by BLS and other forecasters. However, all macroeconomic model work is similar in the manner in which it provides a framework for the preparation of a consistent set of projections for a given set of assumptions and goals.

In the Thurow model, the key equation for the supply GNP was the production function which estimated the level of private GNP, given the labor and capital resources available to the private sector. The demand section related personal consumption, investment, government, and net foreign trade to personal income, profits, and other income variables. The income section was oriented toward personal income, which was determined by social insurance contributions, transfer payments to persons, and other taxes; by supply GNP; and by other variables. In the next section, we review the results of the BLS projections of the aggregate economy based on the variables in the supply block of the Thurow model.

Supply GNP. As seen in the following tabulation, each projection overestimated the level of real GNP (in 1982 dollars):

	GNP (billions)	Difference from actual	
		Percent	Level (billions)
Projected in—			
1973	\$4,405	22.1	\$797
1976	4,152	15.1	544
1978	4,017	11.3	409
Actual 1985.....	3,608	—	—

The trends for real GNP were overestimated in each projection. Further, the differences between the projected and actual trends are similar. The percent errors for the GNP estimates were different only because the projections covered different time spans—13, 12, and 8 years, respectively.

Year published	Period covered	Annual percent change in GNP		
		Projected	Actual	Difference
1973	1972–85	4.1	2.7	-1.4
1976	1973–85	3.5	2.3	-1.2
1978	1977–85	3.9	2.5	-1.4

The large errors for supply GNP reflect BLS' projected productivity trends. In each case, BLS projected that productivity in the nonfarm sector would accelerate slightly from the historical trend. In each instance, the actual productivity growth was slower than the historical growth. In the 1973 and 1976 projections, BLS underestimated employment growth which, in turn, partially offset the productivity errors in the supply GNP estimates. In the 1978 projections, BLS overestimated total employment growth, which added to the error resulting from the high productivity estimate.

Demand GNP. In the demand section, projections were made of personal consumption expenditures, investment expenditures, government expenditures, and net foreign trade.

Each projection underestimated personal consumption expenditures as a proportion of GNP. The largest error occurred in the 1973 projections. At that time the projected share for 1985 was 62.3 percent of GNP but the actual 1985 share would be 65.2 percent. BLS had expected personal consumption expenditures as a share of total GNP to decline slightly from what was then a post-war high. It was argued that the large 1972 share was related to the economy being near the peak of a business cycle and was not related to longer term trends. Over the 1972-85 period, however, personal consumption expenditures rose from 62.2 percent of GNP to 65.2 percent, a proportion that was again a record high.

The projections were also incorrect in their estimates of the role of foreign trade in the 1985 economy. The share of imports was consistently underestimated in each projection. The errors in the share of projected exports were small. For example, the 1973 projection error for exports was only 0.2 percentage point (a 10.3-percent share compared to an actual 10.1-percent share). Between 1972 and 1979, exports as a share of GNP increased 2.7 percentage points; between 1979 and 1985, the export share declined by 1.1 percentage points. The export share fluctuated partly because the value of the dollar fluctuated.

Finally, BLS had difficulty projecting government's share of GNP. For example, the 1973 projections underestimated Federal Government expenditures as a share of GNP by 1.4 percentage points and overestimated the State and local government share. In 1973, BLS projected that the growth of defense expenditures would be modest after the end of the Vietnam war, and BLS did not anticipate the growth in defense expenditures during the late 1970's and the early 1980's. BLS expected State and local government expenditures to continue increasing as a share of GNP over the 1972-85 period, although not as rapidly as during the 1955-72 period. However, the State and local government share declined over this period as these government units faced budget problems which limited the growth of expenditures.

The largest errors in the 1973 projections of final demand shares of GNP were for personal consumption expenditures (a 2.9-percentage point underestimate), State and local government (a 2.4-percentage point overestimate), Federal Government (a 1.4-percentage point underestimate), and imports (a 1.2-percentage point underestimate). (See table 1.)

The largest errors in the 1976 projections were for personal consumption expenditures (a 1.5-percentage point underestimate), Federal Government (a 1.9-percentage point overestimate), and State and local government (a 1.4-percentage point overestimate).

Table 1. Distribution of projected and actual final demand, 1985
[In percent]

Category	Projected in—			Actual
	1973	1976	1978	1985
Gross national product....	100.0	100.0	100.0	100.0
Consumption.....	62.3	63.7	64.6	65.2
Durable goods.....	7.5	—	9.5	9.8
Nondurable goods.....	24.0	—	24.0	23.5
Services.....	30.8	—	31.1	31.9
Investment.....	18.1	18.3	19.0	17.6
Nonresidential structures....	4.7	4.3	3.5	4.1
Producers' durable equipment.....	7.3	7.9	7.8	8.4
Residential investment.....	4.9	5.0	5.8	4.8
Inventory change.....	1.2	1.1	1.9	.2
Net exports.....	-1.6	-1.7	-.6	-3.0
Exports.....	10.3	10.6	9.9	10.1
Imports.....	-11.9	-12.3	-1.6	-13.1
Government.....	21.2	19.7	17.0	20.1
Federal.....	7.6	7.1	6.3	9.0
State and local.....	13.6	12.6	10.6	11.2

NOTE: Estimates are based on 1982 dollars. Dash indicates detail not available.

In 1978, the largest projections errors were for imports (a 2.5-percentage point underestimate), investment (a 1.4-percentage point overestimate), and Federal Government (a 2.7-percentage point underestimate).

Output by major industry. The next several steps of the BLS projections program involve projections of industry activity rather than projections of aggregate GNP using the macroeconomic model. Projections of industry activity are based on input-output and industry productivity models. In the first step of the industry projections, the final demand projections are combined with projections of industry technologies (based on input-output analysis) to yield industry output projections. The industry output estimates are, in turn, used to make projections of value added or gross product originating by major industries.

For each projection, the errors in projecting the share of GNP by major industry were usually modest (at least in comparison to the errors in projecting final demand shares of GNP). The largest errors generally occurred in the 1978 projections. Service industries were projected to account for 13.1 percent of GNP in 1985, while their actual share was 15 percent. (See table 2.) The source of this error is difficult to determine precisely, but it was offset by overestimates in mining and construction. However, BLS substantially underestimated (by nearly half) the growth of business services while overestimating the growth of medical services. The error might also be related to BLS projected input-output coefficients. The input-output errors cannot be determined, inasmuch as consistent historical and projected input-output tables are not available. The projected share for transportation industries was 4.7 percent in 1978; the actual share was 3.5

percent. The error in projecting manufacturing's share was only 0.2 percentage point.

For the 1973 projections, the largest errors, or differences between actual and projected shares of GNP, were usually less than 1 percentage point. For example, the projected share for retail trade was 8.8 percent of GNP; the actual share was 9.5 percent. The projected share for construction was 5.3 percent of GNP; the actual share was 4.6 percent.

Labor productivity. BLS also projects labor productivity—output per hour—by industry. For each of the three projection periods, two labor productivity projections were made. First, BLS projected labor productivity in the private nonfarm sector to accelerate modestly compared to the historical trend. Second, for each major industry, projected productivity trends were developed that were similar to the historical trends. For example, in the 1973 projections, labor productivity growth in the nonfarm sector was projected at 2.9 percent per year over the 1972–85 period. During the historical period, the growth was 2.5 percent per year. (For 1973 projections, the historical period was the 1955–72 period). The projected growth of manufacturing productivity was 2.7 percent per year over the 1972–85 period, compared to 2.8 percent per year over the 1955–72 period. In each instance, the *actual* nonfarm economy productivity growth trends turned out to be substantially slower than the historical trends. The similarity between historical and projected trends held only for manufacturing industries as a group. The productivity trends for nonmanufacturing industries as a group also slowed substantially compared to historical trends.

These two errors cannot be explicitly documented because required data were not published by BLS. The point, however, can be made with actual trends. For the 1973 projections, BLS assumed that productivity trends for the 1955–72 period would essentially continue over the 1972–85 period. Over the 1959–72 period, productivity in the nonfarm business economy increased 2.3 percent per year and in the manufacturing industries, 2.5 percent per year. However, over the projected period, 1972–85, productivity in the nonfarm economy grew only 0.9 percent a year, or 1.4 percentage points less than during the reference period. Manufacturing productivity grew 2.6 percent per year over the 1972–85 period, or only 0.1 percentage point more than during the reference period.

Productivity growth for nonfarm industries as a group slowed over the projected period. BLS did not incorporate this trend in its 1973 projections. Similar errors occurred for the 1976 and 1978 projections.

Total employment. Included in the BLS projection program are estimates of total employment, employment by major industry, and employment by detailed industry. (The last element in the BLS projections program is the projection of employment by occupation. It is not possible to evaluate 1985 occupational projections because in 1982 an entirely new system of occupational classification was put in place.)

As noted in the introduction, BLS underestimated 1985 employment in the 1973 and 1976 projections and overestimated employment in the 1978 projections. Thus, BLS underestimated the growth of total employment in the 1973 and in the 1976 projections and overestimated employment growth in the 1978 projections. The following tabulation shows the projected and actual annual growth rates in total employment for each of the three projection periods:

Year published	Period covered	Projected	Actual	Difference
1973.....	1972–85	1.8	2.0	–.2
1976.....	1973–85	1.7	1.8	–.1
1978.....	1977–85	2.2	2.0	.2

These modest differences between the projected and actual growth in each of the three periods reflect substantial offsetting errors in the projection of population, labor force participation rates, and the unemployment rate. The 1973 and 1976 projection errors were further offset because an overestimate of the number of persons holding two jobs or more reduced the total error.

For each of the three projection periods, population growth among persons age 16 and older was underestimated by the Bureau of the Census. The error for the 1973 and 1976 projections was 8 million persons. The error for the 1978 projections was 5 million persons. These errors

Table 2. Distribution of projected and actual gross product originating, by major industry, 1985
(In percent)

Industry	Projected in—			Actual
	1973	1976	1978	1985
Gross national product	100.0	100.0	100.0	100.0
Goods-producing sector:				
Agriculture	1.8	2.1	2.2	2.6
Mining	3.5	4.1	4.2	3.6
Construction	5.3	5.6	5.4	4.6
Manufacturing	22.1	22.5	22.1	21.9
Service-producing sector:				
Transportation	4.7	4.7	4.7	3.5
Communication	2.5	2.3	2.5	2.6
Public utilities	2.9	3.3	2.8	2.9
Wholesale trade	6.9	6.9	7.2	7.5
Retail trade	8.8	9.5	9.6	9.5
Finance, insurance, and real estate	15.0	14.3	14.9	14.5
Services	14.7	13.3	13.1	15.0
Government enterprises	1.3	1.3	1.4	1.2
General government	9.3	9.8	9.0	9.8
Statistical discrepancy, rest-of-world	1.2	.3	.9	.8

were, in part, related to the substantial adjustment to population estimates as a result of the 1980 Census of the Population. The population errors were also partially related to an underestimate of the level of net migration during the 1980's.

BLS underestimated the level of female participation in the labor force in the 1973 and 1976 projections. In its 1973 initial projections of the 1985 labor force, BLS assumed that the large increase in female labor force participation which occurred in the early 1970's would not continue to the same extent in the 1980's. However, in its 1978 projections, BLS finally accepted the rapidly rising female labor force participation rate as a long-term phenomenon.

BLS also assumed that the economy would operate with relatively full employment over time in each of three projection periods. The 1973 projections estimated the 1985 unemployment rate at 4 percent; the 1976 projections at 4.5 percent; and the 1978 projections at 4.7 percent. The actual 1985 unemployment rate was 7.2 percent.

Major industries. Employment has been shifting from goods-producing industries to service-producing industries over the past decade. While BLS projected this shift, the size of the shift was underestimated in each of the three projection periods. In 1973, the projected 1985 share of total employment accounted for by goods-producing industries was 3.6 percentage points higher than the actual share; in 1976, it was 2.4 percentage points greater; and in 1978, it was 2.6 percentage points greater. (See table 3.)

Among the major industries, the share of total employment was overestimated for manufacturing and State and local government and underestimated for services. In the

1973 projections, as an illustration, the projected increase in manufacturing employment was 4.2 million jobs over the 1972-85 period. However, the actual increase in manufacturing employment was only 200,000 jobs.

The errors occurred in part because BLS overestimated the projected output trends in manufacturing industries and underestimated the trends in service industries. These output errors in turn reflect other errors in the projections. BLS could not anticipate the severe 1981-82 recession and the subsequent slow recovery over the 1982-85 period, or the adverse foreign trade developments of the 1980's. These two related phenomena particularly affected manufacturing output and employment trends.

The errors in projecting the distribution of employment in 1985 also occurred because of errors in projecting productivity growth for the detailed industries. For each of the three periods, the projected productivity growth in the service sector was greater than the actual growth. In the 1973 projections, BLS assumed that productivity growth in the service industries would nearly match that in the manufacturing industries. However, the actual productivity growth for these sectors has not been similar. Over the 1972-85 period, manufacturing productivity grew 1.7 percent per year, while services productivity grew very little, if any. These productivity errors were the largest for the 1973 projections.

Detailed industries. BLS also projects employment among the detailed industries. For 1973, the average projected increase in industry employment was 1.6 percent per year over the 1972-85 period. The average actual increase was 0.8 percent per year, just half of the projected average trend. (See table 4.) For the 1976 projections, the difference between the average projected and actual trends was only 0.5 percentage point per year. For the 1978 projections, the difference was the largest, 1.8 percentage points per year.

We can review the accuracy of these projections in other ways. For about two-thirds of the industries in the 1973 and 1976 projections, the errors were relatively small, less than 2 percentage points per year above or below the actual trends. For the 1973 projections, the errors were relatively small for 57 of the 101 industries, and the same was true for 62 of the 101 industries in the 1976 projections; for the 1976 projections, the errors were relatively small for only about two-fifths of the industries evaluated here, or 55 of the 123 industries.

Another issue is whether BLS correctly projected the direction of change. Had employment increased or declined in all the industries where BLS projected increases or declines? In the 1973 projections, the direction of employment change was correctly projected for 65 of 101 industries; in the 1976 projections, the direction was correct for 64 of the 101

Table 3. Projected and actual employment, 1985
[Percent distribution]

Industry	Projected in—			Actual
	1973	1976	1978	1985
All industries	100.0	100.0	100.0	100.0
Goods-producing	30.0	29.1	29.3	26.7
Agriculture	2.0	2.3	3.0	2.9
Mining .....	.6	.7	.9	.8
Construction	5.1	5.5	5.1	5.4
Manufacturing	21.6	20.6	20.3	17.6
Service-producing	69.7	70.9	70.7	73.3
Transportation	3.0	2.8	3.0	3.0
Communication	1.2	1.3	1.2	1.2
Utilities .....	.7	.8	.7	.8
Wholesale trade	4.8	4.8	5.1	5.4
Retail trade	14.9	15.3	17.2	16.9
Finance, insurance, and real estate	5.3	5.4	5.3	5.8
Services	19.8	20.3	20.4	22.3
Private households	1.8	.8	.9	1.1
Government:				
Armed Forces	1.9	1.9	1.8	2.0
Federal Government	2.7	2.6	2.5	2.6
State and local government	14.7	15.0	12.3	12.1

Table 4. Projected and actual industry employment trends to 1985 and selected error estimates from the 1973, 1976, and 1978 projection rounds
[In percent]

Item	Projected in—		
	1973	1976	1978
Average trends:			
Projected	1.6	1.2	0.2
Actual .....	.8	.7	1.8
Difference .....	.8	.5	1.8
Average absolute error:			
Jobs (thousands)	177	151	97
Percent error	30.5	25.4	23.8
Annual trends:			
Unweighted	2.0	1.9	2.9
Weighted	1.5	1.4	1.5
Squared	6.4	5.8	14.6

industries; and in the 1978 projections, it was correct in 67 of 123 industries.

There are other measures for reviewing industry projection errors. *Average percentage errors* allow positive errors to offset negative errors. An alternative is the *average absolute percentage error* or the error without regard to sign. With this alternative, positive and negative errors are not offset. A third statistic is a *weighted average percentage error*. It weights the individual absolute percentage errors by the employment size of each industry. By weighting the errors, this third statistic emphasizes the errors of the larger industries. A final statistic is the *root mean squared error*. It is the average of the individual percentage errors after the errors have been squared. This fourth choice emphasizes extreme errors.

The average absolute error (unweighted) for the 1973 projection was 2.0 percentage points per year across all the industries in the private economy over the 1972–85 period. As a result, projected employment levels, on average, were about 30.5 percent higher or lower than the actual employment levels.

In each of the three projection periods, the detailed errors declined when industry size was considered. For the 1978 projection, the average absolute error declined from 2.9 percentage points per year to 1.5 percentage points per year when the errors were weighted for industry size.

Finally, there were many large errors in each of the three projection periods. In the 1976 projections, the average of individual errors without regard to sign was 1.9 percentage points per year. When the individual errors are squared, the average of individual errors rises sharply to 5.8 percentage points per year. The greatest errors over the three projection periods, at the individual industry level, occurred for ore mining, blast furnaces, and farm machinery. (See table 5.)

Industry projections

Industry projections are the results of many steps, all of which may contribute to an error in projections. The fol-

lowing discussion covers some of the difficulties in projecting a specific trend for a specific industry.

In its projections, BLS has always highlighted the fastest growing industries. In each of the three projection periods, BLS included computer and peripheral equipment and business services among the five fastest growing industries. Indeed, these two industries were the fastest growing for the respective periods. Nevertheless, BLS still underestimated their growth—by an average of 2 percentage points per year for computers and 2.9 percentage points per year for business services. These errors are similar to the average errors for all industries. They highlight the difficulty of projecting trends that are considerably above average.

Industries affected by imports pose other problems. The motor vehicles industry is one that has received considerable attention. In the 1973 and 1978 projections, BLS overestimated the growth of this industry. In 1973, BLS projected modest employment growth for the industry for the 1972–85 period, during which employment in the industry actually remained unchanged. But the 1973 error was below the average for all industries. In 1978, BLS projected considerable employment growth for this industry for the 1977–85 period when, in fact, employment in the industry would decline. But the 1978 error was above the average error for all industries. However, in 1976, BLS projected employment in the industry to decline over the 1973–85 period and employment did decline, but slightly less than BLS projected. The average error for the motor vehicles industry across the three projection periods was typical for all industries.

The iron and steel industry also has received considerable attention. In each of the projection periods, employment in blast furnaces and basic steel products and in iron and steel foundries was projected to grow modestly when, in fact, employment declined.

The economic scene

Several major economic events occurred during the late 1970's and early 1980's that had an effect upon the projections process. Energy prices and interest rates fluctuated widely. The Federal Government operated in substantial deficit and the U.S. trade imbalance grew significantly while labor productivity growth slowed. At the same time, the value of the U.S. dollar also fluctuated and the Nation experienced two recessions. The magnitude of these changes highlights the uncertainty inherent in projecting employment trends over an 8- to 12-year period.

Error sources

Employment. This section focuses on the contribution of the errors of individual variables to the error in projected total employment. To what extent were the projections of total employment wrong because the projections of one of the component variables such as the

Table 5. Errors in estimates of 1985 industry employment from the 1973, 1976, and 1978 projections rounds
 [Percentage points]

Industry	Projection year			Average absolute error	Industry	Projection year			Average absolute error
	1973	1976	1978			1973	1976	1978	
Agriculture	-3.1	-2.0	0.6	1.9	Farm machinery	3.4	4.8	8.7	5.7
Ore mining	5.9	5.0	10.9	7.3	Construction and mining equipment	2.8	5.0	6.8	4.9
Coal mining	-1.0	.8	6.1	2.6	Material handling equipment	3.6	3.5	5.2	4.1
Crude petroleum	-7.6	-3.9	-3.1	4.9	Metalworking machinery	1.7	2.0	3.6	2.4
Stone and clay mining	1.2	.4	.7	.8	Special industry machinery	1.8	2.1	4.0	2.6
Construction	-.6	-.0	-.6	-.4	General industrial machinery	3.1	2.4	3.6	3.0
Other ordnance	-1.1	.4	-4.5	2.0	Machine shop products	-1.5	-.7	-.2	.8
Guided missiles	-.8	-3.3	-7.8	4.0	Computers	-.5	-1.8	-3.7	2.0
Meat products .....	.5	-.1	.2	.3	Typewriters and other office equipment	3.8	3.2	2.7	3.2
Dairy products .....	.5	-.1	-1.7	.8	Service industry machines	1.7	1.2	3.8	2.2
Canned and frozen products .....	.5	-.1	3.5	1.4	Electric transmission equipment	4.8	3.9	3.3	4.0
Grain mill products .....	.5	-.1	2.4	1.0	Electrical industrial apparatus	2.0	3.9	4.5	3.5
Bakery products .....	.5	-.1	.4	.4	Household appliances	3.1	4.3	5.5	4.3
Sugar .....	.5	-.1	3.5	1.4	Electric lighting and wiring	4.6	3.2	4.3	4.0
Alcoholic beverages .....	.5	-.1	-.0	.2	Radio and television sets	3.1	3.5	5.2	3.9
Soft drinks .....	.5	-.1	.9	.5	Telephone apparatus	1.5	1.8	4.8	2.7
Miscellaneous food products .....	.5	-.1	2.1	.9	Other communications equipment	-2.5	-4.5	-5.4	4.1
Tobacco manufacturing .....	.7	-.7	.4	.6	Electronic components	-2.3	-3.1	-2.3	2.6
Fabric, yarn, and thread mills	3.1	3.3	3.0	3.2	Other electrical machinery	-.4	1.1	.8	.7
Floor coverings	1.9	1.4	5.1	2.8	Motor vehicles	1.2	-.4	3.7	1.8
Miscellaneous textile goods	1.9	1.4	5.1	2.8	Aircraft	-.8	-.7	-2.0	1.2
Hosiery and knit goods	2.5	1.9	4.0	2.8	Ship and boat building	4.8	3.4	3.5	3.6
Apparel	3.0	2.8	4.2	3.3	Railroad equipment	3.1	3.3	10.0	5.4
Miscellaneous fabricated textiles	1.0	1.2	1.6	1.3	Miscellaneous transportation	3.1	3.3	8.3	4.9
Logging	-.4	.4	.9	.6	Scientific and controlling instruments .....	.4	-.6	-2.3	1.1
Sawmills and planing mills	-.4	.4	.8	.5	Medical and dental instruments	-1.5	-.9	-.1	.8
Millwork and plywood .....	.8	.7	1.7	1.0	Optical and ophthalmic equipment	-1.5	.0	2.6	1.4
Household furniture	2.8	1.8	3.6	2.7	Photographic equipment	3.0	2.2	4.1	3.1
Other furniture	-1.1	-1.9	-1.4	1.5	Watches and clocks	1.2	2.0	13.0	5.4
Paper products	1.1	.6	.7	.8	Miscellaneous manufactured products	1.2	2.0	3.9	2.4
Paperboard	3.6	2.9	2.7	3.1	Railroad transportation .....	.2	1.5	4.6	2.1
Newspapers	-.7	-1.2	.5	.8	Local transit	-.2	-.1	-.6	.3
Periodical and book printing	-.9	-1.1	-2.5	1.5	Truck transportation .....	.6	-.4	.7	.6
Miscellaneous printing	-.9	-1.1	-2.3	1.4	Water transportation	-.9	-.8	-.1	.6
Chemical products	1.2	.1	1.8	1.1	Air transportation	-.2	-1.5	-1.3	1.0
Agricultural chemicals .....	.6	.2	1.8	.8	Other transportation	-5.2	-4.5	-3.2	4.3
Plastics materials	4.2	4.3	5.4	4.6	Communication, except broadcasting .....	.4	1.0	.7	.7
Drugs .....	.4	-.6	-.1	.4	Radio and TV broadcasting	-2.8	-2.0	-.9	1.9
Cleaning and toilet preparations .....	.8	.0	.5	.5	Electric utilities	-2.2	-.9	-1.0	1.4
Paint	1.7	1.4	3.1	2.1	Gas utilities .....	.5	-.5	-1.7	.9
Petroleum products	-.6	1.1	.1	.6	Water and sanitary services	-.3	1.2	-.7	.7
Rubber products	-2.0	-1.4	5.6	3.0	Wholesale trade	-1.1	-1.3	-.5	.9
Miscellaneous rubber products	-2.0	-1.4	2.6	2.0	Retail trade	-1.2	-1.0	.5	.9
Plastic products	5.0	5.5	-1.7	4.1	Banking	-.6	-.6	.5	.6
Leather and footwear	3.9	3.1	4.3	3.7	Credit agencies	-.6	-.6	-3.2	1.5
Glass	3.5	2.5	4.3	3.4	Insurance	-.6	-.5	-.4	.5
Cement and concrete products	2.3	1.8	1.6	1.9	Other real estate	-2.1	-2.0	-1.7	2.0
Structural clay products	2.3	1.8	2.4	2.1	Hotels and lodging places	-1.2	-1.6	-.2	1.0
Steel mill products	4.9	5.8	8.2	6.3	Personal and repair services	-.6	-1.6	-1.4	1.2
Iron and steel foundries	2.0	2.7	8.0	4.2	Business services	-2.2	-2.7	-3.7	2.9
Primary copper products	2.0	2.7	3.5	2.7	Professional and legal services	-2.1	-1.9	-2.6	2.2
Primary aluminum products	2.0	2.7	4.6	3.1	Automobile repair	-2.0	-2.5	-3.1	2.5
Metal containers	3.1	2.4	5.6	3.7	Motion pictures	-1.6	-1.0	.2	.9
Heating and plumbing apparatus	2.4	1.4	1.7	1.8	Other amusements	-.5	-1.5	.8	.9
Fabricated structural metal products	2.5	2.3	4.6	3.1	Health services except hospitals	-1.6	.3	-1.4	1.1
Screw machine products	5.7	4.9	1.7	4.1	Hospitals	1.1	1.3	1.8	1.4
Metal stampings	5.7	4.9	4.6	5.0	Other medical services	-1.6	.3	2.1	1.3
Cutlery and hand tools	5.7	4.9	5.1	5.2	Educational services	-.8	-.1	-.6	.5
Other fabricated products	5.7	4.9	1.8	4.1	Nonprofit organizations	-.8	-1.1	-.2	.7
Engines and turbines	4.0	3.1	4.7	3.9	Private households	3.7	-3.3	-1.8	2.9

unemployment rate were incorrect? To isolate the impact of the errors in the labor force projection, for example, we had to determine what the projected total employment level would have been if BLS had correctly projected the unemployment rate, the number of persons in the Armed Forces, and other variables and had only made an error in projecting the labor force. The difference between this calculated total employment level and actual 1985 em-

ployment is the effect of the erroneous labor force projection. We repeated this process for each variable in the employment projection. Table 6 shows the results of these calculations.

For 1973, the largest error was the projected 1985 labor force. If labor force had been the only error, BLS projections would have underestimated total 1985 employment by 8.9 million jobs. However, this large neg-

ative error was partially offset by two large positive errors in unemployment and in the adjustment for dual jobholders.

In 1976, the projected labor force again had the largest negative error. That error was also partially offset by positive errors in projecting unemployment and in the adjustment for dual jobholders.

For 1978, the largest error was projected unemployment. This positive error was partially offset by a modest negative error for the projected labor force.

Supply GNP. Supply GNP is one of three parts of the BLS simultaneous macroeconomic projection. As noted earlier, supply GNP includes projections of labor productivity, average annual hours, and other variables, as well as total employment. Here we want to determine the contribution of the errors in each underlying variable to the error in the supply GNP estimate. Our analysis is limited to the first-round effects.

As with the projection of total employment, in order to isolate the impact of the erroneous labor force projection on the GNP projection, we have to determine what the projected GNP level would have been if BLS had correctly projected the unemployment rate, average annual hours, labor productivity, and other variables and had only made an error in projecting the labor force. The difference between this GNP level and the actual 1985 GNP is the effect of the erroneous labor force projection. We repeated this process for each variable in the GNP projection. Table 7 shows the results of these calculations.

The 1973 projections overestimated GNP because of the productivity projection. That error contributed \$920 billion to the total error of \$797 billion. This positive error was partially offset by the effect that negative errors in the labor force projection had on supply GNP.

The 1976 projection also overestimated GNP because of its productivity projection. The error of the productivity projection matched the total error of \$544 billion. This positive error was again partially offset by the negative error for the labor force projection.

The 1978 projections continued to overestimate GNP because of the productivity projection error. That error accounted for \$355 billion of the total \$409 billion error.

It was not possible to carry out a similar set of calculations for the detailed industry projections. To do that, a current input-output table comparable to the table used in each of the three sets of projections would be required. Such current tables do not exist.

BLS projections: on target or off the mark?

In this article, we only list the errors of BLS projections of the 1985 economy. At some point, we need a standard to gauge the relative accuracy of the published data. One gauge of relative accuracy is past BLS projections. An-

other is to compare BLS projections with other medium-term projections. Because employment projections are the primary product of the BLS projection program, we limit this comparison to employment.

Past BLS projections. BLS has now evaluated eight employment projections. The errors in the projections of total employment growth range from a -0.4 percentage point per year for the 1976 projection of the 1980 economy to a positive 0.6 percentage point per year for the 1973 projection of the 1975 economy. (See table 8.) The average absolute errors in projecting industry trends have ranged from 1.3 to 2.9 percentage points per year. The spread of error is slightly smaller when the errors are weighted for industry size, ranging from 1.0 to 2.1 percentage points per year. The 1980 projections prepared in 1970 were the most accurate, while the 1980 projections prepared in 1973 were the least accurate. The three projections for the 1985 economy fall about in the middle of the error range of past BLS projections.

Other medium-term projections. Finally, how do BLS projections compare with other projections? Several forecasters conducting similar studies underestimated the 1985 level of total employment. Their errors were similar to those of BLS because all the forecasters used the same population projections and assumed similar unemployment rates. BLS and another forecaster underestimated the employment shift from goods-producing industries to service-producing industries.

In the 1970's, several organizations prepared projections of the mid-1980's economy. In 1973, Clopper Almon of the University of Maryland and the National Planning

Table 6. Factored errors in projection of 1985 total employment

[Numbers in thousands]

Item	Projected in —		
	1973	1976	1978
Total error	-1,986	-2,219	2,054
Error due to:			
Labor force	-8,931	-6,724	-756
Armed Forces	-16	-11	-13
Unemployment	3,775	3,185	2,949
Adjustment factor ¹	3,662	1,748	-113
Interaction	-476	-327	-13
	Percent of total error		
Total error	100	100	100
Error due to:			
Labor force	-450	-316	-37
Armed Forces	-1	0	-1
Unemployment	190	150	143
Adjustment factor ¹	184	82	-6
Interaction	-24	-15	-1

¹Includes adjustment for multiple jobholders and other statistical differences between employment as measured by the Current Population Survey and the Current Employment Survey (790).

Association (NPA) published projections for the 1973–85 and 1973–83 periods, respectively.⁴ In this brief comparison, we assume that NPA's 1973–83 trends continued through 1985. In 1976, the NPA published projections for the 1976–86 period.⁵ Like BLS, Almon and NPA use models and judgments to make projections. (Again, this comparison is *limited* because very few medium-term employment projections are developed. Most projections are for 1 year ahead, *not 10 years ahead*.)

1973–85 projections. Total employment growth was slightly underestimated in the BLS and Almon projections of the mid-1980's economy and slightly overestimated in the NPA projections. The errors were small, less than 0.3 percentage point per year, and similar because each economic projection used the Bureau of the Census population projections. Further, each assumed the economy would operate in the longer run at full employment.

Almon overestimated real GNP growth for the 1973–85 period by 0.4 percentage point per year. NPA overestimated GNP growth by 1.3 percentage points per year. As previously noted, BLS overestimated the trend by 2.1 percentage points per year. The differences reflect the respective productivity projections. Almon projected a slowdown in productivity while NPA projected a slight acceleration. BLS projected a more substantial acceleration.

Both Almon and BLS underestimated the employment shift from the goods-producing sector to the service-producing sector. Almon projected that employment in the goods-producing sector would account for 7 percent of the net new jobs over the 1973–85 period, while the ac-

Table 8. BLS errors in projecting employment trends, selected periods

[Percentage points]

Year published	Year projected	Difference between projected and actual trends		
		Total employment	Industry trends (Average absolute errors)	
			Unweighted	Weighted by size of industry
1966	1970	-0.2	1.4	1.1
1973	1975	.6	2.3	1.3
1970	1980	-.3	1.3	1.0
1973	1980	-.2	2.7	2.1
1976	1980	-.4	1.5	1.2
1973	1985	-.2	2.0	1.5
1976	1985	-.1	1.9	1.4
1978	1985	.2	2.9	1.5

tual share was 2 percent. BLS projected that employment in the goods-producing sector would account for 16 percent of the additional jobs, while the actual share was 7 percent. (The estimates of the actual share differ because the two forecasters used different employment measures. For example, Almon's measure converts part-time workers to full-time equivalents, while the BLS measure does not.) Because NPA did not project employment for all industries, this point cannot be evaluated.

1977–85 projections. BLS overestimated total employment growth between the late 1970's and mid-1980's, while NPA underestimated the growth. The respective errors were less than 0.3 percentage point per year. The difference between the projections reflects the respective labor force projections. BLS overestimated the labor force growth, while NPA underestimated it. Both assumed the economy would be operating at near full employment.

Both BLS and NPA overestimated real GNP growth by about 1.5 percentage points per year. Each assumed productivity would accelerate.

Finally, both underestimated the employment shift from the goods-producing sector to the service-producing sector. Both projected that about one-fourth of the additional employment would occur in the goods-producing sector; the actual share was less than one-tenth during the 1977–85 period.

Future benefits

Evaluations of the projections are designed to show their strengths and weaknesses. Without an evaluation, we might only guess at the accuracy of the projections and probably compound any errors introduced into the process. Accordingly, the judgments and economic models which go into any projection are continuously reviewed.

In this evaluation no pattern of errors emerged which would suggest changes in the data or procedures. We have not separated the effects of data or procedural errors on

Table 7. Factored errors in projection of 1985 supply GNP

[Billions of 1982 dollars]

Item	Projected in —		
	1973	1976	1978
Total error	\$797	\$544	\$409
Error due to:			
Labor force	-306	-230	-26
Unemployment rate	129	109	101
Adjustment factor	125	60	-4
Government including			
Armed Forces	-28	-23	-6
Average annual hours	10	57	3
Labor productivity	920	544	355
Interaction	-53	27	6
	Percent of total error		
Total error	100	100	100
Error due to:			
Labor force	-38	-42	-6
Unemployment rate	16	20	25
Adjustment factor	16	11	-1
Government including			
Armed Forces	-4	-4	-1
Average annual hours	1	10	1
Labor productivity	115	100	82
Interaction	-7	5	1

the projection process. However, it does seem important to explore wider ranges of assumptions because, at least

for 1985, many of the broad assumptions about the U.S. economy were wide of the mark. □

—FOOTNOTES—

¹The initial projections of the 1985 economy were described in "Projections of GNP, income, output, and employment," *Monthly Labor Review*, December 1973, pp. 27-42; and in detail in *The Structure of the U.S. Economy in 1980 and 1985*, Bulletin 1831 (Bureau of Labor Statistics, 1975). The second projections of the 1985 economy were described in Ronald E. Kutscher, "Revised projections of the U.S. economy to 1980: an overview," *Monthly Labor Review*, March 1976, pp. 3-8; Charles T. Bowman and Terry H. Morlan, "Revised projections of the U.S. economy to 1980 and 1985," *Monthly Labor Review*, March 1976, pp. 9-21; and Thomas J. Mooney and John H. Tschetter "Revised projections to 1985," *Monthly Labor Review*, November 1976, pp. 3-9. The third projections were published in Norman C. Saunders, "The U.S. economy to 1990: two projections for growth," *Monthly Labor Review*, December 1978, pp. 36-46; Valerie A. Personick, "Industry output and employment: BLS projections to 1990," *Monthly Labor Review*, April 1979, pp. 3-14; and Arthur Andreassen, "Changing patterns of demand: BLS projections to 1990," *Monthly Labor Review*, December 1978, pp. 47-55.

²BLS periodically evaluates its labor force, industry employment, and occupational employment projections. See John Tschetter, "An evalua-

tion of BLS' projections of 1980 industry employment," *Monthly Labor Review*, August 1984, pp. 12-21; Max L. Carey and Kevin Kasunic, "Evaluating the 1980 projections of occupational employment," *Monthly Labor Review*, July 1982, pp. 22-30; and Howard N Fullerton's evaluation of projections of the 1985 labor force, *Monthly Labor Review*, forthcoming.

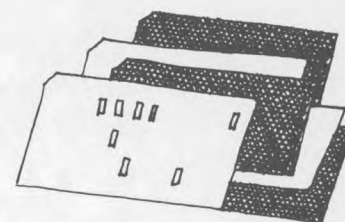
³ The distinction between judgment and economic models is artificial in the context of projections. Judgments are usually based on analysis of trends and relationships between variables, that is, models. The distinctions between independent and dependent variables (which is where the distinction between judgment and model originates) is important in the context of model building or econometrics.

⁴ Clopper Almon, Jr., Margaret B. Buckler, Lawrence M. Horwitz, and Thomas C. Reimbold, *1985: Interindustry forecasts of the American economy* (Lexington, MA, Lexington Books, 1974).

⁵ *The U.S. economy: 1973-83*, NEPS report no. 76-N-1 (National Planning Association, 1974).

⁶ *The next ten years*, NEPS report no. 76-N-2/3 (National Planning Association, 1976).

Research Summaries



Productivity, age, and labor composition changes in the U.S.

MARY JABLONSKI, LARRY ROSENBLUM,
AND KENT KUNZE

It is well known that, since 1973, the United States has been experiencing a slowdown in the rate of growth of labor productivity. From 1948 to 1973, output per labor hour in the private nonfarm business sector grew at an average annual rate of 2.5 percent, while the 1973-86 rate of growth was 0.8 percent, or only one-third as large.

Throughout the period of the slowdown, the composition of the U.S. labor force has been changing. (See table 1.) Between 1970 and 1980, the average age of workers fell sharply, by 2.3 years, and from 1980 to 1986, it rose slightly, by 0.2 year. Besides changes in the age composition of the work force, there also have been changes in the composition of the labor force with regard to sex and educational attainment. The Bureau of Labor Statistics has been studying the relationship between changes in labor composition and productivity growth. Following a discussion of historical and recent Bureau estimates of the relationship between age of the worker and productivity, this report describes preliminary results now available from the new study.

Age and productivity

Several earlier studies conducted by the Bureau directly addressed the issue of age and job performance.¹ This research was part of a broad Department of Labor program of the 1950's and 1960's that examined problems faced by older workers. In each of the studies of comparative job performance by age, indexes of output per hour were constructed using data from employer records. These data were compiled for specific age groups.

The authors are economists in the Division of Productivity Research, Bureau of Labor Statistics. This report is drawn from a paper presented at the conference on "An Aging Workforce: Agenda for Action," sponsored by Wayne State University and the U.S. Department of Labor, in Detroit, MI, March 10-11, 1988. An extended version will appear in a volume of papers prepared for the conference.

Table 1. Average age of the civilian labor force age 16 and over by sex, selected years, 1948-86

Year	Average age		
	All persons	Women	Men
1948	39.0	36.6	40.0
1950	39.4	37.5	40.1
1955	40.4	39.0	41.1
1958	40.5	39.6	40.9
1960	40.4	39.8	40.7
1965	40.0	39.5	40.3
1970	39.2	38.4	39.7
1975	37.6	36.8	38.1
1980	36.9	36.3	37.4
1985	37.0	36.5	37.5
1986	37.1	36.6	37.5

The performance of factory workers in the footwear and furniture industries was the subject of the first study; two other studies involved clerical workers and mail sorters. Findings from all of the studies are displayed in table 2. The results of the footwear and furniture study showed that, for men and women in both industries, there was some decline in output per hour between the ages of 25 and 64. For men, the decline began after age 45, while for women, it started after age 35. There were more substantial declines in productivity among those age 65 and over in the footwear industry (although this was not the case in the furniture industry). For example, in comparison to the average output per hour of men ages 25 to 34, that of men ages 55 to 64 in the footwear industry was 8 percent lower, and that for men age 65 and over was 19 percent lower.

However, the footwear and furniture study also found that there was much variation in output rates within each age group, and that the degree of variability was not closely related to age. In fact, the degree of variation was such that many of the older workers performed better in terms of output per hour than the average for those in the 35-to-44 age group. For example, among men in the footwear industry, 44 percent of those ages 45 to 54 and 30 percent of those ages 55 to 64 exceeded the average output rate for the 35-to-44 group.

In the study of clerical workers, almost no decline in output per hour was seen between the ages of 25 and 64. The difference between the average productivity of those in the 25-to-34 group and those in the 55-to-64 group was less than 1 percent. Furthermore, the clerical workers

Table 2. Indexes of output per hour for workers in selected industries and occupations, by age, selected years

[Index=100 for 35-to-44 age group]

Industry and age group	Men		Women		All workers	
	Index	Coefficient of variation	Index	Coefficient of variation	Index	Coefficient of variation
Footwear (1956-57)						
Under 25	93.8	17.9	94.4	17.1	—	—
25-34	100.3	16.3	102.8	17.5	—	—
35-44	100.0	13.8	100.0	15.2	—	—
45-54	97.7	14.1	98.8	15.6	—	—
55-64	92.5	14.5	94.1	13.1	—	—
65 and over ...	81.1	16.6	88.0	20.7	—	—
Household furniture (1956-57)						
Under 25	98.5	16.3	101.4	18.8	—	—
25-34	101.5	15.1	107.4	19.4	—	—
35-44	100.0	11.8	100.0	17.8	—	—
45-54	96.1	11.0	98.7	16.0	—	—
55-64	94.5	11.8	85.6	18.6	—	—
65 and over ...	93.6	11.6	—	—	—	—
Clerical workers (1958-59)						
Under 25	—	—	—	—	92.4	22.3
25-34	—	—	—	—	99.4	20.1
35-44	—	—	—	—	100.0	18.1
45-54	—	—	—	—	100.1	19.4
55-64	—	—	—	—	98.6	19.4
65 and over ...	—	—	—	—	101.2	20.5
Mail sorters (1961)						
Under 25	—	—	—	—	101.2	13.7
25-29	—	—	—	—	100.1	13.2
30-34	—	—	—	—	101.3	13.0
35-39	—	—	—	—	100.1	12.2
39-44	—	—	—	—	99.8	12.8
45-49	—	—	—	—	99.5	12.6
50-54	—	—	—	—	100.9	12.9
55-59	—	—	—	—	99.1	15.0
60 and over ...	—	—	—	—	96.2	13.7

SOURCE: See text footnote 1.

who were 65 and over had the highest average output per hour of all the age groups. As in the footwear and furniture study, however, a substantial amount of variation in productivity within each age group was found.

Mail sorters were the third group of workers studied. As with the other studies, the output per hour of workers ages 35 to 44 was indexed to 100. The results of this study indicated that there was not a significant amount of variation in average output per hour among age groups below 60. Among those 60 and over, a small decline was observed. Once again, however, there was considerable within-group variation in output per hour among individuals. In each group, the majority of workers had indexes below 95 or above 105.

Together, these studies suggest that there is not a large decline in average productivity between the ages of 25 and 64. The most noteworthy decreases tended to be seen

among those in the oldest group, but in each study, there was much variation in output per hour within age groups.

In all of these studies of comparative job performance, measures of output per hour were constructed with data on the output of individual workers available from employer records. For the majority of workers, such data are not available, thereby precluding the direct measurement of productivity. However, there are ample data on wages, from which more can be learned about productivity. If firms maximize profits in a competitive economy, then the wage of a group of workers is equal to the value of their marginal product. The marginal product is the increase in output resulting from an additional hour of labor. So, the connection between age and an individual's wage can be examined to gain additional insights regarding the connection between age and productivity.

Age and earnings are linked together by work experience, on-the-job training, skills, and productivity. Older workers, on average, have more work experience than younger workers, and because of this they tend to have had more on-the-job training. When workers undergo training, they learn new skills and these new skills make them more productive. A worker who has become more productive tends to earn a higher wage. Hence, as workers become older, their earnings tend to rise. However, during the later years of their working lives, workers may see their hourly earnings level off or possibly drop. This can occur because workers may stop acquiring training towards the end of their working lives. If skills are no longer being acquired, hourly earnings may stabilize. Furthermore, if skills lose value over time, then an individual may find that earnings fall as retirement nears due to this depreciation. So, in general, one would expect a worker's wage to rise for many years and then to level off or perhaps start to decline.

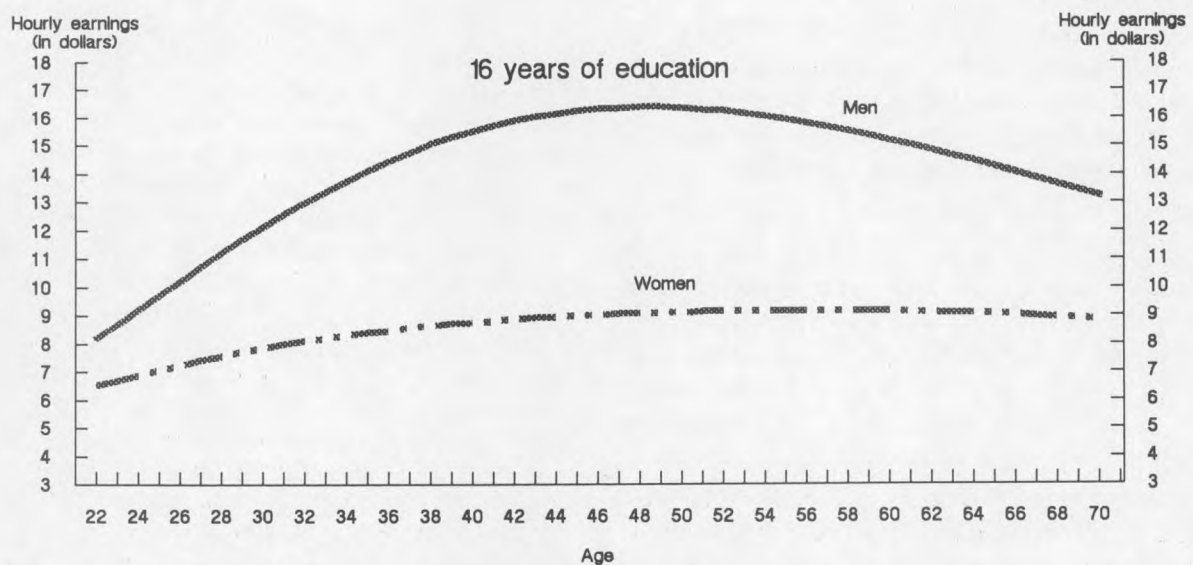
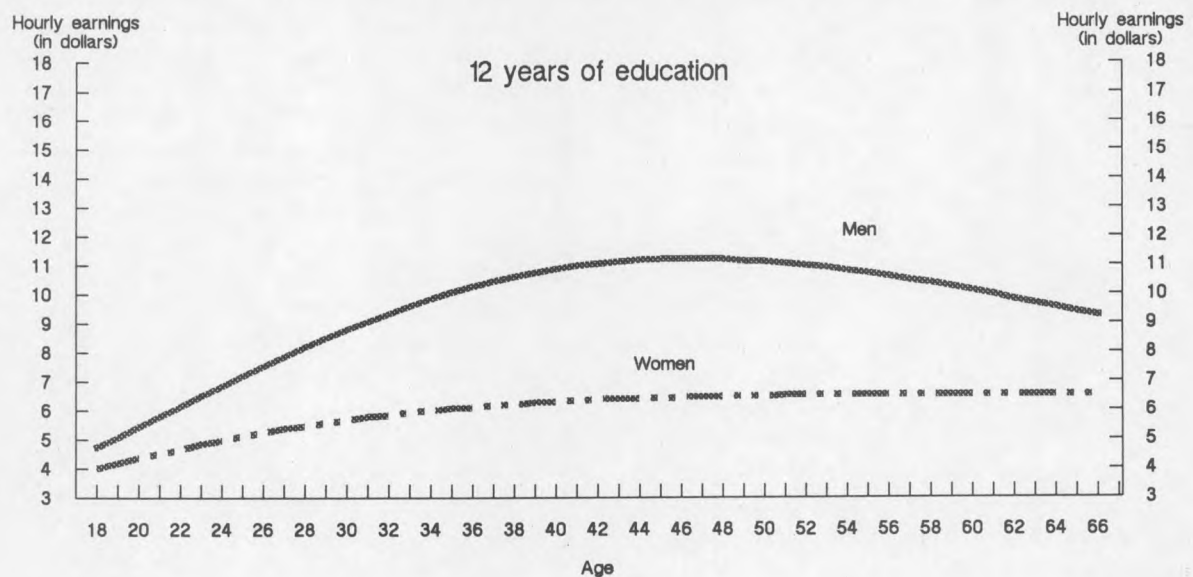
To learn more about the relationship between age and productivity, the Bureau constructed age-earnings profiles, which are presented in chart 1. Each profile is a curve showing the estimated relationship between age and hourly earnings for a particular group of workers, such as male high school graduates. These profiles are based on experience and earnings equations, estimated separately for men and women. Experience equations were estimated because our major data sources do not include a measure of actual work experience. The empirical results are used to estimate the accumulated work experience of individuals, based on certain worker characteristics: age, educational attainment, and in addition, for women, marital status and number of children. (Note that accumulated work experience includes experience acquired while in school.) The estimation was performed with data from the 1973 Exact Match Study, which linked data from the Current Population Survey, Social Security Administration records, and Internal Revenue Service tax returns. Based on the empirical results, a male college graduate has 15

years of estimated experience at age 35. A 35-year-old female college graduate has 14 years of estimated experience if she is single, and 9 years if she is married and has two children.

Earnings equations were constructed with estimated work experience as an explanatory variable. Schooling variables also were included because education, like on-the-job training, raises productivity and wages. The remaining explanatory variables are control variables, such as for region of residence. The equations were estimated with data from the Current Population Survey.

To create age-earnings profiles for high school and college graduates, estimated work experience was calculated with coefficients of the estimated experience equations for each combination of age, sex, and educational level. For the women's profiles, marital status and number of children had to be specified because these factors enter into the women's experience equation; "married with two or three children" was the family status that was specified. Estimated hourly earnings were derived with the intercept and the experience and schooling coefficients of the estimated earnings equations for 1986.²

Chart 1. Estimated hourly earnings by age, sex, and educational attainment, 1986



NOTE: Estimates for women pertain to married women with two or three children.

The age-earnings profile for male high school graduates reveals that their hourly earnings climb until age 46, and then begin to drop slowly. For male college graduates, the peak occurs a couple of years later, at age 48, after which hourly earnings gradually fall. The profiles for women are much flatter than those for men. The estimated hourly earnings of female high school graduates reach the maximum level for women in their late forties and then remain there. For female college graduates, the peak level is attained around age 50, and the wage stays there until it gradually begins to decline for women in their sixties. So, for all of these workers, estimated hourly earnings peak between the ages of 45 and 50; men's earnings start to fall after the peak, while women's earnings stay level for years after the peak is reached. Notice that these age-earnings profiles are based on cross-sectional data, rather than data for specific cohorts of workers over time. Because of this, the shapes of the actual age-earnings profiles of particular cohorts may differ somewhat from those of the profiles depicted in the chart. However, the profiles that the Bureau has constructed do provide a general idea as to the relationship between age and productivity.

Composition of the labor force

Turning to the labor composition study itself, the Bureau has, as mentioned earlier, developed preliminary results. These results may be revised when the study is complete. The growth rate of the labor composition index measures the contribution to labor input of changes in the composition of the work force with regard to work experience, education, and sex. Experience is used rather than age because experience is more closely tied to on-the-job training and job skills. The labor composition index is formed with information on hours of work that have been classified by estimated work experience, education, and sex and information on the price of labor. The price for each type of labor is calculated using the estimated earnings equations described earlier.³

The Bureau study has found that, in the private nonfarm business sector, the index of labor composition grew at an average annual rate of 0.24 percent from 1948 to 1973. During the first part of the productivity slowdown, 1973-79, the growth rate of labor composition was only 0.06 percent. Then, from 1979 to 1986, the rate was 0.51 percent, which is about twice as large as the pre-slowdown rate of growth.

As might be expected, experience accounts for the low growth rate of the labor composition index over the period 1973-79. The main effect of experience on labor composition was -0.42 percent per year during that time. In contrast, prior to the productivity slowdown, the main effect of experience was much smaller in magnitude, -0.10 percent. Then, from 1979 to 1986, the main effect

Table 3. Annual rates of growth of output per hour of all persons and its components in private nonfarm business,¹ 1948-86 and selected subperiods

[In percent]

Measures	1948-86	1948-73	1973-79	1979-86	Percentage-point change in growth rate between—	
					1948-73 and 1973-79	1973-79 and 1979-86
Output per hour of all persons ..	1.9	2.5	0.5	1.2	-2.0	0.7
Contribution of capital intensity ² .....	.8	.8	.6	.9	-.2	.3
Contribution of labor composition ³	.2	.2	.0	.3	-.2	.3
Multifactor productivity ⁴	.9	1.5	-.1	.0	-1.6	.1

¹ Excludes government enterprises.

² Changes in capital services per hour multiplied by capital's share of current-dollar output.

³ Changes in labor composition effects multiplied by labor's share of current-dollar output.

⁴ Output per unit of combined labor and capital inputs, adjusted for labor composition.

of experience was no longer negative; instead, it was slightly above zero, at 0.04 percent per year.

The growth rate of output per hour in private nonfarm business was 2.5 percent from 1948 to 1973. (See table 3.) The growth rate dropped, by 2 percentage points, to 0.5 percent for the period 1973-79. The corresponding drop in the contribution of labor composition to productivity growth was 0.2 percentage point, which means that changes in labor composition account for 10 percent of the initial slowdown in labor productivity. Between 1979 and 1986, the contribution of labor composition to labor productivity was 0.3 percentage point higher than in 1973-79, while labor productivity growth was 0.7 percentage point higher. Hence, changes in labor composition account for about half of the increase in the productivity growth rate that was seen over the 1979-86 period.

TO SUM UP, the growth rate of labor composition fluctuated between 1948 and 1986, and an important source of these fluctuations was changes in the amount of work experience that U.S. workers possessed. This, in turn, was strongly affected by changes in the age distribution of the labor force that occurred during the period. These relationships are especially evident in the data for the 1970's. Between 1973 and 1979, the average age of the work force fell by one full year and the index of work experience fell four times as fast as it did prior to the slowdown. The growth rate of labor composition was only one-quarter as large as it was before the slowdown.

Since 1979, labor composition growth has been much higher than it was during the first part of the slowdown. This has been due in large part to an increase in the effect

of work experience on labor composition. An important reason for this increase is that the average age of the work force has been slowly moving upward in the 1980's, after rapidly declining in the 1970's. The rise in the average age toward the years of peak productivity is expected to continue until at least the year 2000, and it is likely to have a positive effect on the growth of labor composition and labor productivity.⁴ □

—FOOTNOTES—

¹The methodology and results of these studies are described in the following: *Job Performance and Age: A Study in Measurement*, Bulletin 1203 (Bureau of Labor Statistics, September 1956); *Comparative Job Performance by Age: Large Plants in the Men's Footwear and Household Furniture Industries*, Bulletin 1223 (Bureau of Labor Statistics, November 1957); Ronald E. Kutscher and James F. Walker, "Comparative Job Performance of Office Workers by Age," *Monthly Labor Review*, January 1960, pp. 39-43; and James F. Walker, "The Job Performance of Federal Mail Sorters by Age," *Monthly Labor Review*, March 1964, pp. 296-300.

²Because the construction of the profiles involves earnings data for just one year, 1986, inflation is not an issue here. The shapes of the profiles give an indication of what happens (on average) to the real hourly earnings of individuals over the course of their working lives.

³A complete discussion of the methodology and results of the labor composition study will be available in a future Bureau of Labor Statistics publication.

⁴See Ronald E. Kutscher, "Overview and implications of the projections to 2000," *Monthly Labor Review*, September 1987, pp. 3-9; and Howard N. Fullerton, Jr., "Labor force projections: 1986 to 2000," *Monthly Labor Review*, September 1987, pp. 19-29.

Employers and child care: what roles do they play?

HOWARD V. HAYGHE

As more and more mothers are joining the ranks of the employed, child care has become one of today's most widely debated social and political issues. Awareness of the problem has spread dramatically, as demonstrated by the recent report by the Secretary of Labor and by child-care initiatives presently in the Congress.¹ Employers, too, are beginning to be involved in the search for solutions.

As in the past, American employers on the whole still do not play an active role in the care of their workers' children. However, with mothers becoming a more im-

portant part of the work force, some employers are coming to realize that the difficulties that their employees face in arranging care for their children may result in absenteeism, tardiness, low morale, and productivity problems. This may be exacerbated in some areas by worker shortages. Consequently, there is some evidence that employers are looking at steps they can take to help their employees who are parents.²

To determine what employers were doing, the Bureau of Labor Statistics conducted a special nationwide survey of approximately 10,000 business establishments and government agencies in the summer of 1987.³ Results from this survey show that direct aid to working parents is still very limited. Only about 2 percent, or 25,000, of the Nation's 1.2 million nonagricultural establishments with 10 or more employees actually sponsored day-care centers for their workers' children while an additional 3 percent provided financial assistance towards child-care expenses.⁴ But, as this report will show, employers are doing a number of other things to aid employees with growing children.

Scope of the issue

The potential demand for child care is immense. As of March 1987, there were 10.5 million children under the age of 6 whose mothers were in the labor force—more than half of all children these ages.⁵ In addition, there were 15.7 million youngsters ages 6 to 13 whose mothers were in the labor force and who required some sort of care or supervision before and after school or on school holidays. A total of 26.1 million children under age 14 lived in homes where both parents or the lone parent was in the labor force.

How are these children being cared for? The following tabulation, which is based on data collected by the Bureau of the Census in the winter of 1984-85, shows a percentage distribution of children under age 15 in terms of the institution or person *primarily* responsible for their supervision while their mothers worked:⁶

	Percent
Total	100.0
In own home	17.8
In others' home	14.4
Day-care facility	9.1
School	52.2
Child cares for self	1.8
Parent	4.7

The survey also showed that there were more than a million children ages 5 to 14 who cared for themselves after school—the so-called "latch-key" children.⁷ These data simplify the actual complexity of today's child-care arrangements: parents working different shifts; transporting the children to and from the day-care providers; and coping with breakdowns in the arrangements or other emergencies. However, child-care arrangements are not

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Table 1. Provision of child-care benefits and work-schedule policies aiding child care by establishments with 10 or more employees, by establishment size and industry, summer 1987

Size and industry	Total establishments (in thousands)	Percent providing child-care benefits or services	Percent with work-schedule policies aiding child care	Have neither benefits nor work-schedule policies		
				Number (in thousands)	Percent of total	Percent considering benefits or policies
Total	1,202	11.1	61.2	442	36.8	2.4
Size						
10 to 49 employees	919	9.0	62.0	337	36.7	1.8
50 to 249 employees	236	15.3	58.1	90	38.1	3.6
250 employees or more	47	31.8	59.4	15	32.5	9.0
Industry						
Private, total	1,128	10.1	61.4	413	36.6	2.4
Goods-producing	272	6.3	51.3	126	46.4	2.0
Service-producing	856	11.3	64.6	288	33.5	2.6
Transportation and public utilities	59	11.8	54.2	25	42.9	2.5
Trade, total	427	7.6	67.1	136	31.6	1.9
Wholesale	124	8.5	55.4	55	43.4	2.3
Retail	303	7.3	71.8	81	26.8	1.6
Finance, insurance, and real estate	80	18.4	60.6	28	34.9	4.8
Services	290	14.7	64.3	98	33.9	3.0
Government	74	26.4	57.2	29	39.6	2.9
Industry by size						
Private:						
10 to 49 employees	879	8.3	62.2	321	36.5	1.8
50 to 249 employees	213	14.1	58.6	80	37.6	3.6
250 employees or more	36	31.6	58.5	12	33.1	9.9
Goods-producing:						
10 to 49 employees	196	3.5	53.9	88	45.1	1.1
50 to 249 employees	62	9.8	44.8	32	51.1	3.6
250 employees or more	14	29.9	44.5	6	44.8	7.1
Service-producing:						
10 to 49 employees	683	9.7	64.6	233	34.1	2.1
50 to 249 employees	151	15.8	64.3	48	32.0	3.6
250 employees or more	22	32.7	67.7	6	25.6	13.1
Government:						
10 to 49 employees	40	24.1	57.9	16	40.2	1.8
50 to 249 employees	23	27.2	53.7	10	43.0	3.9
250 employees or more	11	32.7	62.0	3	30.7	5.6

the concern solely of parents, children, and day-care providers; employers are also affected in terms of worker reliability and productivity.⁸

What employers reported

In the survey conducted in the summer of 1987, about 11 percent of the establishments with 10 employees or more reported that they provided at least some employees such direct benefits as employer-sponsored day care, financial assistance toward it, or information and referral services to guide employees to child-care providers in their communities (table 1). Typically, large establishments (250 employees or more) were far more likely than small ones to offer such child-care benefits to their employees. Private employers in the service sector and government agencies were much more likely than goods-producing establishments to offer child-care benefits to their employees.

About three-fifths of the establishments reported that at least some of their workers could take advantage of

indirect benefits in the form of work-schedule or leave policies that could aid them in fulfilling their family obligations including child care. Such policies—which include flexitime, flexible leave, and voluntary shifts to part-time work schedules—may or may not have been initiated with child care in mind.

Small establishments were just as likely as the large ones to provide such “liberal” work-schedule/leave policies, while private service sector establishments (which include day-care providers) were more likely than either goods-producing firms or government agencies to have them in place. Moreover, when both industry and size of establishment are taken into account, flexible work-schedule/leave policies were more prevalent among large private service sector establishments and government agencies than among large goods-producing establishments. One reason for this difference may be that in order to coordinate the production processes and maximize efficiency, large establishments in goods-producing in-

dustries are more likely to adhere to rigidly standardized work schedules.⁹

Work force composition—especially the proportion of women—is undoubtedly a major factor underlying the extent of child-care assistance (either benefits or work-schedule policies) by industry. In the summer of 1987, 53 percent of payroll employees in private service-producing establishments were women, as were 51 percent in government agencies. In contrast, just 28 percent of the workers in goods-producing establishments were women, including only 11 percent in mining and construction (combined).

Direct benefits

The direct child-care benefits that some employers provide fall into five basic categories: employer-sponsored day care; assistance with child-care costs; information and referral to community child-care resources; counseling services; and a variety of miscellaneous benefits. Employer-sponsored child care includes a variety of arrangements such as onsite day care or care at a nearby location and consortia (that is, several employers joining together to establish a day-care center for use by their employees). Also included are day-care providers that accept their own employees' children.

Likewise, employer assistance with child-care costs comes in many different forms. These include flexible spending accounts, contractual arrangements with day-care providers that allocate space for employees' children or give them discounts, or giving employees vouchers (or checks) to defray their expenses. The voucher method may be included as part of the regular benefits package or may be an option in a "cafeteria" or flexible compensation plan.

Child-care information and referral services provided by employers can range from something as simple as maintaining a list of child-care providers all the way up to staff assistance in locating and evaluating the providers and even matching the employees with the most appropriate provider. Counseling services include advice and information on parenting and parenting problems, while the "other" or miscellaneous category includes such disparate—and often informal—benefits as payment for extra child-care expenses incurred because of overtime or illness of the child to bringing the child to work (school bus drivers are an example of the latter).

As already noted, relatively few employers provide such direct benefits. The most frequently provided—10 percent of the establishments—are information, referral, and counseling services (table 2). Only 2 percent of establishments provided day-care facilities (either onsite or through a consortium); some of these employers turned out to be day-care businesses which made their facilities available to the children of their employees. An additional

3 percent of the establishments, while not providing day-care facilities, assisted with child-care expenses.

There are several reasons why employers seldom provide day care. One is, of course, cost. The employer has to be able to make a determination that a day-care center will increase productivity sufficiently—by, for example, reducing absenteeism, boosting morale, or improving recruitment and retention—to offset its cost. Another is that establishing a day-care center requires dealing with issues of legal liability as well as a thicket of State and local regulations governing such undertakings. Finally, a firm may not believe that it has a sufficient number of employees with day-care needs to justify the benefits at all.

Providing financial assistance to employees who are parents also presents problems. Employers as well as employees may not be very familiar with the methods of setting up flexible spending accounts as permitted by the Economic Recovery Tax Act of 1981.¹⁰ Another method for assisting employees with child-care expenses are so-called "cafeteria" style, flexible compensation plans under which employees are allowed to select from a "menu" of benefits those that they feel are most appropriate to their life-cycle stage. Such plans were authorized under Section 125 of the Internal Revenue Code in 1978. However, the Internal Revenue Service subsequently challenged some versions of this arrangement, and, perhaps because of this, or because many employers may still be unfamiliar with such plans, relatively few establishments aid their employees with their child-care expenses.¹¹

As might be expected, the type and frequency of child-care benefits varies by firm size. Relatively few establishments with less than 50 employees (10 to 49) offered any benefits: 2 percent sponsored day care, another 2 percent gave financial assistance, and 8 percent provided information, referral, or counseling services (or a combination of these). In contrast, 14 percent of those with at least 250 employees sponsored day care or provided financial assistance toward it, and 31 percent provided information, referral, or counseling services (or a combination).

Child-care support benefits appear to be almost unheard of in goods-producing establishments. Undoubtedly, this reflects the fact that relatively few women work in these industries. Among private service-producing establishments, 2 percent sponsored day care, and 4 percent gave some form of financial assistance, while about 10 percent provided information, referral, or counseling.

Among government agencies (Federal, State, and local), however, the proportion supporting some form of day care and information, referral, or counseling was much higher than was the case in private industry, largely because of legislative and executive initiatives. For instance, California has mandated its agencies to provide information and referral services to State employees, as well as the general public. Michigan has established a

Table 2. Characteristics of establishments with 10 or more employees providing child-care benefits or services, by type of benefit or service, summer 1987

Characteristic of establishment	Total establishments (in thousands)	Percent providing:				
		Employer-sponsored day care	Assistance with child-care expenses	Child-care information and referral services	Counseling services	Other child-care benefits
Total	1,202	2.1	3.1	5.1	5.1	1.0
Size						
10 to 49 employees	919	1.9	2.4	4.3	3.8	.7
50 to 249 employees	236	2.2	4.7	6.3	7.6	1.6
250 employees or more	47	5.2	8.9	14.0	17.1	2.9
Industry						
Private, total	1,128	1.6	3.1	4.3	4.2	.9
Goods-producing, total	272	.3	1.9	2.3	3.0	.6
Mining and construction	109	.3	1.5	2.0	.7	.5
Manufacturing, total	163	.3	2.2	2.5	4.6	.7
Durable goods	94	.2	2.4	2.3	4.9	.7
Nondurable goods	69	.4	1.9	2.7	4.2	.8
Service-producing, total	856	2.0	3.5	5.0	4.6	1.0
Transportation and public utilities	59	.1	4.1	3.5	6.1	1.2
Trade, total	427	.1	2.3	4.0	3.1	.4
Wholesale	124	(1)	3.1	4.1	3.6	.5
Retail	303	.1	2.0	3.9	2.9	.4
Finance, insurance, and real estate	80	.6	7.9	8.5	8.1	1.9
Services	290	5.6	4.0	5.9	5.6	1.5
Government	74	9.4	2.9	15.8	18.2	2.3
Industry by size						
Private:						
10 to 49 employees	879	1.5	2.4	3.6	3.1	.7
50 to 249 employees	213	1.8	4.9	5.5	6.4	1.5
250 employees or more	36	2.7	10.3	14.6	17.0	2.7
Goods-producing:						
10 to 49 employees	196	.2	1.3	.9	1.3	.5
50 to 249 employees	62	.8	2.4	4.2	5.1	.7
250 employees or more	14	.3	8.9	13.3	17.9	2.1
Service-producing:						
10 to 49 employees	683	1.9	2.7	4.4	3.7	.7
50 to 249 employees	151	2.2	5.9	6.0	7.1	1.8
250 employees or more	22	4.3	11.3	15.4	16.5	3.1
Transportation and public utilities:						
10 to 49 employees	45	.0	2.4	2.4	4.4	.9
50 to 249 employees	12	.4	7.9	4.8	8.8	1.0
250 employees or more	2	.3	16.4	17.2	23.2	7.8
Trade:						
10 to 49 employees	351	.0	2.2	3.9	2.6	.3
50 to 249 employees	69	.4	2.5	3.6	4.4	1.0
250 employees or more	7	.5	4.6	11.9	11.9	1.1
Finance, insurance, and real estate:						
10 to 49 employees	61	.5	6.1	7.2	5.8	1.9
50 to 249 employees	16	.8	12.1	10.3	14.3	1.5
250 employees or more	3	1.5	24.2	25.9	24.5	5.6
Services:						
10 to 49 employees	226	5.5	2.7	5.0	4.5	1.1
50 to 249 employees	54	5.3	7.9	8.0	7.9	3.1
250 employees or more	10	9.0	11.2	14.3	15.9	2.6
Government:						
10 to 49 employees	40	10.2	2.5	17.9	18.6	1.5
50 to 249 employees	23	6.1	2.8	14.1	17.7	2.9
250 employees or more	11	13.2	4.3	12.0	17.4	3.7

¹Less than 0.05 percent.

pilot day-care program to serve the children of State employees, while New York State, in conjunction with its State employee unions, has created 30 day-care centers and is planning on establishing 50 or more by the end of 1988.¹² Meanwhile, the General Services Administration

of the Federal Government has appointed an official with the specific task of creating more child-care facilities at Federal agencies.¹³

When both the number of employees and the type of industry are taken into account, some interesting patterns

in the availability of child-care benefits emerge. Among goods-producing industries, the proportion of establishments with day-care centers remains very low regardless of the number of employees, but the larger the firm the more likely it was to offer information, referral, and counseling services. Among service-producing establishments, the availability of all four major benefit categories also increases with size. It is notable, however, that in finance, insurance, and real estate, in which only 1.5 percent of establishments with 250 employees or more had day care, about 25 percent had at least one of the following: financial assistance, information and referral, and counseling benefits. Trade establishments, however, despite having a high proportion of female employees, were infrequent providers of benefits. Instead they offered a great deal of schedule flexibility. Service industry establishments with 250 employees or more had the highest proportion providing day-care services.

Indirect benefits

Work-schedule policies that can aid parents in meeting their child-care responsibilities are far more common than child-care support benefits. One obvious reason is that their perceived cost, if any, is less than that of direct benefits. Moreover, such policies do not involve the legal and technical complexities of establishing and maintaining day-care centers or financial assistance benefits.

Flexitime and flexible leave are the most common forms of work-schedule/leave policies cited by employers as being of possible aid to workers with child-care problems. About 43 percent of the establishments maintained flexitime policies and an equal proportion had flexible leave arrangements.

Under flexitime, employees can vary the beginning and end times of their work day; under one version, they can work extra hours on some days so they can work fewer hours on others. Although there is surprisingly little variation in the frequency of this kind of work schedule by size of establishment, it is obviously not appropriate for all industries. Flexitime in private industry is most likely to be found in retail trade establishments and least likely to be found in mining, construction, and manufacturing, in which the close coordination of tasks and workers makes such scheduling difficult.

The retail trade industry is unique in relation to other industry categories. As shown in table 1, 72 percent of retail establishments offer their employees some sort of flexible work-schedule/leave policy benefit. This is not surprising, given the seasonal peaks and troughs in demand for specific types of goods, for example, Christmas, Easter, and summer. Peaks and troughs even occur on a weekly or daily basis. Hence, it is critical for the industry to maintain highly flexible staffing patterns.¹⁴ To attract a flexible work force, retail establishments must be pre-

pared to offer a wide variety of work schedules. This, in turn, represents an ideal situation for persons with off-worksite responsibilities—such as mothers or students—to find employment.

Examples of flexible leave are personal leave, or sick or annual leave flexibly administered—that is, not restricted to a specific time of the year or to periods of illness (some employers allow workers to use sick leave to take care of an ill child) or vacations. Like flexitime policies, the availability of flexible leave varies little by size of establishment but does differ by industry, ranging from 37 percent in manufacturing to 47 percent in retail trade.

About 35 percent of all establishments allowed full-time employees to shift temporarily to part-time jobs on a voluntary basis with corresponding cuts in pay and benefits. The employees might work fewer hours at their usual job or be transferred to a part-time position. This practice is more prevalent among small than large establishments. It was also much more prevalent among the retail trade (50 percent) and services industries (39 percent).

Job sharing, which is the division of one full-time job into two part-time ones held by different people, was offered by about 16 percent of establishments. There was very little variation in the extent of this policy by establishment size; it was more prevalent in government agencies than in industry.

THE INFORMATION COLLECTED in the Survey of Employer-Provided Child Care Benefits shows that employers as a group have yet to respond in a significant way to the child-care needs of their workers. About 90 percent of establishments with 10 or more employees do not provide direct benefits such as day care or financial assistance. While it is true that 60 percent allow employees to alter their work schedules in ways that might help them with child care, it must be kept in mind that these policies serve a variety of purposes and may not have been formulated with child care in mind. Thus, they do not necessarily indicate that employers are focused specifically on the child-care needs of their workers.

Great care must be taken in generalizing from these data about employers' motivations and attitudes regarding child care. Many employers, especially those with few employees, may deal with child-care problems of their workers on an *ad hoc* basis as they arise, rather than offering specific child-care benefits or establishing work-schedule policies with child care in mind. Also, although child-care benefits are sometimes used as a tool for recruitment or retention purposes, many firms may have no problems of this type.¹⁵

Because the 1987 survey was a one-time effort, it is difficult to extrapolate future trends from these data. It found that only 2 percent of the 442,000 establishments that reported no child-care benefits or flexible work-schedule policies said they were "considering" doing

Table 3. Characteristics of establishments with 10 or more employees with work-schedule or leave policies aiding child care, by type of policy, summer 1987

Characteristic of establishment	Total establishments (in thousands)	Percent providing:					
		Flexitime	Voluntary part time	Job sharing	Work at home	Flexible leave	Other
Total	1,202	43.2	34.8	15.5	8.3	42.9	2.1
Size							
10 to 49 employees	919	45.1	36.0	16.0	9.2	43.8	1.9
50 to 249 employees	236	37.7	32.0	13.7	5.6	39.9	2.9
250 employees or more	47	34.9	25.1	15.7	3.8	40.2	3.1
Industry							
Private, total	1,128	43.6	35.3	15.0	8.5	42.9	1.8
Goods-producing, total	272	31.3	22.4	9.0	8.2	37.3	1.3
Mining and construction	109	33.0	20.7	8.2	9.9	37.5	1.2
Manufacturing, total	163	30.1	23.6	9.4	7.0	37.2	1.3
Durable goods	94	27.5	23.2	8.8	4.8	35.3	1.6
Nondurable goods	69	33.8	24.1	10.3	9.9	39.8	0.9
Service-producing, total	856	47.5	39.4	16.9	8.6	44.6	1.9
Transportation and public utilities	59	34.4	24.6	9.6	6.7	40.4	1.2
Trade, total	427	51.2	44.1	18.1	5.6	45.8	1.5
Wholesale	124	32.3	28.6	11.7	9.5	42.5	0.6
Retail	303	58.9	50.4	20.7	4.0	47.2	1.9
Finance, insurance, and real estate	80	38.9	26.1	14.9	13.7	41.4	1.1
Services	290	47.2	39.2	17.3	12.2	44.6	3.0
Government	74	37.5	26.7	23.5	4.0	43.7	7.1
Industry by size							
Private:							
10 to 49 employees	879	45.3	36.3	15.6	9.4	43.7	1.6
50 to 249 employees	213	38.5	32.9	12.7	5.6	39.9	2.3
250 employees or more	36	36.1	25.0	13.9	2.8	38.9	2.8
Goods-producing:							
10 to 49 employees	196	34.6	24.5	10.5	9.4	39.5	1.1
50 to 249 employees	62	23.5	17.9	4.6	5.3	31.9	1.6
250 employees or more	14	19.4	14.0	6.7	3.1	32.0	1.9
Service-producing:							
10 to 49 employees	683	48.3	39.6	17.1	9.4	44.9	1.7
50 to 249 employees	151	44.4	39.0	16.1	5.9	43.1	2.9
250 employees or more	22	44.7	34.1	17.9	4.6	44.5	3.7
Transportation and public utilities:							
10 to 49 employees	45	34.6	25.3	9.8	7.0	40.5	.8
50 to 249 employees	12	32.4	21.9	8.5	6.0	39.1	2.0
250 employees or more	2	41.4	24.6	10.9	4.2	45.0	4.7
Trade:							
10 to 49 employees	351	51.4	44.5	18.2	6.0	46.6	1.4
50 to 249 employees	69	50.4	42.1	17.8	3.7	41.1	1.9
250 employees or more	7	46.5	41.9	15.6	3.9	51.4	3.5
Finance, insurance, and real estate:							
10 to 49 employees	61	38.5	26.0	16.5	15.1	41.4	.8
50 to 249 employees	16	39.6	26.0	8.4	9.3	41.1	1.8
250 employees or more	3	44.6	26.8	16.2	7.1	44.5	3.7
Services:							
10 to 49 employees	226	48.8	38.6	17.0	13.7	44.2	2.5
50 to 249 employees	54	40.8	42.8	17.9	7.7	47.2	4.7
250 employees or more	10	44.3	32.9	21.9	4.4	39.3	3.6
Government:							
10 to 49 employees	40	41.1	29.8	24.4	4.2	46.2	8.4
50 to 249 employees	23	32.1	23.5	22.4	4.1	39.9	6.8
250 employees or more	11	35.5	21.7	22.6	3.4	42.2	3.3

something in the future. This appears to contradict more optimistic reports and comments by experts in the field of child care which indicate that employers are generally becoming more supportive of the child-care needs of their workers.¹⁶ However, these reports are more often than not based on anecdotal evidence rather than surveys with consistent methodologies and definitions, and so it is very

difficult to derive accurate estimates of the trends in employer policies regarding child care.

—FOOTNOTES—

¹See U.S. Department of Labor, Report of the Secretary's Task Force, *Child Care: A Workforce Issue*.

²See, for example, Beth E. Hoffman, "Employee surveys spark decision to establish child care," *Quirk's Marketing Research*, August-September, 1987, p. 34; or "California makes business a partner in daycare," *Business Week*, June 8, 1987, p. 100.

³For more information on the survey methodology, see Technical Note in "BLS Reports on Employer Child-Care Practices," *USDL News*, 88-7, Jan. 15, 1988.

⁴According to the *BLS Handbook of Methods*, an establishment is defined as an economic unit which produces goods or services, such as a factory, mine, or store. It is generally at a single location and engaged predominantly in one type of economic activity. Where a single location encompasses two or more distinct activities, these are treated as separate establishments, provided that separate payroll records are available and certain other criteria are met. See Bulletin 2285 (Bureau of Labor Statistics, 1988), p. 13.

⁵For further information on children and mothers, see "Over half of mothers with children one year old or under in labor force in March 1987," *USDL News*, 87-345, Aug. 12, 1987.

⁶U.S. Bureau of the Census, Current Population Reports, Household Economic Studies, Series P-70, No. 9, *Who's Minding the Children? Child Care Arrangements: Winter 1984-85* (U.S. Government Printing Office, Washington, 1987), p. 3, table B.

⁷*Ibid.*, p. 10, table F.

⁸See M. Purnell and P. Proctor, *Industry Sponsored Child Care: A Question of Productivity*, 1977 (Texas, Industrial Commission, 1977); or P. Voydevoff, *Implications of Work-Family Relationships for Productiv-*

ity (White Plains, NY, Work in America Institute), *Studies in Productivity*, Vol. 13 (New York, Pergamon Press, 1982).

⁹See Sheila B. Kamerman and Alfred J. Kahn, *The Responsive Workplace: Employers and a Changing Labor Force* (New York, Columbia University Press, 1987), p. 236.

¹⁰This law created a new Section 129 of the Internal Revenue Code that provides that employees may exclude from their gross income amounts paid by employers under qualified dependent care assistance programs. Employers, in turn, may deduct as an employee fringe benefit all amounts paid into the plan. See *Employees and Child Care: Development of a New Employee Benefit*, BNA Special Report (Washington, The Bureau of National Affairs, Inc., 1984), p. 13. In effect, the Federal Government is providing the benefit, because employees' Federal income tax obligations are reduced and these savings partially offset child-care expenses.

¹¹*Ibid.*, pp. 14-16.

¹²Statement of Shirley Dennis, director, Women's Bureau, U.S. Department of Labor, before the Subcommittee on Government Operations, U.S. House of Representatives, September 9, 1987.

¹³For an overview of Federal efforts to establish day-care centers for Federal employees, see Lesley Barnes, "Agencies Open Doors to On-Site Sitting," *Government Executive*, vol. 20, No. 3, p. 50.

¹⁴See Steven E. Haugen, "The employment expansion in retail trade, 1973-85," *Monthly Labor Review*, August 1986, p. 13.

¹⁵*Employees and Child Care*, pp. 6-7.

¹⁶*Ibid.*, p. 5.



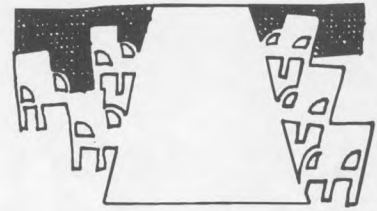
Major Agreements Expiring Next Month

This list of selected collective bargaining agreements expiring in October is based on information collected by the Bureau's Office of Compensation and Working Conditions. The list includes agreements covering 1,000 workers or more. Private industry is arranged in order of Standard Industrial Classification.

Industry or activity	Employer and location	Labor organization ¹	Number of workers
Private			
Construction	Associated General Contractors, New Mexico Building Branch (New Mexico)	Laborers	2,000
	Southeastern States Area Agreement (Interstate)	Boilermakers	6,000
Food products	Keebler Co. (Interstate)	Bakery, Confectionery and Tobacco Workers	2,800
Apparel	Londontown Manufacturing Co. (Interstate)	Clothing and Textile Workers	1,800
	Associated Garment Industry of St. Louis, underwear branch (Interstate)	Ladies' Garment Workers	3,000
Furniture	Simmons Co. (Interstate)	Upholsterers	1,450
Rubber	General Tire and Rubber Co. (Mayfield, KY)	Rubber Workers	1,400
Stone, clay, and glass products ...	Libbey-Owens-Ford Co. (Interstate)	Aluminum, Brick and Glass Workers	2,700
Machinery	Lufkin Industries Inc. (Lufkin, TX)	Boilermakers; Machinists; Molders ..	1,000
	Bath Iron Works (Bath, ME)	Marine and Shipbuilding Workers ...	4,500
Transportation equipment	Norfolk Shipbuilding and Drydock Corp. (Norfolk, VA)	Boilermakers	1,900
	TRW Inc. (Cleveland, OH)	Aircraft Workers Alliance (Ind.)	2,900
	Florida Power and Light Co. (Miami, FL)	Electrical Workers (IBEW)	5,000
Utilities	Consolidated Gas Supply Corp. (West Virginia)	Service Employees	1,650
	Duke Power Co. (Charlotte, NC)	Electrical Workers (IBEW)	2,050
	Wisconsin Public Service (Wisconsin)	Operating Engineers	1,100
	Bradlees Mercantile (New Jersey)	Food and Commercial Workers	2,500
Retail trade	Food Employers Council Inc. (Northern California)	Food and Commercial Workers	3,800
	Chain and independent food stores (New Mexico)	Food and Commercial Workers	4,000
	Super Fresh Food Markets (Interstate)	Food and Commercial Workers	1,150
	East Bay Restaurant Association (San Francisco, CA)	Hotel Employees and Restaurant Employees	2,000
Restaurants	New York City drug stores (New York)	Retail, Wholesale and Department Store	4,500
Services	Walt Disney World/Epcot Center (Florida)	Various	8,000
Amusements	Ohio: University of Cincinnati, classified employees	State, County and Municipal Employees	1,350
Education			

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

Developments In Industrial Relations



GE, coalition settle despite union split

The General Electric Co. (GE) and a coalition of unions settled peacefully on new 3-year contracts, but the terms drew strong criticism from some union officials before they were approved by rank-and-file members. This was particularly true within the Electronic Workers, whose negotiating committee and a panel of local union officials recommended that rank-and-file members reject the accord, although union president William H. Bywater had backed it. The terms were also supported by the steering committee of the Coordinated Bargaining Committee, the umbrella organization of the 12 unions that bargain with GE. Within the Electronic Workers, the union representing the largest number of employees in the bargaining with GE, the final tally was 33,378.5 in favor of the agreement, and 6,785.5 against.

The dissatisfaction with the terms apparently focused on the size of the wage gains and on the adequacy of provisions for increasing employee job security. Ultimately, it appeared that members of the various unions approved the terms simply because there was no widespread enthusiasm to initiate a national strike, which would have been the first at GE since 1969. To some extent, strikes are difficult to mount against GE because of the large number of unions involved.

The settlement, which came on June 26, the expiration date of the 1985 agreements, provides for an immediate wage increase of 2.5 percent, followed by 1.5-percent increases in June of 1989 and 1990. The workers also gained two lump-sum payments: \$165 payable immediately and \$900 payable in June 1989. The provision for automatic semiannual cost-of-living pay reviews was continued at the rate of 1 cent an hour for each 0.15-percent increase in the BLS Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W). According to the company, the guaranteed wage increases and cost-of-living adjustments—assuming a 4.5-percent increase in the CPI-W—will raise average pay to \$13.40 an hour.

Under the 1985 contracts, employees received two 3-percent general wage increases plus special adjustments to those in upper pay grades; one lump-sum payment equal to 3 percent of the employee's hourly pay rate mul-

tiplied by 2,080 hours; and cost-of-living adjustments totaling 43 cents an hour.

The accords also provide for:

- A special early retirement benefit for 25-year employees affected by permanent job loss. This benefit consists of the employee's normal lifetime pension and two supplements (\$9 a month for each year of credited service and a flat \$200 a month) that continue until age 62.
- A \$7,500 retirement payment to employees terminated because of the discontinuance of a product line, work transfer, or automation. (Previously, the payment was \$5,000 and applied only when jobs were lost because of transfers and automation).
- Expansion of the preferential hiring provision to permit laid-off workers to apply for jobs for up to 3 years at all of GE's domestic plants (previously, they could apply for jobs for up to 1 year within 250 miles of their former job). Affected employees are now eligible for company payment of moving expenses up to \$1,500, and for extension of the wage-rate guarantee to 52 weeks (previously 39 weeks).
- Retraining assistance of \$5,000 over 3 years for laid-off workers, up from \$3,000 over 2 years.

Changed pension provisions include increases in the range of minimum rates to \$17–\$23.50 a month (from \$16–\$22), varying with the employee's hourly pay rate, for each year of credited service effective July 1, 1988. The rate will rise to \$18–\$25 on January 1, 1990. Improvements were made in the alternate "formula" pension which applies if it results in a higher benefit for a retiree. In another pension change, the employees' contribution was reduced to 3 percent of earnings in excess of \$25,000 a year, instead of \$14,000.

Other terms included \$750,000 lifetime major medical coverage per person (formerly \$500,000); \$275 a week sickness and accident benefits (formerly \$250); and \$40,000 minimum life insurance coverage (formerly \$35,000).

Overall, the settlements covered nearly 70,000 employees, including 40,000 represented by the Electronic Workers and 6,300 represented by the United Electrical Workers, the two unions that negotiate with GE on a national basis. Following past practice, similar terms were negotiated by the other unions, which bargain with the company on a plant-by-plant basis.

"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.

A change beneficial to GE is a new requirement that some employees contribute toward the cost of medical insurance. The contribution schedule ranges from \$1 a week for workers with annual straight-time earnings of \$25,000–\$37,499 to \$5 a week for those earning \$100,000 or more. Other changes include lengthening the pay progression schedule for new employees and reducing the 10-percent shift differential to 60 cents an hour during the first 2½ years on the job.

Aluminum contract reflects profit gains

Improved sales and profits were reflected in developments in the aluminum industry. At Kaiser Aluminum and Chemical Corp., a settlement with the United Steelworkers provided for economic gains for employees, in contrast with the 3-year agreement negotiated in 1985, which cut compensation by an average of \$4.50 an hour. At that time, Kaiser said the reduction was necessary because of a worldwide oversupply of aluminum and high energy costs.

Elsewhere in the industry, the Aluminum Company of America and Reynolds Metals Co. began negotiations with the United Steelworkers and the Aluminum, Brick, and Glass Workers almost a year in advance of the scheduled June 30, 1989, expiration date of their current agreements. The unions, each of which represents some employees at both companies, asked for the early negotiations in an effort to take advantage of the improved conditions in the industry by recouping the \$1 an hour compensation cut they had accepted in 1986 and gaining further increases in new contracts to become effective immediately. This would also put bargaining back on the same 3-year cycle as at Kaiser, which broke away in 1985 because its financial difficulties were more severe than those of the other companies.

The 1988 accord at Kaiser features a new profit-sharing plan tied to the Midwest price of aluminum according to a formula similar to one used by the Bonneville Power Administration in determining variable charges for power. According to the company, aluminum prices at the time of settlement were high enough to assure maximum quarterly distributions of \$2 per compensated hour.

Other terms include a 50-cent-an-hour pay increase in lieu of the \$5 a share dividend employees were scheduled to receive under a stock distribution plan adopted in 1985 and now terminated; an immediate \$1,000 contract signing bonus; re-establishment of a provision for automatic quarterly cost-of-living pay adjustments, beginning in the second year; and restoration of three paid holidays eliminated in 1985.

The contract covers 5,400 employees at plants in Gramercy, Chalmette, and Marrero, LA; Mead, Trentwood, and Tacoma, WA; Ravenswood, WV; Newark, Toledo, and Belpre, OH; and Purvis, MS.

West Coast lumber workers strike

Bargaining in the West Coast lumber industry centered on employee demands for restoration of cuts in compensation they had accepted in 1986, when the industry was in a recession. The reductions generally ranged from \$1.25 to \$1.65 an hour. Despite the fact that they were generally operating at a profit in 1988, the employers argued for only partial restoration of the cut, contending that they were facing increasing competition from producers in Canada and the Southern States. Usually, their contract proposals called for two lump-sum payments and one wage increase over a 3-year period. This was rejected by the labor organizations involved, the International Woodworkers of America and the Western Conference of Industrial Workers, a unit of the Carpenters union. More than 8,000 of the 38,000 sawmill and plywood employees in the region walked out after their contracts expired on June 1. The stoppage initially involved Willamette Industries, DAW Forest Products Co., and Champion International Corp. but it was later extended to several other companies.

The unions did record a peaceful settlement, with Bohemia Inc., which they viewed as a pattern-setter but other companies refused to accept the proposal, contending that it was too costly. The 4-year Bohemia contract provides for wage increases of 5 percent in June of 1988 and 4 percent in June of 1989, 1990, and 1991. It also provides for restoration of Christmas Eve and New Year's Eve paid holidays that had been terminated in the 1986 settlement, and for improvements in vacation, pension, and health and welfare provisions. The accord covers about 800 workers at six operations in Oregon.

Briggs & Stratton contract calls for raise

Briggs & Stratton Corp., the world's largest manufacturer of small gasoline engines, and Local 232 of the Allied Industrial Workers negotiated a 3-year contract that will become effective when the existing contract expires August 1, 1989. Union officials contended that they were pressured into the unscheduled bargaining by company threats to move some jobs from the Milwaukee (WI) area. Gerald Zitzer, the company's director of employee relations, denied such threats were made, saying, "We just talked about our financial condition." Late in 1987, the company did move 200 jobs to a new plant in Juarez, Mexico, after the union refused to reopen the current agreement.

The new contract for the 8,200 employees provides for one wage increase of 2 percent, effective August 1, 1989. Other provisions include continuation of a profit-sharing plan and improvements in pension benefits and recall and transfer rights.

Strikers ruled not eligible for food stamps

Employees' collective bargaining strength was diminished somewhat by a Supreme Court ruling that households are ineligible for food stamps when any member is on strike. In the ruling, the Court upheld the constitutionality of a 1981 amendment to the Food Stamp Act that prohibits strikers from receiving the aid.

Writing for the majority, Justice Byron R. White said that the Congress had acted to avoid favoritism to one side or another in a labor dispute, and the Government's refusal to subsidize a strike is not an infringement of that right. Justice White acknowledged that denial of food stamps to strikers pressures them to "abandon their union" by returning to work "but the strikers' right of association does not require the Government to furnish funds to maximize the exercise of that right."

In the minority opinion, Justice Thurgood Marshall, joined by Justices William J. Brennan, Jr., and Harry A. Blackmun, argued that the amendment improperly discriminates against strikers by permitting workers idled by a strike to receive food stamps, as long as they themselves are not on strike. "Only strikers, though they may be as 'willing to work' in every salient respect, must give up their eligibility for food stamps if they refuse to cross a picket line."

The majority finding reversed a lower court ruling in the case, which was initiated by the Auto Workers and the United Mine Workers unions.

Fired noncompetitive employees cannot sue

Federal employees who are not in the competitive civil service system cannot sue the Government if they are fired or suspended, says the Supreme Court. Writing for the five-member majority, Justice Antonin Scalia said that the Civil Service Reform Act of 1978 specifies that only employees in the competitive service are permitted to carry appeals of adverse personnel actions outside their agency. This excludes about 500,000 employees selected on a noncompetitive basis, except for those who are military veterans.

In dissent, Justice John Paul Stevens, writing for Justices William J. Brennan, Jr., and Thurgood Marshall, argued that employees selected on a noncompetitive basis could appeal personnel actions beyond their agency prior to the 1978 legislation, which did not change their rights.

Pregnancy leave policy found biased

A Federal District Court ruled that pregnancy leave policies of the former Western Electric Division of American Telephone and Telegraph Company constituted gender-based bias. As a result, up to 30,000 present and former female employees of what is now AT&T Technolo-

gies will share in backpay and be credited with additional seniority under a plan to be worked out by individual plaintiffs, the company, and the Equal Employment Opportunity Commission, subject to court approval.

In the case, which began in 1978, the plaintiffs charged that Western Electric's policies denied pregnant workers the same disability leave accorded workers with other medical disabilities. During the 1965-69 period, pregnant employees were required to begin maternity leave in the sixth month of pregnancy, regardless of whether they were capable of continuing to work. During the following 2 years, pregnant employees were permitted to continue working until the seventh month, but they could continue to exercise seniority rights only during the first 30 days of leave. As a result, they were not assured of a return to work when their pregnancy disability ended. In contrast, other disabled employees remained on the active job list for up to a year, were automatically entitled to reinstatement unless a layoff occurred during their absence, and accrued seniority during the entire absence.

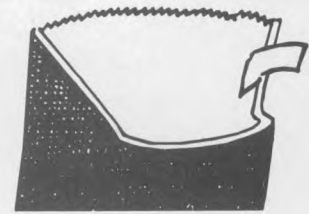
The pregnancy leave policy, which Western Electric claimed it terminated in 1971, severely limited the employment opportunities of women, in violation of the Civil Rights Act of 1964, according to the court. The company argued that the case should be dismissed because the statute of limitations had expired, but the court held that the case was valid because Western Electric had continued to violate a 1982 court decision that employees on maternity leave had the same return-to-work rights as employees on other types of disability leave.

Women win case against State Farm

State Farm Insurance Co. settled charges by a group of female plaintiffs that the company had discriminated against them in recruiting and hiring sales agents in California. The settlement came about 3 years after the Federal District Court ruled against the company.

The 1988 settlement covered 1,113 women who applied for sales jobs with the company from July 1974 to December 1987. Under the settlement, State Farm, for the next 10 years, will reserve 50 percent of new sales agent jobs in California for women. This is the same quota the company has been using in California during the last 2 years. The settlement also allocates \$1.3 million to be divided equally among the three original plaintiffs, and permits other plaintiffs to seek damages to be determined later. The plaintiffs' attorney claimed that the total damages could be the highest in the history of the Civil Rights Act of 1964, but this was termed "highly speculative" by the company's attorney.

Women held two of State Farm's 1,454 sales agent jobs in California in 1974, and 65 of 1,847 jobs in 1981. □



Book Reviews

Breaking new ground

Anti-protection: Changing Forces in United States Trade Politics. By I. M. Destler and John S. Odell, assisted by Kimberly Ann Elliott. Washington, Institute for International Economics, 1987. \$10, paper.

American proponents of open international trade have felt much put upon in the 1980's. The simultaneous appearance of widespread unemployment and massive trade deficits in the United States have created growing sentiment for protection. While the steel and auto industries have been perhaps the most successful in obtaining help, industries as widespread as textiles, motorcycles, and microchips have also sought intervention. Internationalists, a party to which I. M. Destler and John Odell certainly belong, fear that these few can jeopardize the many's gain from trade, because a well-defined special interest in protection creates more incentive to political action than the diffuse interests of consumers. As an antidote, *Anti-protection* seeks to identify interest groups that may be injured by sanctions against foreign trade and mobilize them for political action.

The technique is simple: mobilize by example. The book is a catalog of efforts by interest groups to influence the legislative and executive branches to deny import relief in 14 specific cases. Enough successful coalitions are identified to suggest that political action can prevent or dilute specific acts of protectionism that may harm a particular group's interests.

While I believe that such political mobilization is Destler and Odell's true goal, they have presented it in the context of a scholarly monograph. As they suggest, it is perhaps the first piece of serious political science addressing antiprotection activity, and it is complete with quantification, nonparametric statistical analysis, and even a bit of econometrics. But, it is in exactly these areas that their efforts fall short. The quantifications are exceedingly crude; scales of antiprotection activity are created using a totally arbitrary and subjective weighting scheme. Why, for instance, should four congressional hearings be worth six points when one such appearance is worth four? The statistical analysis purporting to establish a causal link between political activity and policy outcomes is based on a sample of a mere 14 cases and does not report levels of significance. The econometric work on the determinants of

antiprotection activity is a slapdash application of a sophisticated technique. The findings, as the authors tacitly admit, are quite likely the result of misspecified models. In one case, for example, the model "explained" just over 16 percent of the observed variation in political activity of 95 importers and found that trade dependence was an insignificant influence on their behavior.

Their substantive findings, on the other hand, are interesting enough to be of value without statistical technicality. These findings were: (1) Those who participate most in antiprotection politics are not consumers but the special interests that benefit most from the specific trade that would be inhibited. (2) A sharp increase in political activity opposing product-specific protection occurred over the decade ended in 1986. (3) The extent of a group's antiprotection activity is conditioned by its dependence on the specific item to be restricted and the probability the protection will be granted if not opposed. (4) Anti-protection activity matters.

I am surprised that Destler and Odell thought it useful or necessary to bring to bear the full statistical armory of the social scientist on these issues. If they intended to give their findings extra credibility, they are not convincing for the reasons outlined earlier. If their aim was mobilization, they might have simply expanded on selected cases with an eye toward identifying specific political techniques useful to antiprotection coalitions. As it stands, they do neither well. Indeed, the quantitative aspects of the paper may very easily turn away the very audience they sought to mobilize.

Criticism is part of Destler and Odell's burden for being out in front of this issue, and it would be unfair of me not to make some specific suggestions for improvement. First, several classes of cases the authors excluded from their analysis might be included: rejected escape clause petitions at the International Trade Commission, administratively decided trade cases from the Commerce Department, and, especially, legislative initiatives that die in congressional committee. These are, at their heart, political proceedings, and their inclusion would bring the number of cases in the statistical analysis closer to an acceptable level. Second, the measures of political activity might include participation in political action committees and campaign financing. Data are available at the Federal Election Commission and are in dollars, a convenient scaling device.

Third, when, as the authors' frankly admit, "received theory on these phenomena is quite weak," effort should be directed toward improving the theory before, or even rather than, conducting unconvincing empirical tests.

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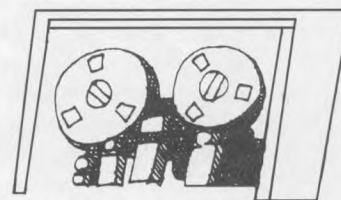
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Productivity and costs:							
Nonfinancial corporations	September 1	2nd quarter	2; 42-44
Nonfarm business and manufacturing .....	.....	.....	.....	.....	November 2	3rd quarter	2; 42-44
Employment situation	September 2	August	October 7	September	November 4	October	1; 4-21
Producer Price Index	September 9	August	October 14	September	November 10	October	2; 33-35
Consumer Price Index	September 21	August	October 21	September	November 22	October	2; 30-32
Real earnings	September 21	August	October 21	September	November 22	October	14-17
Employment Cost Index .....	.....	.....	October 25	3rd quarter	.....	.....	1-3; 22-24
Major Collective Bargaining Settlements .....	.....	.....	October 26	1st 9 months	.....	.....	3; 25-28
U.S. Import and Export Price Indexes ...	.....	.....	October 27	3rd quarter	.....	.....	36-41
Occupational injuries and illnesses .....	.....	.....	.....	.....	November 15	1987	48

NOTES ON CURRENT LABOR STATISTICS

This section of the *Review* presents the principal statistical series collected and calculated by the Bureau of Labor Statistics: series on labor force, employment, unemployment, collective bargaining settlements, consumer, producer, and international prices, productivity, international comparisons, and injury and illness statistics. In the notes that follow, the data in each group of tables are briefly described, key definitions are given, notes on the data are set forth, and sources of additional information are cited.

General notes

The following notes apply to several tables in this section:

Seasonal adjustment. Certain monthly and quarterly data are adjusted to eliminate the effect on the data of such factors as climatic conditions, industry production schedules, opening and closing of schools, holiday buying periods, and vacation practices, which might prevent short-term evaluation of the statistical series. Tables containing data that have been adjusted are identified as "seasonally adjusted." (All other data are not 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 data appear in tables 1-3, 4-10, 13, 14, 17, and 18.) Beginning in January 1980, the BLS introduced two major modifications in the seasonal adjustment methodology for labor force data. First, the data are seasonally adjusted with a procedure called X-11 ARIMA, which was developed at Statistics Canada as an extension of the standard X-11 method previously used by BLS. 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 calculated for use during the first 6 months of the year, rather than for the entire year, and then are calculated at midyear for the July-December period. However, revisions of historical data continue to be made only at the end of each calendar year.

Seasonally adjusted labor force data in tables 1 and 4-10 were revised in the February 1988 issue of the *Review*, to reflect experience through 1987.

Annual revisions of the seasonally adjusted payroll data shown in tables 13, 14, and 18 were made in the July 1988 *Review* using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in table 42 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—such as the Hourly Earnings Index in table 17—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 1977 = 100, the hourly rate expressed in 1977 dollars is \$2 ($\$3/150 \times 100 = \2). The \$2 (or any other resulting values) are described as "real," "constant," or "1977" dollars.

Additional Information

Data that supplement the tables in this section are published by the Bureau in a variety of sources. News releases provide the latest statistical information published by the Bureau; the major recurring releases are published according to the schedule preceding these general notes. More information about labor force, employment, and unemployment data and the household and establishment surveys underlying the data are available in *Employment and Earnings*, a monthly publication of the Bureau. More data from the household survey are published in the data books—*Revised Seasonally Adjusted Labor Force Statistics*, Bulletin 2306, and *Labor Force Statistics Derived From the Current Population Survey*, Bulletin 2307. More data from the establishment survey appear in two data books—*Employment, Hours, and Earnings, United States*, and *Employment, Hours, and Earnings, States and Areas*, and the supplements to these data books. More detailed information on employee compensation and collective bargaining settlements is published in the monthly periodical, *Current Wage Developments*. More detailed data on consumer and producer prices are published in the monthly periodicals, *The CPI Detailed Report*, and *Producer Price Indexes*. Detailed data on all of the series in this section are provided in the *Handbook of Labor Statistics*, which is published biennially by the Bureau. BLS bulletins are issued covering productivity, injury and illness, and other data in this section. Finally, the *Monthly Labor Review* carries analytical articles on annual and longer term developments in labor force, employment, and unemployment; employee compensation and collective bargaining; prices; productivity; international comparisons; and injury and illness data.

Symbols

- p = preliminary. To increase 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.
- n.e.s. = not elsewhere specified.

COMPARATIVE INDICATORS

(Tables 1-3)

Comparative indicators tables provide an overview and comparison of major BLS statistical series. Consequently, although many of the included series are available monthly, all measures in these comparative tables are presented quarterly and annually.

Labor market indicators include employment measures from two major surveys and information on rates of change in compensation provided by the Employment Cost Index (ECI) program. The labor force participation rate, the employment-to-population ratio, and

unemployment rates for major demographic groups based on the Current Population ("household") Survey are presented, while measures of employment and average weekly hours by major industry sector are given using nonagricultural payroll data. The Employment Cost Index (compensation), by major sector and by bargaining status, is chosen from a variety of BLS compensation and wage measures because it provides a comprehensive measure of employer costs for hiring labor, not just outlays for wages, and it is not affected by employment shifts among occupations and industries.

Data on **changes in compensation, prices, and productivity** are presented in table 2. Measures of rates of change of compensation and wages from the Employment Cost Index program are provided for all civilian nonfarm workers (excluding Federal and household workers) and for all private nonfarm workers. Measures of changes in: consumer prices for all urban consumers; producer prices by stage of processing; and the overall export and import price indexes are given. Measures of productivity (output per hour of all persons) are provided for major sectors.

Alternative measures of wage and compensation rates of change, which reflect the overall trend in labor costs, are summarized in table 3. Differences in concepts and scope, related to the specific purposes of the

series, contribute to the variation in changes among the individual measures.

Notes on the data

Definitions of each series and notes on the data are contained in later sections of these notes describing each set of data. For detailed descriptions of each data series, see *BLS Handbook of Methods*, Bulletin 2285 (Bureau of Labor Statistics, 1988), as well as the additional bulletins, articles, and other publications noted in the separate sections of the *Review's* "Current Labor Statistics Notes." Users may also wish to consult *Major Programs, Bureau of Labor Statistics*, Report 718 (Bureau of Labor Statistics, 1985).

EMPLOYMENT AND UNEMPLOYMENT DATA

(Tables 1; 4-21)

Household survey data

Description of the series

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 55,800 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 **civilian employment rate** 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. 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 4-10 are seasonally adjusted, based on the seasonal experience through December 1987.

Additional sources of information

For detailed explanations of the data, see *BLS Handbook of Methods*, Bulletin 2285 (Bureau of Labor Statistics, 1988). Historical unadjusted data from 1948 to 1987 are available in *Labor Force Statistics Derived from the Current Population Survey*, Bulletin 2307 (Bureau of Labor Statistics, 1988). Historical seasonally adjusted data appear in *Labor Force Statistics Derived from the Current Population Survey: A Data-book*, Vol. II, Bulletin 2096 (Bureau of Labor Statistics, 1982), and *Revised Seasonally Adjusted Labor Force Statistics, 1978-87*, Bulletin 2306 (Bureau of Labor Statistics, 1988).

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.

Establishment survey data

Description of the series

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 more than 300,000 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

An **establishment** is an economic unit which produces goods or services (such as a factory or store) at a single location and is engaged in one type of economic activity.

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 working supervisors and 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 the following industries: transportation and public utilities; wholesale and retail trade; finance, insurance, and real estate; and services. 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. Publication of the Hourly Earnings Index series shown in table 17 will be discontinued with the initial publication of December 1988 data in the February 1989 issue of the *Review*.

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 average weekly hours which was in excess of regular hours and for which overtime premiums were paid.

The **Diffusion Index**, introduced in the May 1983 *Review*, represents the percent of 185 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 1-, 3-, and 6-month spans are seasonally adjusted, while those for the 12-month span are 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 1988 data, published in the July 1988 issue of the *Review*. Consequently, data published in the *Review* prior to that issue are not necessarily comparable to current data. Unadjusted data have been revised back to April 1986; seasonally adjusted data have been revised back to January 1983. These revisions were published in the *Supplement to Employment and Earnings* (Bureau of Labor Statistics, 1988). Unadjusted data from April 1987 forward, and seasonally adjusted data from January 1984 forward are subject to revision in future benchmarks.

In the establishment survey, estimates for the 2 most recent months are based on incomplete returns and are published as preliminary in the tables (13 to 18 in the *Review*). When all returns have been received, the estimates are revised and published as final in the third month of their appearance. Thus, August data are published as preliminary in October and November and as final in December. For the same reason, quarterly establishment data (table 1) are preliminary for the first 2 months of publication and final in the third month. Thus, second-quarter data are published as preliminary in August and September and as final in October.

Additional sources of information

Detailed national data from the establishment survey are published monthly in the BLS periodical, *Employment and Earnings*. Earlier comparable unadjusted and seasonally adjusted data are published in *Employment, Hours, and Earnings, United States, 1909-84*, Bulletin 1312-12 (Bureau of Labor Statistics 1985) and its annual supplement. For a detailed discussion of the methodology of the survey, see BLS *Handbook of Methods*, Bulletin 2285 (Bureau of Labor Statistics, 1988).

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.

Unemployment data by State

Description of the series

Data presented in this section are obtained from two major sources—the Current Population Survey (CPS) and the Local Area Unemployment Statistics (LAUS) program, which is conducted in cooperation with State employment security agencies.

Monthly estimates of the labor force, employment, and unemployment for States and sub-State areas are a key indicator of local economic conditions and form the basis for determining the eligibility of an area for benefits under Federal economic assistance programs such as the Job Training Partnership Act and the Public Works and Economic Development Act. Insofar as possible, the concepts and definitions underlying these data are those used in the national estimates obtained from the CPS.

Notes on the data

Data refer to State of residence. Monthly data for 11 States—California, Florida, Illinois, Massachusetts, Michigan, New York, New Jersey, North Carolina, Ohio, Pennsylvania, and Texas—are obtained directly from the CPS, because the size of the sample is large enough to meet BLS standards of reliability. Data for the remaining 39 States and the District of Columbia are derived using standardized procedures established by BLS. Once a year, estimates for the 11 States are revised to new population controls. For the remaining States and the District of Columbia, data are benchmarked to annual average CPS levels.

Additional sources of information

Information on the concepts, definitions, and technical procedures used to develop labor force data for States and sub-State areas as well as additional data on sub-States are provided in the monthly Bureau of Labor Statistics periodical, *Employment and Earnings*, and the annual report, *Geographic Profile of Employment and Unemployment* (Bureau of Labor Statistics). See also BLS *Handbook of Methods*, Bulletin 2285 (Bureau of Labor Statistics, 1988).

COMPENSATION AND WAGE DATA

(Tables 1-3; 22-29)

COMPENSATION AND WAGE DATA are gathered by the Bureau from business establishments, State and local governments, labor unions, collective bargaining agreements on file with the Bureau, and secondary sources.

Employment Cost Index

Description of the series

The **Employment Cost Index (ECI)** is a quarterly measure of the rate of change in compensation per hour worked and includes wages, salaries, and employer costs of employee benefits. It uses a fixed market basket of labor—similar in concept to the Consumer Price Index's fixed market basket of goods and services—to measure change over time in employer costs of employing labor. The index is not seasonally adjusted.

Statistical series on total compensation costs, on wages and salaries, and on benefit costs are available for private nonfarm workers excluding proprietors, the self-employed, and household workers. The total compensation costs and wages and salaries series are also available for State and local government workers and for the civilian nonfarm economy, which consists of private industry and State and local government workers combined. Federal workers are excluded.

The Employment Cost Index probability sample consists of about 3,400 private nonfarm establishments providing about 18,000 occupational observations and 700 State and local government establishments providing 3,500 occupational observations selected to represent total employment in each sector. On average, each reporting unit provides wage and compensation information on five well-specified occupations. Data are collected each quarter for the pay period including the 12th day of March, June, September, and December.

Beginning with June 1986 data, fixed employment weights from the 1980 Census of Population are used each quarter to calculate the indexes for civilian, private, and State and local governments. (Prior to June 1986, the employment weights are from the 1970 Census of Population.) These fixed weights, also used to derive all of the industry and occupation series indexes, ensure that changes in these indexes reflect only changes in compensation, not employment shifts among industries or occupations with different levels of wages and compensation. For the bargaining status, region, and metropolitan/nonmetropolitan area series, however, employment data by industry and occupation are not available from the census. Instead, the 1980 employment weights are reallocated within these series each quarter based on the current sample. Therefore, these indexes are not strictly comparable to those for the aggregate, industry, and occupation series.

Definitions

Total compensation costs include wages, salaries, and the employer's costs for employee benefits.

Wages and salaries consist of earnings before payroll deductions, including production bonuses, incentive earnings, commissions, and cost-of-living adjustments.

Benefits include the cost to employers for paid leave, supplemental pay (including nonproduction bonuses), insurance, retirement and savings plans, and legally required benefits (such as Social Security, workers' compensation, and unemployment insurance).

Excluded from wages and salaries and employee benefits are such items as payment-in-kind, free room and board, and tips.

Notes on the data

The Employment Cost Index for changes in wages and salaries in the private nonfarm economy was published beginning in 1975. Changes in total compensation cost—wages and salaries and benefits combined—were published beginning in 1980. The series for changes in wages and salaries and for total compensation in the State and local government sector and in the civilian nonfarm economy (excluding Federal employees) were published beginning in 1981. Historical indexes (June 1981 = 100) of the quarterly rates of change are presented in the March issue of the BLS periodical, *Current Wage Developments*.

Additional sources of information

For a more detailed discussion of the Employment Cost Index, see the *Handbook of Methods*, Bulletin 2285 (Bureau of Labor Statistics, 1988), and the following *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; "Estimation procedures for the Employment Cost Index," May 1982; and "Introducing new weights for the Employment Cost Index," June 1985.

Data on the ECI are also available in BLS quarterly press releases issued in the month following the reference months of March, June, September, and December; and from the *Handbook of Labor Statistics*, Bulletin 2217 (Bureau of Labor Statistics, 1985).

Collective bargaining settlements

Description of the series

Collective bargaining settlements data provide statistical measures of negotiated adjustments (increases, decreases, and freezes) in compensation (wage and benefit costs) and wages alone, quarterly for private industry and semiannually for State and local government. Compensation measures cover all collective bargaining situations involving 5,000 workers or more and wage measures cover all situations involving 1,000 workers or more. These data, covering private nonagricultural industries and State and local governments, are calculated using information obtained from bargaining agreements on file with the Bureau, parties to the agreements, and secondary sources, such as newspaper accounts. The data are not seasonally adjusted.

Settlement data are measured in terms of future specified adjustments: those that will occur within 12 months of the contract effective date—first-year—and all adjustments that will occur over the life of the contract expressed as an average annual rate. Adjustments are worker weighted. Both first-year and over-the-life measures exclude wage changes that may occur under cost-of-living clauses that are triggered by future movements in the Consumer Price Index.

Effective wage adjustments measure all adjustments occurring in the reference period, regardless of the settlement date. Included are changes from settlements reached during the period, changes deferred from contracts negotiated in earlier periods, and changes under cost-of-living adjustment clauses. Each wage change is worker weighted. The changes are prorated over all workers under agreements during the reference period yielding the average adjustment.

Definitions

Wage rate changes are calculated by dividing newly negotiated wages by the average straight-time hourly wage rate plus shift premium at the time the agreement is reached. Compensation changes are calculated by

dividing the change in the value of the newly negotiated wage and benefit package by existing average hourly compensation, which includes the cost of previously negotiated benefits, legally required social insurance programs, and average hourly earnings.

Compensation changes are calculated by placing a value on the benefit portion of the settlements at the time they are reached. The cost estimates are based on the assumption that conditions existing at the time of settlement (for example, methods of financing pensions or composition of labor force) will remain constant. The data, therefore, are measures of negotiated changes and not of total changes of employer cost.

Contract duration runs from the effective date of the agreement to the expiration date or first wage reopening date, if applicable. Average annual percent changes over the contract term take account of the compounding of successive changes.

Notes on the data

Comparisons of major collective bargaining settlements for State and local government with those for private industry should note differences in occupational mix, bargaining practices, and settlement characteristics. Professional and white-collar employees, for example, make up a much larger proportion of the workers covered by government than by private industry settlements. Lump-sum payments and cost-of-living adjustment (COLA) clauses, on the other hand, are rare in government but common in private industry settlements. Also, State and local government bargaining frequently excludes items such as pension benefits and holidays, that are prescribed by law, while these items are typical bargaining issues in private industry.

Additional sources of information

For a more detailed discussion on the series, see the *BLS Handbook of Methods*, Bulletin 2285 (Bureau of Labor Statistics, 1988). Comprehensive data are published in press releases issued quarterly (in January, April, July, and October) for private industry, and semiannually (in February and August) for State and local government. Historical data and additional detailed tabulations for the prior calendar year appear in the April issue of the BLS periodical, *Current Wage Developments*.

Work stoppages

Description of the series

Data on **work stoppages** measure the number and duration of major strikes or lockouts (involving 1,000 workers or more) occurring during the month (or year), the number of workers involved, and the amount of time lost because of stoppage.

Data are largely from newspaper accounts and cover only establishments directly involved in a stoppage. They do not measure the indirect or secondary effect of stoppages on other establishments whose employees are idle owing to material shortages or lack of service.

Definitions

Number of stoppages: The number of strikes and lockouts involving 1,000 workers or more and lasting a full shift or longer.

Workers involved: The number of workers directly involved in the stoppage.

Number of days idle: The aggregate number of workdays lost by workers involved in the stoppages.

Days of idleness as a percent of estimated working time: Aggregate workdays lost as a percent of the aggregate number of standard workdays in the period multiplied by total employment in the period.

Notes on the data

This series is not comparable with the one terminated in 1981 that covered strikes involving six workers or more.

Additional sources of information

Data for each calendar year are reported in a BLS press release issued in the first quarter of the following year. Monthly and historical data appear in the BLS periodical, *Current Wage Developments*. Historical data appear in the *Handbook of Labor Statistics*, Bulletin 2217 (Bureau of Labor Statistics, 1985).

Other compensation data

Other BLS data on pay and benefits, not included in the Current Labor Statistics section of the *Monthly Labor Review*, appear in and consist of the following:

Industry Wage Surveys provide data for specific occupations selected to represent an industry's wage structure and the types of activities performed by its workers. The Bureau collects information on weekly work schedules, shift operations and pay differentials, paid holiday and vacation practices, and information on incidence of health, insurance, and retirement plans. Reports are issued throughout the year as the surveys are completed. Summaries of the data and special analyses also appear in the *Monthly Labor Review*.

Area Wage Surveys annually provide data for selected office, clerical, professional, technical, maintenance, toolroom, powerplant, material movement, and custodial occupations common to a wide variety of industries in the areas (labor markets) surveyed. Reports are issued throughout the year as the surveys are completed. Summaries of the data and special analyses also appear in the *Review*.

The National Survey of Professional, Administrative, Technical, and Clerical Pay provides detailed information annually on salary levels and distributions for the types of jobs mentioned in the survey's title in private employment. Although the definitions of the jobs surveyed reflect the duties and responsibilities in private industry, they are designed to match specific pay grades of Federal white-collar employees under the General Schedule pay system. Accordingly, this survey provides the legally required information for comparing the pay of salaried employees in the Federal civil service with pay in private industry. (See Federal Pay Comparability Act of 1970, 5 U.S.C. 5305.) Data are published in a BLS news release issued in the summer and in a bulletin each fall; summaries and analytical articles also appear in the *Review*.

Employee Benefits Survey provides nationwide information on the incidence and characteristics of employee benefit plans in medium and large establishments in the United States, excluding Alaska and Hawaii. Data are published in an annual BLS news release and bulletin, as well as in special articles appearing in the *Review*.

PRICE DATA (Tables 2; 30-41)

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 (1982 = 100 for many Producer Price Indexes or 1982-84 = 100 for many Consumer Price Indexes, unless otherwise noted).

Consumer Price Indexes**Description of the series**

The **Consumer Price Index (CPI)** is a measure of the average change in the prices paid by urban consumers for a fixed market basket of goods and services. The CPI is calculated monthly for two population groups, one consisting only of urban households whose primary source of income is derived from the employment of wage earners and clerical workers, and the other consisting of all urban households. The wage earner index (CPI-W) is a continuation of the historic index that was introduced well over a half-century ago for use in wage negotiations. As new uses were developed for the CPI in recent years, the need for a broader and more representative index became apparent. The all urban consumer index (CPI-U), introduced in 1978, is representative of the 1982-84 buying habits of about 80 percent of the noninstitutional population of the United States at that time, compared with 32 percent represented in the CPI-W. In addition to wage earners and clerical workers, the CPI-U covers 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 are kept essentially unchanged between major revisions so that only price changes will be measured. All taxes directly associated with the purchase and use of items are included in the index.

Data collected from more than 21,000 retail establishments and 60,000 housing units in 91 urban areas across the country are used to develop the "U.S. city average." Separate estimates for 27 major urban centers are presented in table 31. The areas listed are as indicated in footnote 1 to the table. The area indexes measure only the average change in prices for each area since the base period, and do not indicate differences in the level of prices among cities.

Notes on the data

In January 1983, the Bureau changed the way in which homeowner-ship costs are measured for the CPI-U. A rental equivalence method replaced the asset-price approach to homeownership costs for that series. In January 1985, the same change was made in the CPI-W. The central purpose of the change was to separate shelter costs from the investment component of homeownership so that the index would reflect only the cost of shelter services provided by owner-occupied homes. An updated CPI-U and CPI-W were introduced with release of the January 1987 data.

Additional sources of information

For a discussion of the general method for computing the CPI, see *BLS Handbook of Methods*, Bulletin 2285 (Bureau of Labor Statistics, 1988). The recent change in the measurement of homeownership costs is discussed in Robert Gillingham and Walter Lane, "Changing the treatment of shelter costs for homeowners in the CPI," *Monthly Labor Review*, July 1982, pp. 9-14. An overview of the recently introduced revised CPI, reflecting 1982-84 expenditure patterns, is contained in *The Consumer Price Index: 1987 Revision*, Report 736 (Bureau of Labor Statistics, 1987).

Additional detailed CPI data and regular analyses of consumer price changes are provided in the *CPI Detailed Report*, a monthly publication of the Bureau. Historical data for the overall CPI and for selected groupings may be found in the *Handbook of Labor Statistics*, Bulletin 2217 (Bureau of Labor Statistics, 1985).

Producer Price Indexes**Description of the series**

Producer Price Indexes (PPI) measure average changes in prices received by domestic producers of commodities in all stages of processing. The sample used for calculating these indexes currently contains about 3,100 commodities and about 75,000 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 stage of processing structure of Producer Price Indexes organizes products by class of buyer and degree of fabrication (that is, finished goods, intermediate goods, and crude materials). The traditional commodity structure of PPI 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.

Since January 1987, price changes for the various commodities have been averaged together with implicit quantity weights representing their importance in the total net selling value of all commodities as of 1982. 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 groups. All Producer Price Index data are subject to revision 4 months after original publication.

Notes on the data

Beginning with the January 1986 issue, the *Review* is no longer presenting tables of Producer Price Indexes for commodity groupings, special composite groups, or SIC industries. However, these data will continue to be presented in the Bureau's monthly publication *Producer Price Indexes*.

The Bureau has completed the first major stage of its comprehensive overhaul of the theory, methods, and procedures used to construct the Producer Price Indexes. Changes include the replacement of judgment sampling with probability sampling techniques; expansion to systematic coverage of the net output of virtually all industries in the mining and manufacturing sectors; a shift from a commodity to an industry orientation; the exclusion of imports from, and the inclusion of exports in, the survey universe; and the respecification of commodities priced to conform to Bureau of the Census definitions. These and other changes have been phased in gradually since 1978. The result is a system of indexes that is easier to use in conjunction with data on wages, productivity, and employment and other series that are organized in terms of the Standard Industrial Classification and the Census product class designations.

Additional sources of information

For a discussion of the methodology for computing Producer Price Indexes, see *BLS Handbook of Methods*, Bulletin 2285 (Bureau of Labor Statistics, 1988).

Additional detailed data and analyses of price changes are provided monthly in *Producer Price Indexes*. Selected historical data may be found in the *Handbook of Labor Statistics*, Bulletin 2217 (Bureau of Labor Statistics, 1985).

International Price Indexes

Description of the series

The BLS **International Price Program** produces quarterly export and import price indexes for nonmilitary goods traded between the United States and the rest of the world. The export price index provides a measure of price change for all products sold by U.S. residents to foreign buyers. ("Residents" is defined as in the national income accounts: it includes corporations, businesses, and individuals but does not require the organizations to be U.S. owned nor the individuals to have U.S. citizenship.) The import price index provides a measure of price change for goods purchased from other countries by U.S. residents. With publication of an all-import index in February 1983 and an all-export index in February 1984, all U.S. merchandise imports and exports now are represented in these indexes. The reference period for the indexes is 1985 = 100, unless otherwise indicated.

The product universe for both the import and export indexes includes raw materials, agricultural products, semifinished manufactures, and finished manufactures, including both capital and consumer goods. Price data for these items are collected quarterly by mail questionnaire. In nearly all cases, the data are collected directly from the exporter or importer, although in a few cases, prices are obtained from other sources.

To the extent possible, the data gathered refer to prices at the U.S. border for exports and at either the foreign border or the U.S. border for imports. For nearly all products, the prices refer to transactions completed during the first 2 weeks of the third month of each calendar quarter—March, June, September, and December. Survey respondents are asked to indicate all discounts, allowances, and rebates applicable to the reported prices, so that the price used in the calculation of the indexes is the actual price for which the product was bought or sold.

In addition to general indexes of prices for U.S. exports and imports, indexes are also published for detailed product categories of exports and imports. These categories are defined by the 4- and 5-digit level of detail of the Standard Industrial Trade Classification System (SITC). The calculation of indexes by SITC category facilitates the comparison of U.S. price trends and sector production with similar data for other countries. Detailed indexes are also computed and published on a Standard Industrial Classification (SIC-based) basis, as well as by end-use class.

Notes on the data

The export and import price indexes are weighted indexes of the Laspeyres type. Price relatives are assigned equal importance within

each weight category and are then aggregated to the SITC level. The values assigned to each weight category are based on trade value figures compiled by the Bureau of the Census. The trade weights currently used to compute both indexes relate to 1985.

Because a price index depends on the same items being priced from period to period, it is necessary to recognize when a product's specifications or terms of transaction have been modified. For this reason, the Bureau's quarterly questionnaire requests detailed descriptions of the physical and functional characteristics of the products being priced, as well as information on the number of units bought or sold, discounts, credit terms, packaging, class of buyer or seller, and so forth. When there are changes in either the specifications or terms of transaction of a product, the dollar value of each change is deleted from the total price change to obtain the "pure" change. Once this value is determined, a linking procedure is employed which allows for the continued repricing of the item.

For the export price indexes, the preferred pricing basis is f.a.s. (free alongside ship) U.S. port of exportation. When firms report export prices f.o.b. (free on board), production point information is collected which enables the Bureau to calculate a shipment cost to the port of exportation. An attempt is made to collect two prices for imports. The first is the import price f.o.b. at the foreign port of exportation, which is consistent with the basis for valuation of imports in the national accounts. The second is the import price c.i.f. (cost, insurance, and freight) at the U.S. port of importation, which also includes the other costs associated with bringing the product to the U.S. border. It does not, however, include duty charges. For a given product, only one price basis series is used in the construction of an index.

Beginning in 1988, the Bureau has also been publishing a series of indexes which represent the price of U.S. exports and imports in foreign currency terms.

Additional sources of information

For a discussion of the general method of computing International Price Indexes, see *BLS Handbook of Methods*, Bulletin 2285 (Bureau of Labor Statistics, 1988).

Additional detailed data and analyses of international price developments are presented in the Bureau's quarterly publication *U.S. Import and Export Price Indexes* and in occasional *Monthly Labor Review* articles prepared by BLS analysts. Selected historical data may be found in the *Handbook of Labor Statistics*, Bulletin 2217 (Bureau of Labor Statistics, 1985). For further information on the foreign currency indexes, see "BLS publishes average exchange rate and foreign currency price indexes," *Monthly Labor Review*, December 1987, pp. 47-49.

PRODUCTIVITY DATA

(Tables 2; 42-44)

U.S. productivity and related data

Description of the series

The productivity measures relate real physical output to real input. As such, they encompass a family of measures which include single factor productivity measures, such as output per unit of labor input (output per hour) or output per unit of capital input, as well as measures of multifactor productivity (output per unit of combined labor and capital inputs). The Bureau indexes show the change in output relative to changes in the various inputs. The measures cover the business, nonfarm business, manufacturing, and nonfinancial corporate sectors.

Corresponding indexes of hourly compensation, unit labor costs, unit nonlabor payments, and prices are also provided.

Definitions

Output per hour of all persons (labor productivity) is the value of goods and services in constant prices produced per hour of labor input. **Output per unit of capital services** (capital productivity) is the value of goods and services in constant dollars produced per unit of capital services input.

Multifactor productivity is output per unit of combined labor and capital inputs. Changes in this measure reflect changes in a number of factors which affect the production process such as changes in technology, shifts in the composition of the labor force, changes in

capacity utilization, research and development, skill and efforts of the work force, management, and so forth. Changes in the output per hour measures reflect the impact of these factors as well as the substitution of capital for labor.

Compensation per hour is the wages and salaries of employees plus employers' contributions for social insurance and private benefit plans, and the wages, salaries, and supplementary payments for the self-employed (except for nonfinancial corporations in which there are no self-employed)—the sum divided by hours paid for. **Real compensation per hour** is compensation per hour deflated by the Consumer Price Index for All Urban Consumers.

Unit labor costs are the labor compensation costs expended in the production of a unit of output and are 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 current dollar value of output and dividing by output. **Unit nonlabor costs** contain all the components of unit nonlabor payments *except* unit profits.

Unit profits include corporate profits with inventory valuation and capital consumption adjustments per unit of output.

Hours of all persons are the total hours paid of payroll workers, self-employed persons, and unpaid family workers.

Capital services is the flow of services from the capital stock used in production. It is developed from measures of the net stock of physical assets—equipment, structures, land, and inventories—weighted by rental prices for each type of asset.

Labor and capital inputs combined are derived by combining changes in labor and capital inputs with weights which represent each component's share of total output. The indexes for capital services and combined units of labor and capital are based on changing weights which are averages of the shares in the current and preceding year (the Tornquist index-number formula).

Notes on the data

Constant-dollar output for the **business sector** is equal to constant-dollar gross national product but excludes the rental value of owner-occupied dwellings, the rest-of-world sector, the output of nonprofit institutions, the output of paid employees of private households, general government, and the statistical discrepancy. Output of the **nonfarm business sector** is equal to business sector output less farming. The measures are derived from data 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 measures of manufacturing output (gross product originating) from the Bureau of Economic Analysis. Compensation and hours data are developed from data of the Bureau of Labor Statistics and the Bureau of Economic Analysis.

The productivity and associated cost measures in tables 42–44 describe the relationship between output in real terms and the labor time and capital services involved in its production. They show the changes from period to period in the amount of goods and services produced per unit of input. Although these measures relate output to hours and capital services, they do not measure the contributions of labor, capital, or any other specific factor of production. Rather, they reflect the joint effect of many influences, including changes in technology; capital investment; level of output; utilization of capacity, energy, and materials; the organization of production; managerial skill; and the characteristics and efforts of the work force.

Additional sources of information

Descriptions of methodology underlying the measurement of output per hour and multifactor productivity are found in the *BLS Handbook of Methods*, Bulletin 2285 (Bureau of Labor Statistics, 1988). Historical data for selected industries are provided in the *Handbook of Labor Statistics*, Bulletin 2217 (Bureau of Labor Statistics, 1985).

INTERNATIONAL COMPARISONS

(Tables 45–47)

Labor force and unemployment

Description of the series

Tables 45 and 46 present comparative measures of the labor force, employment, and unemployment—approximating U.S. concepts—for the United States, Canada, Australia, Japan, and six European countries. The unemployment statistics (and, to a lesser extent, employment statistics) published by other industrial countries are not, in most cases, comparable to U.S. unemployment statistics. Therefore, the Bureau adjusts the figures for selected countries, where necessary, for all known major definitional differences. Although precise comparability may not be achieved, these adjusted figures provide a better basis for international comparisons than the figures regularly published by each country.

Definitions

For the principal U.S. definitions of the **labor force**, **employment**, and **unemployment**, see the Notes section on **EMPLOYMENT DATA: Household Survey Data**.

Notes on the data

The adjusted statistics have been adapted to the age at which compulsory schooling ends in each country, rather than to the U.S.

standard of 16 years of age and over. Therefore, the adjusted statistics relate to the population age 16 and over in France, Sweden, and from 1973 onward, the United Kingdom; 16 and over in Canada, Australia, Japan, Germany, the Netherlands, and prior to 1973, the United Kingdom; and 14 and over in Italy. The institutional population is included in the denominator of the labor force participation rates and employment-population ratios for Japan and Germany; it is excluded for the United States and the other countries.

In the U.S. labor force survey, persons on layoff who are awaiting recall to their job are classified as unemployed. European and Japanese layoff practices are quite different in nature from those in the United States; therefore, strict application of the U.S. definition has not been made on this point. For further information, see *Monthly Labor Review*, December 1981, pp. 8–11.

The figures for one or more recent years for France, Germany, Italy, the Netherlands, and the United Kingdom are calculated using adjustment factors based on labor force surveys for earlier years and are considered preliminary. The recent-year measures for these countries are, therefore, subject to revision whenever data from more current labor force surveys become available.

There are breaks in the date series for Germany (1983), Italy (1986), the Netherlands (1983), and Sweden (1986). For both Germany and the Netherlands, the breaks reflect the replacement of labor force survey results tabulated by the national statistical offices with those tabulated by the European Community Statistical Office (EUROSTAT). The Dutch figures for 1983 onward also reflect the replacement of man-year

employment data with data from the Dutch Survey of Employed Persons. The impact of the changes was to lower the adjusted unemployment rate by 0.3 percentage point for Germany and by about 2 percentage points for the Netherlands.

For Italy, the break in series reflects more accurate enumeration of time of last job search. This resulted in a significant increase in the number of people reported as seeking work in the past 30 days. The impact was to increase the Italian unemployment rates approximating U.S. concepts by about 1 percentage point.

Sweden introduced a new questionnaire. Questions regarding current availability were added and the period of active workseeking was reduced from 60 days to 4 weeks. These changes resulted in lowering Sweden's unemployment rate by 0.5 percentage point.

Additional sources of information

For further information, see *International Comparisons of Unemployment*, Bulletin 1979 (Bureau of Labor Statistics, 1978), Appendix B, and unpublished Supplements to Appendix B, available on request. The statistics are also analyzed periodically in the *Monthly Labor Review*. The latest article appears in the April 1988 *Review*. Additional historical data, generally beginning with 1959, are published in the *Handbook of Labor Statistics* and are available in unpublished statistical supplements to Bulletin 1979.

Manufacturing productivity and labor costs

Description of the series

Table 47 presents comparative measures of manufacturing labor productivity, hourly compensation costs, and unit labor costs for the United States, Canada, Japan, and nine European countries. These measures are limited to trend comparisons—that is, intercountry series of changes over time—rather than level comparisons because reliable international comparisons of the levels of manufacturing output are unavailable.

Definitions

Output is constant value output (value added), generally taken from the national accounts of each country. While the national accounting methods for measuring real output differ considerably among the 12 countries, the use of different procedures does not, in itself, connote

lack of comparability—rather, it reflects differences among countries in the availability and reliability of underlying data series.

Hours refer to all employed persons including the self-employed in the United States and Canada; to all wage and salary employees in the other countries. The U.S. hours measure is hours paid; the hours measures for the other countries are hours worked.

Compensation (labor cost) includes all payments in cash or kind made directly to employees plus employer expenditures for legally required insurance programs and contractual and private benefit plans. In addition, for some countries, compensation is adjusted for other significant taxes on payrolls or employment (or reduced to reflect subsidies), even if they are not for the direct benefit of workers, because such taxes are regarded as labor costs. However, compensation does not include all items of labor cost. The costs of recruitment, employee training, and plant facilities and services—such as cafeterias and medical clinics—are not covered because data are not available for most countries. Self-employed workers are included in the U.S. and Canadian compensation figures by assuming that their hourly compensation is equal to the average for wage and salary employees.

Notes on the data

For most of the countries, the measures refer to total manufacturing as defined by the International Standard Industrial Classification. However, the measures for France (beginning 1959), Italy (beginning 1970), and the United Kingdom (beginning 1971), refer to manufacturing and mining less energy-related products and the figures for the Netherlands exclude petroleum refining from 1969 to 1976. For all countries, manufacturing includes the activities of government enterprises.

The figures for one or more recent years are generally based on current indicators of manufacturing output, employment, hours, and hourly compensation and are considered preliminary until the national accounts and other statistics used for the long-term measures become available.

Additional sources of information

For additional information, see the *BLS Handbook of Methods*, Bulletin 2285 (Bureau of Labor Statistics, 1988), and periodic *Monthly Labor Review* articles. Historical data are provided in the *Handbook of Labor Statistics*, Bulletin 2217 (Bureau of Labor Statistics, 1985). The statistics are issued twice per year—in a news release (generally in May) and in a *Monthly Labor Review* article.

OCCUPATIONAL INJURY AND ILLNESS DATA

(Table 48)

Description of the series

The Annual Survey of Occupational Injuries and Illnesses is designed to collect data on injuries and illnesses based on records which employers in the following industries maintain under the Occupational Safety and Health Act of 1970: agriculture, forestry, and fishing; oil and gas extraction; construction; manufacturing; transportation and public utilities; wholesale and retail trade; finance, insurance, and real estate; and services. Excluded from the survey are self-employed individuals, farmers with fewer than 11 employees, employers regulated by other Federal safety and health laws, and Federal, State, and local government agencies.

Because the survey is a Federal-State cooperative program and the data must meet the needs of participating State agencies, an independent sample is selected for each State. The sample is selected to

represent all private industries in the States and territories. The sample size for the survey is dependent upon (1) the characteristics for which estimates are needed; (2) the industries for which estimates are desired; (3) the characteristics of the population being sampled; (4) the target reliability of the estimates; and (5) the survey design employed.

While there are many characteristics upon which the sample design could be based, the total recorded case incidence rate is used because it is one of the most important characteristics and the least variable; therefore, it requires the smallest sample size.

The survey is based on stratified random sampling with a Neyman allocation and a ratio estimator. The characteristics used to stratify the establishments are the Standard Industrial Classification (SIC) code and size of employment.

Definitions

Recordable occupational injuries and illnesses are: (1) occupational deaths, regardless of the time between injury and death, or the length of the illness; or (2) nonfatal occupational illnesses; or (3) nonfatal occupational injuries which involve one or more of the following: loss of consciousness, restriction of work or motion, transfer to another job, or medical treatment (other than first aid).

Occupational injury is any injury such as a cut, fracture, sprain, amputation, and so forth, which results from a work accident or from exposure involving a single incident in the work environment.

Occupational illness is an abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to environmental factors associated with employment. It includes acute and chronic illnesses or disease which may be caused by inhalation, absorption, ingestion, or direct contact.

Lost workday cases are cases which involve days away from work, or days of restricted work activity, or both.

Lost workday cases involving restricted work activity are those cases which result in restricted work activity only.

Lost workdays away from work are the number of workdays (consecutive or not) on which the employee would have worked but could not because of occupational injury or illness.

Lost workdays—restricted work activity are the number of workdays (consecutive or not) on which, because of injury or illness: (1) the employee was assigned to another job on a temporary basis; or (2) the employee worked at a permanent job less than full time; or (3) the employee worked at a permanently assigned job but could not perform all duties normally connected with it.

The number of days away from work or days of restricted work activity does not include the day of injury or onset of illness or any days on which the employee would not have worked even though able to work.

Incidence rates represent the number of injuries and/or illnesses or lost workdays per 100 full-time workers.

Notes on the data

Estimates are made for industries and employment-size classes and for severity classification: fatalities, lost workday cases, and nonfatal cases without lost workdays. Lost workday cases are separated into

those where the employee would have worked but could not and those in which work activity was restricted. Estimates of the number of cases and the number of days lost are made for both categories.

Most of the estimates are in the form of incidence rates, defined as the number of injuries and illnesses, or lost workdays, per 100 full-time employees. For this purpose, 200,000 employee hours represent 100 employee years (2,000 hours per employee). Only a few of the available measures are included in the *Handbook of Labor Statistics*. Full detail is presented in the annual bulletin, *Occupational Injuries and Illnesses in the United States, by Industry*.

Comparable data for individual States are available from the BLS Office of Safety, Health, and Working Conditions.

Mining and railroad data are furnished to BLS by the Mine Safety and Health Administration and the Federal Railroad Administration, respectively. Data from these organizations are included in BLS and State publications. Federal employee experience is compiled and published by the Occupational Safety and Health Administration. Data on State and local government employees are collected by about half of the States and territories; these data are not compiled nationally.

Additional sources of information

The Supplementary Data System provides detailed information describing various factors associated with work-related injuries and illnesses. These data are obtained from information reported by employers to State workers' compensation agencies. The Work Injury Report program examines selected types of accidents through an employee survey which focuses on the circumstances surrounding the injury. These data are not included in the *Handbook of Labor Statistics* but are available from the BLS Office of Safety, Health, and Working Conditions.

The definitions of occupational injuries and illnesses and lost workdays are from *Recordkeeping Requirements under the Occupational Safety and Health Act of 1970*. For additional data, see *Occupational Injuries and Illnesses in the United States, by Industry*, annual Bureau of Labor Statistics bulletin; BLS *Handbook of Methods*, Bulletin 2285 (Bureau of Labor Statistics, 1988); *Handbook of Labor Statistics*, Bulletin 2217 (Bureau of Labor Statistics, 1985), pp. 411-14; annual reports in the *Monthly Labor Review*; and annual U.S. Department of Labor press releases.

1. Labor market indicators

Selected indicators	1986	1987	1986		1987				1988	
			III	IV	I	II	III	IV	I	II
Employment data										
Employment status of the civilian noninstitutionalized population (household survey) ¹										
Labor force participation rate	65.3	65.6	65.4	65.4	65.5	65.5	65.6	65.7	65.8	65.8
Employment-population ratio	60.7	61.5	60.8	60.9	61.1	61.4	61.7	61.9	62.1	62.2
Unemployment rate	7.0	6.2	7.0	6.8	6.6	6.3	6.0	5.9	5.7	5.5
Men	6.9	6.2	7.0	6.9	6.6	6.3	5.9	5.8	5.7	5.4
16 to 24 years	13.7	12.6	13.9	13.4	13.3	12.9	12.2	11.9	11.9	11.1
25 years and over	5.4	4.8	5.4	5.4	5.1	4.9	4.6	4.4	4.4	4.1
Women	7.1	6.2	7.0	6.8	6.6	6.2	6.1	6.0	5.8	5.6
16 to 24 years	12.8	11.7	12.7	12.5	12.5	11.8	11.4	11.1	11.0	10.8
25 years and over	5.5	4.8	5.4	5.3	5.0	4.7	4.7	4.7	4.4	4.3
Unemployment rate, 15 weeks and over	1.9	1.7	1.9	1.9	1.8	1.7	1.6	1.5	1.4	1.3
Employment, nonagricultural (payroll data), in thousands: ¹										
Total	99,525	102,310	99,676	100,347	101,024	101,841	102,669	103,683	104,670	105,597
Private sector	82,832	85,295	82,987	83,496	84,130	84,869	85,643	86,518	87,406	88,258
Goods-producing	24,558	24,784	24,454	24,443	24,523	24,644	24,847	25,116	25,260	25,497
Manufacturing	18,965	19,065	18,902	18,885	18,895	18,965	19,112	19,290	19,388	19,498
Service-producing	74,967	77,525	75,222	75,904	76,500	77,196	77,782	78,567	79,410	80,100
Average hours:										
Private sector	34.8	34.8	34.7	34.7	34.8	34.7	34.7	34.8	34.7	34.8
Manufacturing	40.7	41.0	40.7	40.8	41.0	40.9	40.9	41.1	41.0	41.1
Overtime	3.4	3.7	3.5	3.5	3.6	3.7	3.8	3.9	3.8	3.9
Employment Cost Index										
Percent change in the ECI, compensation:										
All workers (excluding farm, household, and Federal workers)	3.6	3.6	1.1	.6	.9	.7	1.2	.8	1.4	1.1
Private industry workers	3.2	3.3	.7	.6	1.0	.7	1.0	.7	1.5	1.2
Goods-producing ²	3.1	3.1	.6	.5	.5	.7	.8	1.0	1.8	1.1
Service-producing ²	3.2	3.7	.8	.6	1.3	.7	1.0	.5	1.3	1.4
State and local government workers	5.2	4.4	2.8	.8	.8	.3	2.3	.9	1.3	.3
Workers by bargaining status (private industry):										
Union	2.1	2.8	.5	.3	.5	.5	.6	1.1	1.6	1.0
Nonunion	3.6	3.6	.8	.7	1.1	.7	1.1	.6	1.5	1.3

¹ Quarterly data seasonally adjusted.

² Goods-producing industries include mining, construction, and manufacturing. Service-

producing industries include all other private sector industries.

2. Annual and quarterly percent changes in compensation, prices, and productivity

Selected measures	1986	1987	1986		1987				1988		
			III	IV	I	II	III	IV	I	II	
Compensation data^{1, 2}											
Employment Cost Index--compensation (wages, salaries, benefits):											
Civilian nonfarm	3.6	3.6	1.1	0.6	0.9	0.7	1.2	0.8	1.4	1.1	
Private nonfarm	3.2	3.3	.7	.6	1.0	.7	1.0	.7	1.5	1.2	
Employment Cost Index--wages and salaries											
Civilian nonfarm	3.5	3.5	1.1	.6	1.0	.5	1.3	.7	1.0	.9	
Private nonfarm	3.1	3.3	.7	.5	1.0	.7	1.0	.6	1.0	1.1	
Price data¹											
Consumer Price Index (All urban consumers): All items	1.1	4.4	.6	.3	1.4	1.2	1.3	.3	1.0	1.3	
Producer Price Index:											
Finished goods	-2.3	2.2	-7	1.1	.8	1.2	.2	.1	.5	1.5	
Finished consumer goods	-3.5	2.6	-7	-8	.9	1.6	.3	-2	.4	1.6	
Capital equipment	2.1	1.3	-8	2.1	.1	.3	-2	1.1	.7	.9	
Intermediate materials, supplies, components	-4.4	5.4	-2	-3	1.3	1.9	1.2	.9	1.1	2.6	
Crude materials	-8.9	8.9	-6	.6	4.2	5.3	.6	-1.4	-3	4.4	
Productivity data³											
Output per hour of all persons:											
Business sector	2.2	.8	-1.4	-8	.3	2.7	3.9	.6	3.5	-2.5	
Nonfarm business sector	2.0	.8	-1.5	-9	.0	3.2	3.7	.9	3.4	-1.4	
Nonfinancial corporations ⁴	1.8	1.5	1.2	2.6	-1.0	3.1	4.7	-1	4.3	.4	

¹ Annual changes are December-to-December change. Quarterly changes are calculated using the last month of each quarter. Compensation and price data are not seasonally adjusted and the price data are not compounded.

² Excludes Federal and private household workers.

³ Annual rates of change are computed by comparing annual averages.

Quarterly percent changes reflect annual rates of change in quarterly indexes. The data are seasonally adjusted.

⁴ Output per hour of all employees.

3. Alternative measures of wage and compensation changes

Components	Quarterly average						Four quarters ended--						
	1987				1988		1987				1988		
	I	II	III	IV	I	II	I	II	III	IV	I	II	
Average hourly compensation: ¹													
All persons, business sector	2.5	3.6	4.6	6.2	3.7	4.7	3.8	3.8	3.9	4.2	4.5	4.8	
All employees, nonfarm business sector	2.1	3.4	4.5	6.4	3.5	4.1	3.7	3.7	3.7	4.1	4.4	4.6	
Employment Cost Index--compensation:													
Civilian nonfarm ² .....	.9	.7	1.2	.8	1.4	1.1	3.4	3.3	3.4	3.6	4.1	4.6
Private nonfarm	1.0	.7	1.0	.7	1.5	1.2	3.1	3.0	3.3	3.3	3.9	4.5	
Union .....	.5	.5	.6	1.1	1.6	1.0	1.6	1.9	2.0	2.8	3.9	4.3
Nonunion	1.1	.7	1.1	.6	1.5	1.3	3.6	3.4	3.7	3.6	4.0	4.5	
State and local governments .....	.8	.3	2.3	.9	1.3	.3	5.0	4.7	4.2	4.4	4.9	5.0
Employment Cost Index--wages and salaries:													
Civilian nonfarm ²	1.0	.5	1.3	.7	1.0	.9	3.5	3.2	3.4	3.5	3.5	3.9	
Private nonfarm	1.0	.7	1.0	.6	1.0	1.1	3.2	3.0	3.3	3.3	3.3	3.7	
Union .....	.4	.5	.6	1.1	.4	.8	1.7	1.7	1.7	2.6	2.6	2.9
Nonunion	1.2	.8	1.1	.5	1.0	1.2	3.5	3.3	3.8	3.6	3.5	4.0	
State and local governments .....	.8	.2	2.3	.9	.9	.3	5.2	5.0	4.1	4.2	4.4	4.4
Total effective wage adjustments ³ .....	.4	1.0	.9	.8	.4	.8	2.0	2.2	2.6	3.1	3.2	3.0
From current settlements	(*)	.2	.2	.3	.1	.3	.3	.3	.4	.7	.8	.9	
From prior settlements .....	.3	.7	.6	.3	.3	.5	1.5	1.6	1.7	1.8	1.8	1.6
From cost-of-living provision .....	.1	.2	.1	.2	.1	.1	.1	.3	.4	.5	.5	.5
Negotiated wage adjustments from settlements: ³													
First-year adjustments .....	.8	2.6	2.1	2.4	2.2	2.7	1.2	1.5	2.0	2.2	2.4	2.4
Annual rate over life of contract	1.6	2.9	2.0	1.8	2.3	2.2	1.8	2.0	2.2	2.1	2.2	2.0	
Negotiated wage and benefit adjustments from settlements: ³													
First-year adjustment	1.1	4.1	2.5	3.4	1.8	3.4	1.2	1.8	2.7	3.0	3.1	3.1	
Annual rate over life of contract	2.1	3.9	2.1	2.4	1.8	2.4	1.7	2.1	2.6	2.6	2.5	2.3	

¹ Seasonally adjusted.

² Excludes Federal and household workers.

³ Limited to major collective bargaining units of 1,000 workers or more. The most recent data are preliminary.

⁴ Data round to zero.

⁵ Limited to major collective bargaining units of 5,000 workers or more. The most recent data are preliminary.

4. Employment status of the total population, by sex, monthly data seasonally adjusted

(Numbers in thousands)

Employment status	Annual average		1987						1988						
	1986	1987	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
TOTAL															
Noninstitutional population ^{1, 2}	182,293	184,490	184,605	184,738	184,904	185,052	185,225	185,370	185,571	185,705	185,847	185,964	186,088	186,247	186,402
Labor force ²	119,540	121,602	121,610	122,042	121,706	122,128	122,349	122,472	122,924	123,084	122,639	123,055	122,692	123,157	123,357
Participation rate ³	65.6	65.9	65.9	66.1	65.8	66.0	66.1	66.1	66.2	66.3	66.0	66.2	65.9	66.1	66.2
Total employed ²	111,303	114,177	114,359	114,786	114,615	114,951	115,259	115,494	115,878	116,145	115,839	116,445	115,909	116,703	116,732
Employment-population ratio ⁴	61.1	61.9	61.9	62.1	62.0	62.1	62.2	62.3	62.4	62.5	62.3	62.6	62.3	62.7	62.6
Resident Armed Forces ¹	1,706	1,737	1,720	1,736	1,743	1,741	1,755	1,750	1,749	1,736	1,736	1,732	1,714	1,685	1,673
Civilian employed	109,597	112,440	112,639	113,050	112,872	113,210	113,504	113,744	114,129	114,409	114,103	114,713	114,195	115,018	115,059
Agriculture	3,163	3,208	3,212	3,143	3,184	3,249	3,172	3,215	3,293	3,228	3,204	3,228	3,035	3,085	3,046
Nonagricultural industries	106,434	109,232	109,427	109,907	109,688	109,961	110,332	110,529	110,836	111,182	110,899	111,485	111,160	111,933	112,014
Unemployed	8,237	7,425	7,251	7,256	7,091	7,177	7,090	6,978	7,046	6,938	6,801	6,610	6,783	6,455	6,625
Unemployment rate ⁵	6.9	6.1	6.0	5.9	5.8	5.9	5.8	5.7	5.7	5.6	5.5	5.4	5.5	5.2	5.4
Not in labor force	62,752	62,888	62,995	62,696	63,198	62,924	62,876	62,898	62,647	62,621	63,208	62,909	63,396	63,090	63,045
Men, 16 years and over															
Noninstitutional population ^{1, 2}	87,349	88,476	88,534	88,598	88,683	88,756	88,849	88,924	89,033	89,099	89,168	89,225	89,287	89,367	89,445
Labor force ²	66,973	67,784	67,671	67,937	67,776	67,947	68,019	68,030	68,243	68,343	68,148	68,445	68,318	68,429	68,521
Participation rate ³	76.7	76.6	76.4	76.7	76.4	76.6	76.6	76.5	76.6	76.7	76.4	76.7	76.5	76.6	76.6
Total employed ²	62,443	63,684	63,711	63,916	63,949	64,048	64,174	64,245	64,396	64,636	64,332	64,892	64,583	64,934	65,002
Employment-population ratio ⁴	71.5	72.0	72.0	72.1	72.1	72.2	72.2	72.2	72.3	72.5	72.1	72.7	72.3	72.7	72.7
Resident Armed Forces ¹	1,551	1,577	1,561	1,575	1,581	1,580	1,593	1,589	1,588	1,577	1,573	1,569	1,553	1,523	1,512
Civilian employed	60,892	62,107	62,150	62,341	62,368	62,468	62,581	62,656	62,808	63,059	62,759	63,323	63,030	63,411	63,490
Unemployed	4,530	4,101	3,960	4,021	3,827	3,899	3,845	3,785	3,847	3,707	3,816	3,553	3,736	3,495	3,519
Unemployment rate ⁵	6.8	6.1	5.9	5.9	5.6	5.7	5.7	5.6	5.6	5.4	5.6	5.2	5.5	5.1	5.1
Women, 16 years and over															
Noninstitutional population ^{1, 2}	94,944	96,013	96,071	96,140	96,221	96,295	96,376	96,446	96,538	96,606	96,679	96,739	96,801	96,880	96,957
Labor force ²	52,568	53,818	53,939	54,105	53,930	54,181	54,330	54,442	54,681	54,740	54,491	54,610	54,374	54,728	54,836
Participation rate ³	55.4	56.1	56.1	56.3	56.0	56.3	56.4	56.4	56.6	56.7	56.4	56.5	56.2	56.5	56.6
Total employed ²	48,861	50,494	50,648	50,870	50,666	50,903	51,085	51,249	51,482	51,509	51,507	51,553	51,327	51,769	51,730
Employment-population ratio ⁴	51.5	52.6	52.7	52.9	52.7	52.9	53.0	53.1	53.3	53.3	53.3	53.3	53.0	53.4	53.4
Resident Armed Forces ¹	155	160	159	161	162	161	162	161	161	159	163	163	161	162	161
Civilian employed	48,706	50,334	50,489	50,709	50,504	50,742	50,923	51,088	51,321	51,350	51,344	51,390	51,166	51,607	51,569
Unemployed	3,707	3,324	3,291	3,235	3,264	3,278	3,245	3,193	3,200	3,231	2,985	3,057	3,047	2,960	3,106
Unemployment rate ⁵	7.1	6.2	6.1	6.0	6.1	6.1	6.0	5.9	5.9	5.9	5.5	5.6	5.6	5.4	5.7

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).

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

(Numbers in thousands)

Employment status	Annual average		1987						1988						
	1986	1987	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
TOTAL															
Civilian noninstitutional population ¹	180,587	182,753	182,885	183,002	183,161	183,311	183,470	183,620	183,822	183,969	184,111	184,232	184,374	184,562	184,729
Civilian labor force	117,834	119,865	119,890	120,306	119,963	120,387	120,594	120,722	121,175	121,348	120,903	121,323	120,978	121,472	121,684
Participation rate	65.3	65.6	65.6	65.7	65.5	65.7	65.7	65.7	65.9	66.0	65.7	65.9	65.6	65.8	65.9
Employed	109,597	112,440	112,639	113,050	112,872	113,210	113,504	113,744	114,129	114,409	114,103	114,713	114,195	115,018	115,059
Employment-population ratio ²	60.7	61.5	61.6	61.8	61.6	61.8	61.9	61.9	62.1	62.2	62.0	62.3	61.9	62.3	62.3
Unemployed	8,237	7,425	7,251	7,256	7,091	7,177	7,090	6,978	7,046	6,938	6,801	6,610	6,783	6,455	6,625
Unemployment rate	7.0	6.2	6.0	6.0	5.9	6.0	5.9	5.8	5.8	5.7	5.6	5.4	5.6	5.3	5.4
Not in labor force	62,752	62,888	62,995	62,696	63,198	62,924	62,876	62,898	62,647	62,621	63,208	62,909	63,396	63,090	63,045
Men, 20 years and over															
Civilian noninstitutional population ¹	78,523	79,565	79,625	79,668	79,740	79,807	79,885	80,002	80,120	80,203	80,260	80,326	80,402	80,526	80,608
Civilian labor force	61,320	62,095	62,106	62,083	62,085	62,211	62,299	62,248	62,440	62,696	62,497	62,791	62,662	62,667	62,769
Participation rate	78.1	78.0	78.0	77.9	77.9	78.0	78.0	77.8	77.9	78.2	77.9	78.2	77.9	77.8	77.9
Employed	57,569	58,726	58,783	58,825	58,967	59,037	59,164	59,185	59,287	59,625	59,407	59,883	59,590	59,797	59,954
Employment-population ratio ²	73.3	73.8	73.8	73.8	73.9	74.0	74.1	74.0	74.0	74.3	74.0	74.5	74.1	74.3	74.4
Agriculture	2,292	2,329	2,333	2,289	2,345	2,343	2,297	2,298	2,323	2,280	2,253	2,255	2,181	2,208	2,247
Nonagricultural industries	55,277	56,397	56,450	56,536	56,622	56,694	56,867	56,887	56,964	57,344	57,154	57,627	57,409	57,588	57,706
Unemployed	3,751	3,369	3,323	3,258	3,118	3,174	3,135	3,063	3,154	3,071	3,089	2,909	3,072	2,870	2,815
Unemployment rate	6.1	5.4	5.4	5.2	5.0	5.1	5.0	4.9	5.1	4.9	4.9	4.6	4.9	4.6	4.5
Women, 20 years and over															
Civilian noninstitutional population ¹	87,567	88,583	88,632	88,685	88,785	88,843	88,923	89,010	89,110	89,178	89,261	89,307	89,382	89,502	89,588
Civilian labor force	48,589	49,783	49,886	49,969	49,922	50,095	50,254	50,361	50,558	50,640	50,542	50,612	50,441	50,642	50,775
Participation rate	55.5	56.2	56.3	56.3	56.2	56.4	56.5	56.6	56.7	56.8	56.6	56.7	56.4	56.6	56.7
Employed	45,556	47,074	47,206	47,308	47,251	47,480	47,634	47,750	47,977	48,005	48,132	48,170	47,960	48,169	48,199
Employment-population ratio ²	52.0	53.1	53.3	53.3	53.2	53.4	53.6	53.6	53.8	53.8	53.9	53.9	53.7	53.8	53.8
Agriculture	614	622	620	609	600	636	636	643	646	654	656	692	587	616	542
Nonagricultural industries	44,943	46,453	46,586	46,699	46,651	46,844	46,998	47,107	47,331	47,351	47,476	47,478	47,373	47,553	47,657
Unemployed	3,032	2,709	2,680	2,661	2,671	2,615	2,620	2,611	2,581	2,635	2,411	2,442	2,481	2,473	2,576
Unemployment rate	6.2	5.4	5.4	5.3	5.4	5.2	5.2	5.2	5.1	5.2	4.8	4.8	4.9	4.9	5.1
Both sexes, 16 to 19 years															
Civilian noninstitutional population ¹	14,496	14,606	14,628	14,649	14,637	14,661	14,663	14,609	14,592	14,588	14,591	14,598	14,590	14,534	14,533
Civilian labor force	7,926	7,988	7,898	8,254	7,956	8,081	8,041	8,113	8,177	8,011	7,865	7,919	7,875	8,163	8,141
Participation rate	54.7	54.7	54.0	56.3	54.4	55.1	54.8	55.5	56.0	54.9	53.9	54.2	54.0	56.2	56.0
Employed	6,472	6,640	6,650	6,917	6,654	6,693	6,706	6,809	6,865	6,779	6,564	6,660	6,645	7,051	6,907
Employment-population ratio ²	44.6	45.5	45.5	47.2	45.5	45.7	45.7	46.6	47.0	46.5	45.0	45.6	45.5	48.5	47.5
Agriculture	258	258	259	245	239	270	239	274	323	293	295	280	267	260	257
Nonagricultural industries	6,215	6,382	6,391	6,672	6,415	6,423	6,467	6,535	6,542	6,486	6,269	6,380	6,378	6,791	6,650
Unemployed	1,454	1,347	1,248	1,337	1,302	1,388	1,335	1,304	1,312	1,232	1,301	1,259	1,230	1,112	1,234
Unemployment rate	18.3	16.9	15.8	16.2	16.4	17.2	16.6	16.1	16.0	15.4	16.5	15.9	15.6	13.6	15.2
White															
Civilian noninstitutional population ¹	155,432	156,958	157,058	157,134	157,242	157,342	157,449	157,552	157,676	157,773	157,868	157,943	158,034	158,166	158,279
Civilian labor force	101,801	103,290	103,248	103,516	103,357	103,669	103,731	103,907	104,252	104,530	104,171	104,574	104,209	104,691	104,603
Participation rate	65.5	65.8	65.7	65.9	65.7	65.9	65.9	66.0	66.1	66.3	66.0	66.2	65.9	66.2	66.1
Employed	95,660	97,789	97,917	98,181	98,069	98,317	98,492	98,779	99,044	99,474	99,274	99,751	99,297	99,932	99,725
Employment-population ratio ²	61.5	62.3	62.3	62.5	62.4	62.5	62.6	62.7	62.8	63.0	62.9	63.2	62.8	63.2	63.0
Unemployed	6,140	5,501	5,331	5,335	5,288	5,352	5,239	5,128	5,208	5,056	4,897	4,824	4,913	4,759	4,878
Unemployment rate	6.0	5.3	5.2	5.2	5.1	5.2	5.1	4.9	5.0	4.8	4.7	4.6	4.7	4.5	4.7
Black															
Civilian noninstitutional population ¹	19,989	20,352	20,373	20,396	20,426	20,453	20,482	20,508	20,539	20,569	20,596	20,622	20,650	20,683	20,715
Civilian labor force	12,654	12,993	13,039	13,150	13,028	13,152	13,193	13,215	13,222	13,168	13,098	13,078	13,069	12,989	13,293
Participation rate	63.3	63.8	64.0	64.5	63.8	64.3	64.4	64.4	64.4	64.0	63.6	63.4	63.3	62.8	64.2
Employed	10,814	11,309	11,381	11,513	11,421	11,556	11,589	11,605	11,608	11,504	11,420	11,482	11,452	11,489	11,774
Employment-population ratio ²	54.1	55.6	55.9	56.4	55.9	56.5	56.6	56.6	56.5	55.9	55.4	55.7	55.5	55.5	56.8
Unemployed	1,840	1,684	1,658	1,637	1,607	1,596	1,604	1,610	1,614	1,663	1,678	1,597	1,617	1,500	1,519
Unemployment rate	14.5	13.0	12.7	12.4	12.3	12.1	12.2	12.2	12.2	12.6	12.8	12.2	12.4	11.5	11.4

See footnotes at end of table.

5. Continued— Employment status of the civilian population, by sex, age, race and Hispanic origin, monthly data seasonally adjusted

(Numbers in thousands)

Employment status	Annual average		1987						1988						
	1986	1987	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
Hispanic origin															
Civilian noninstitutional population ¹	12,344	12,867	12,887	12,925	12,965	13,003	13,043	13,082	13,115	13,153	13,192	13,230	13,268	13,306	13,344
Civilian labor force	8,076	8,541	8,447	8,549	8,581	8,654	8,763	8,772	8,879	9,017	8,803	8,828	8,859	9,027	8,984
Participation rate	65.4	66.4	65.5	66.1	66.2	66.6	67.2	67.1	67.7	68.6	66.7	66.7	66.8	67.8	67.3
Employed	7,219	7,790	7,762	7,856	7,877	7,935	7,978	8,058	8,238	8,268	8,079	8,010	8,058	8,219	8,264
Employment-population ratio ²	58.5	60.5	60.2	60.8	60.8	61.0	61.2	61.6	62.8	62.9	61.2	60.5	60.7	61.8	61.9
Unemployed	857	751	685	693	704	719	785	714	642	749	724	818	801	809	720
Unemployment rate	10.6	8.8	8.1	8.1	8.2	8.3	9.0	8.1	7.2	8.3	8.2	9.3	9.0	9.0	8.0

¹ The population figures are not seasonally adjusted.

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

because data for the "other races" groups are not presented and Hispanics are included in both the white and black population groups.

NOTE: Detail for the above race and Hispanic-origin groups will not sum to totals

6. Selected employment indicators, monthly data seasonally adjusted

(In thousands)

Selected categories	Annual average		1987						1988						
	1986	1987	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
CHARACTERISTIC															
Civilian employed, 16 years and over	109,597	112,440	112,639	113,050	112,872	113,210	113,504	113,744	114,129	114,409	114,103	114,713	114,195	115,018	115,059
Men	60,892	62,107	62,150	62,341	62,368	62,468	62,581	62,656	62,808	63,059	62,759	63,323	63,030	63,411	63,490
Women	48,706	50,334	50,489	50,709	50,504	50,742	50,923	51,088	51,321	51,350	51,344	51,390	51,166	51,607	51,569
Married men, spouse present ..	39,658	40,265	40,262	40,308	40,404	40,556	40,645	40,711	40,404	40,475	40,481	40,459	40,267	40,485	40,535
Married women, spouse present	27,144	28,107	28,283	28,189	28,069	28,099	28,175	28,249	28,441	28,707	28,805	28,859	28,567	28,713	28,654
Women who maintain families ..	5,837	6,060	6,033	6,107	6,151	6,178	6,237	6,227	6,168	6,157	6,160	6,055	5,957	6,085	6,145
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture:															
Wage and salary workers	1,547	1,632	1,625	1,591	1,624	1,705	1,595	1,599	1,666	1,677	1,648	1,678	1,526	1,562	1,539
Self-employed workers	1,447	1,423	1,424	1,393	1,415	1,430	1,407	1,450	1,454	1,414	1,423	1,385	1,346	1,359	1,346
Unpaid family workers	169	153	153	155	139	140	155	156	138	114	142	155	159	167	148
Nonagricultural industries:															
Wage and salary workers	98,299	100,771	100,825	101,241	101,282	101,522	101,943	101,997	102,507	102,683	102,279	102,538	101,927	103,000	103,133
Government	16,342	16,800	16,876	16,794	16,928	17,033	17,118	17,064	17,197	16,948	16,908	17,015	16,887	17,064	16,959
Private industries	81,957	83,970	83,949	84,447	84,354	84,489	84,825	84,933	85,310	85,735	85,371	85,523	85,040	85,935	86,174
Private households	1,235	1,208	1,212	1,175	1,100	1,222	1,286	1,200	1,147	1,170	1,175	1,092	1,156	1,150	1,123
Other	80,722	82,762	82,737	83,272	83,254	83,267	83,539	83,733	84,163	84,565	84,196	84,431	83,884	84,786	85,051
Self-employed workers	7,881	8,201	8,216	8,214	8,204	8,274	8,222	8,280	8,150	8,312	8,366	8,637	8,917	8,577	8,528
Unpaid family workers	255	260	266	248	297	242	235	248	237	228	248	281	307	301	255
PERSONS AT WORK PART TIME¹															
All industries:															
Part time for economic reasons ..	5,588	5,401	5,428	5,283	5,261	5,353	5,534	5,262	5,367	5,566	5,343	5,194	4,844	5,317	5,382
Slack work	2,456	2,385	2,429	2,468	2,213	2,377	2,408	2,284	2,396	2,478	2,520	2,236	2,227	2,364	2,490
Could only find part-time work ..	2,800	2,672	2,683	2,526	2,683	2,655	2,696	2,638	2,640	2,598	2,535	2,502	2,315	2,637	2,581
Voluntary part time	13,935	14,395	14,437	14,573	14,415	14,488	14,523	14,711	14,571	14,572	14,603	15,016	14,790	14,507	15,070
Nonagricultural industries:															
Part time for economic reasons ..	5,345	5,122	5,154	5,016	4,986	5,067	5,241	5,004	5,145	5,254	5,106	4,924	4,623	5,076	5,185
Slack work	2,305	2,201	2,261	2,265	2,034	2,196	2,209	2,111	2,260	2,327	2,325	2,121	2,120	2,199	2,351
Could only find part-time work ..	2,719	2,587	2,599	2,463	2,603	2,557	2,597	2,552	2,566	2,457	2,475	2,397	2,236	2,566	2,545
Voluntary part time	13,502	13,928	13,953	14,099	13,987	14,011	14,064	14,222	14,096	14,123	14,141	14,592	14,338	14,083	14,669

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

7. Selected unemployment indicators, monthly data seasonally adjusted

(Unemployment rates)

Selected categories	Annual average		1987						1988						
	1986	1987	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
CHARACTERISTIC															
Total, all civilian workers	7.0	6.2	6.0	6.0	5.9	6.0	5.9	5.8	5.8	5.7	5.6	5.4	5.6	5.3	5.4
Both sexes, 16 to 19 years	18.3	16.9	15.8	16.2	16.4	17.2	16.6	16.1	16.0	15.4	16.5	15.9	15.6	13.6	15.2
Men, 20 years and over	6.1	5.4	5.4	5.2	5.0	5.1	5.0	4.9	5.1	4.9	4.9	4.6	4.9	4.6	4.5
Women, 20 years and over	6.2	5.4	5.4	5.3	5.4	5.2	5.2	5.2	5.1	5.2	4.8	4.8	4.9	4.9	5.1
White, total	6.0	5.3	5.2	5.2	5.1	5.2	5.1	4.9	5.0	4.8	4.7	4.6	4.7	4.5	4.7
Both sexes, 16 to 19 years	15.6	14.4	13.3	14.1	14.3	14.5	14.1	13.6	14.0	12.4	14.1	14.1	13.1	12.0	12.9
Men, 16 to 19 years	16.3	15.5	13.5	15.2	15.1	15.1	14.8	14.9	14.4	12.2	15.7	14.5	13.8	12.8	14.6
Women, 16 to 19 years	14.9	13.4	13.1	12.9	13.4	13.8	13.3	12.3	13.6	12.7	12.4	13.7	12.4	11.1	11.1
Men, 20 years and over	5.3	4.8	4.7	4.6	4.4	4.6	4.4	4.3	4.4	4.1	4.2	4.0	4.2	4.0	3.9
Women, 20 years and over	5.4	4.6	4.5	4.4	4.5	4.3	4.4	4.4	4.2	4.5	3.9	3.9	4.0	4.0	4.3
Black, total	14.5	13.0	12.7	12.4	12.3	12.1	12.2	12.2	12.2	12.6	12.8	12.2	12.4	11.5	11.4
Both sexes, 16 to 19 years	39.3	34.7	32.7	30.6	30.8	33.8	33.9	33.4	35.0	38.3	36.9	31.4	34.8	28.4	31.1
Men, 16 to 19 years	39.3	34.4	32.4	33.7	31.5	32.5	32.2	33.5	35.1	42.0	39.0	27.6	33.3	30.4	30.4
Women, 16 to 19 years	39.2	34.9	33.1	27.1	30.0	35.2	35.8	33.4	34.9	34.7	35.0	35.5	36.6	25.9	31.8
Men, 20 years and over	12.9	11.1	11.2	10.7	10.1	9.8	10.2	10.1	10.1	11.3	11.4	10.6	10.8	10.0	9.5
Women, 20 years and over	12.4	11.6	11.4	11.3	11.7	11.0	10.8	10.9	11.1	10.4	10.9	11.3	10.6	10.7	10.4
Hispanic origin, total	10.6	8.8	8.1	8.1	8.2	8.3	9.0	8.1	7.2	8.3	8.2	9.3	9.0	9.0	8.0
Married men, spouse present	4.4	3.9	3.8	3.7	3.7	3.7	3.5	3.4	3.6	3.4	3.4	3.0	3.3	3.1	3.0
Married women, spouse present	5.2	4.3	4.2	4.3	4.2	4.2	4.2	4.3	4.2	4.1	4.0	3.8	3.9	3.7	4.1
Women who maintain families	9.8	9.2	9.3	9.0	8.8	8.9	8.5	8.4	8.9	8.3	7.5	8.7	8.4	7.8	8.6
Full-time workers	6.6	5.8	5.7	5.6	5.5	5.6	5.5	5.4	5.4	5.3	5.3	5.1	5.2	4.9	5.0
Part-time workers	9.1	8.4	8.1	8.2	8.4	8.3	8.2	8.0	8.3	7.9	7.7	7.4	7.7	7.8	8.1
Unemployed 15 weeks and over	1.9	1.7	1.6	1.6	1.6	1.5	1.5	1.5	1.4	1.4	1.4	1.3	1.3	1.2	1.3
Labor force time lost ¹	7.9	7.1	6.9	6.9	6.8	6.8	6.8	6.6	6.6	6.6	6.5	6.2	6.4	6.3	6.4
INDUSTRY															
Nonagricultural private wage and salary workers	7.0	6.2	6.1	6.0	5.9	5.9	5.8	5.7	5.8	5.7	5.6	5.3	5.7	5.4	5.4
Mining	13.5	10.0	7.9	8.6	7.4	8.3	7.0	8.0	7.7	7.8	7.9	8.4	10.4	6.7	5.3
Construction	13.1	11.6	10.8	11.3	11.9	11.2	10.6	10.6	12.2	11.0	10.7	10.6	10.5	10.2	10.2
Manufacturing	7.1	6.0	6.0	5.6	5.6	5.7	5.3	5.1	5.6	5.6	5.2	5.3	5.4	4.8	5.2
Durable goods	6.9	5.8	6.0	5.5	5.4	5.2	4.8	4.8	5.5	5.9	5.2	4.8	4.9	4.4	5.0
Nondurable goods	7.4	6.3	5.9	5.8	5.9	6.5	5.9	5.6	5.8	5.3	5.3	6.0	6.0	5.4	5.6
Transportation and public utilities	5.1	4.5	4.4	4.4	4.1	4.4	4.5	4.6	3.6	3.6	4.2	3.8	4.4	4.1	3.5
Wholesale and retail trade	7.6	6.9	6.8	7.0	6.4	6.5	6.8	6.2	6.1	6.4	6.8	5.9	6.3	5.9	6.2
Finance and service industries	5.5	4.9	5.1	4.7	4.8	4.7	4.8	4.8	4.9	4.5	4.2	4.1	4.6	4.6	4.5
Government workers	3.6	3.5	3.4	3.7	3.4	3.3	3.4	3.2	3.0	2.8	2.8	3.0	2.9	2.8	3.1
Agricultural wage and salary workers	12.5	10.5	10.9	10.6	8.6	10.6	11.1	10.9	11.5	10.2	11.0	10.6	13.9	9.7	10.8

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

8. Unemployment rates by sex and age, monthly data seasonally adjusted

(Civilian workers)

Sex and age	Annual average		1987							1988						
	1986	1987	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	
	Total, 16 years and over	7.0	6.2	6.0	6.0	5.9	6.0	5.9	5.8	5.8	5.7	5.6	5.4	5.6	5.3	5.4
16 to 24 years	13.3	12.2	11.8	11.8	11.8	11.8	11.6	11.2	11.6	11.1	11.7	11.2	11.3	10.3	10.9	
16 to 19 years	18.3	16.9	15.8	16.2	16.4	17.2	16.6	16.1	16.0	15.4	16.5	15.9	15.6	13.6	15.2	
16 to 17 years	20.2	19.1	17.5	18.3	18.3	20.4	19.2	17.8	18.7	17.4	17.6	17.8	16.1	15.4	17.5	
18 to 19 years	17.0	15.2	13.9	14.7	15.2	14.7	14.8	14.7	14.5	13.9	15.8	14.2	15.3	12.9	13.0	
20 to 24 years	10.7	9.7	9.7	9.4	9.4	8.8	8.9	8.5	9.1	8.7	9.1	8.7	8.9	8.4	8.5	
25 years and over	5.4	4.8	4.7	4.7	4.6	4.6	4.5	4.5	4.5	4.5	4.2	4.1	4.3	4.1	4.2	
25 to 54 years	5.7	5.0	5.0	4.9	4.8	4.8	4.7	4.8	4.7	4.7	4.7	4.5	4.3	4.5	4.4	
55 years and over	3.9	3.3	3.1	3.2	3.3	3.1	3.4	3.2	3.5	3.3	2.9	2.9	3.5	2.9	3.1	
Men, 16 years and over	6.9	6.2	6.0	6.1	5.8	5.9	5.8	5.7	5.8	5.6	5.7	5.3	5.6	5.2	5.3	
16 to 24 years	13.7	12.6	11.9	12.5	12.1	12.1	12.0	11.7	12.2	11.3	12.1	11.2	11.6	10.5	11.3	
16 to 19 years	19.0	17.8	15.9	17.8	17.3	17.4	17.2	17.2	16.4	15.6	17.8	15.8	16.2	14.7	16.6	
16 to 17 years	20.8	20.2	17.1	20.5	19.7	20.9	20.4	19.3	19.4	16.9	18.5	17.2	16.7	17.0	17.9	
18 to 19 years	17.7	16.0	13.7	15.9	15.9	14.8	14.8	15.3	14.9	14.7	17.3	14.7	15.8	14.2	14.7	
20 to 24 years	11.0	9.9	9.9	9.6	9.3	9.2	9.2	8.7	9.9	9.0	9.1	8.8	9.1	8.2	8.4	
25 years and over	5.4	4.8	4.7	4.7	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.1	4.3	4.1	3.9	
25 to 54 years	5.6	5.0	4.9	4.9	4.7	4.8	4.6	4.6	4.5	4.5	4.5	4.2	4.4	4.2	4.1	
55 years and over	4.1	3.5	3.4	3.4	3.2	3.1	3.5	3.2	4.0	3.4	3.4	3.1	3.7	3.2	3.1	
Women, 16 years and over	7.1	6.2	6.1	6.0	6.1	6.1	6.0	5.9	5.9	5.9	5.5	5.6	5.6	5.4	5.7	
16 to 24 years	12.8	11.7	11.7	11.0	11.5	11.5	11.2	10.7	10.9	10.8	11.3	11.3	11.0	10.0	10.5	
16 to 19 years	17.6	15.9	15.7	14.4	15.4	16.9	16.0	14.8	15.6	15.1	15.2	16.0	15.0	12.4	13.6	
16 to 17 years	19.6	18.0	18.0	16.0	16.9	19.9	17.9	16.2	17.9	18.0	16.6	18.4	15.5	13.7	17.0	
18 to 19 years	16.3	14.3	14.1	13.4	14.4	14.6	14.7	14.1	14.1	13.1	14.2	13.7	14.7	11.6	11.2	
20 to 24 years	10.3	9.4	9.5	9.0	9.4	8.5	8.6	8.4	8.2	8.4	9.1	8.7	8.8	8.7	8.7	
25 years and over	5.5	4.8	4.7	4.7	4.7	4.7	4.7	4.7	4.6	4.7	4.1	4.2	4.3	4.2	4.5	
25 to 54 years	5.9	5.1	5.0	5.0	4.9	4.9	4.9	4.9	4.9	4.9	4.4	4.5	4.5	4.6	4.7	
55 years and over	3.6	3.0	2.6	2.9	3.5	3.1	3.2	3.3	2.8	3.1	2.3	2.7	3.2	2.6	3.0	

9. Unemployed persons by reason for unemployment, monthly data seasonally adjusted

(Numbers in thousands)

Reason for unemployment	Annual average		1987							1988						
	1986	1987	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	
	Job losers	4,033	3,566	3,529	3,389	3,313	3,388	3,307	3,200	3,209	3,207	3,139	2,916	3,236	3,059	3,087
On layoff	1,090	943	916	874	820	944	878	856	888	884	899	821	793	863	852	
Other job losers	2,943	2,623	2,613	2,515	2,493	2,444	2,429	2,344	2,320	2,323	2,240	2,095	2,443	2,196	2,235	
Job leavers	1,015	965	989	992	981	960	926	946	1,082	961	1,075	993	926	944	904	
Reentrants	2,160	1,974	1,930	1,969	1,908	1,845	1,974	1,945	1,917	1,951	1,756	1,784	1,789	1,723	1,901	
New entrants	1,029	920	844	855	882	914	855	909	885	864	887	915	807	777	776	
PERCENT OF UNEMPLOYED																
Job losers	48.9	48.0	48.4	47.0	46.8	47.7	46.8	45.7	45.2	45.9	45.8	44.1	47.9	47.0	46.3	
On layoff	13.2	12.7	12.6	12.1	11.6	13.3	12.4	12.2	12.5	12.7	13.1	12.4	11.7	13.3	12.8	
Other job losers	35.7	35.3	35.8	34.9	35.2	34.4	34.4	33.5	32.7	33.3	32.7	31.7	36.2	33.8	33.5	
Job leavers	12.3	13.0	13.6	13.8	13.8	13.5	13.1	13.5	15.3	13.8	15.7	15.0	13.7	14.5	13.6	
Reentrants	26.2	26.6	26.5	27.3	26.9	26.0	28.0	27.8	27.0	27.9	25.6	27.0	26.5	26.5	28.5	
New entrants	12.5	12.4	11.6	11.9	12.5	12.9	12.1	13.0	12.5	12.4	12.9	13.8	11.9	11.9	11.6	
PERCENT OF CIVILIAN LABOR FORCE																
Job losers	3.4	3.0	2.9	2.8	2.8	2.7	2.7	2.7	2.6	2.6	2.6	2.4	2.7	2.5	2.5	
Job leavers	.9	.8	.8	.8	.8	.8	.8	.8	.8	.9	.8	.9	.8	.8	.7	
Reentrants	1.8	1.6	1.6	1.6	1.6	1.5	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.4	1.6	
New entrants	.9	.8	.7	.7	.7	.8	.7	.8	.7	.7	.7	.8	.7	.6	.6	

10. Duration of unemployment, monthly data seasonally adjusted

(Numbers in thousands)

Weeks of unemployment	Annual average		1987							1988						
	1986	1987	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	
	Less than 5 weeks	3,448	3,246	3,186	3,203	3,220	3,223	3,218	3,229	3,089	3,084	3,009	3,125	3,075	3,066	2,965
5 to 14 weeks	2,557	2,196	2,144	2,142	1,949	2,093	2,029	1,968	2,263	2,145	2,101	1,956	2,110	1,890	2,078	
15 weeks and over	2,232	1,983	1,920	1,896	1,904	1,801	1,834	1,791	1,733	1,740	1,722	1,540	1,609	1,512	1,629	
15 to 26 weeks	1,045	943	945	834	917	844	899	892	839	841	887	725	784	727	838	
27 weeks and over	1,187	1,040	975	1,062	987	957	935	899	894	899	835	816	825	785	791	
Mean duration in weeks	15.0	14.5	14.2	14.3	14.2	14.1	14.0	14.2	14.4	14.4	13.7	13.4	13.8	12.9	13.6	
Median duration in weeks	6.9	6.5	6.6	6.4	5.8	6.2	6.1	6.0	6.4	6.4	6.6	5.6	5.9	6.0	6.3	

11. Unemployment rates of civilian workers by State, data not seasonally adjusted

State	June 1987	June 1988	State	June 1987	June 1988
Alabama	7.5	6.8	Montana	7.0	6.4
Alaska	11.0	8.7	Nebraska	4.9	3.3
Arizona	6.6	6.1	Nevada	6.2	5.4
Arkansas	8.0	7.8	New Hampshire	2.6	2.0
California	5.4	5.4	New Jersey	4.1	3.6
Colorado	7.6	6.2	New Mexico	9.4	8.7
Connecticut	3.3	3.0	New York	4.6	3.4
Delaware	3.0	3.0	North Carolina	4.9	3.5
District of Columbia	6.3	5.2	North Dakota	4.7	3.9
Florida	5.3	4.8	Ohio	7.3	6.1
Georgia	5.7	6.3	Oklahoma	7.7	6.1
Hawaii	4.3	3.1	Oregon	5.5	5.8
Idaho	7.2	5.6	Pennsylvania	6.2	5.6
Illinois	7.8	6.9	Rhode Island	3.9	3.1
Indiana	6.2	4.6	South Carolina	5.7	4.7
Iowa	5.3	4.0	South Dakota	3.9	3.5
Kansas	4.8	4.3	Tennessee	6.5	5.4
Kentucky	8.7	7.8	Texas	9.6	8.0
Louisiana	12.6	10.5	Utah	6.5	4.7
Maine	4.1	3.7	Vermont	3.3	2.5
Maryland	4.2	4.4	Virginia	4.3	3.8
Massachusetts	3.1	3.4	Washington	7.2	5.9
Michigan	8.9	7.1	West Virginia	10.3	8.8
Minnesota	5.2	3.4	Wisconsin	5.8	4.0
Mississippi	10.6	7.8	Wyoming	7.7	4.8
Missouri	6.1	5.1			

NOTE: Some data in this table may differ from data published elsewhere because of the continual updating of the database.

12. Employment of workers on nonagricultural payrolls by State, data not seasonally adjusted

(In thousands)

State	June 1987	May 1988	June 1988 ^p	State	June 1987	May 1988	June 1988 ^p
Alabama	1,506.6	1,527.2	1,542.2	Nebraska	661.7	676.7	675.3
Alaska	219.1	209.6	216.4	Nevada	504.5	527.7	532.1
Arizona	1,370.3	1,420.2	1,394.5	New Hampshire	519.1	530.3	538.6
Arkansas	837.7	860.7	861.9	New Jersey	3,638.5	3,672.1	3,720.0
California	11,687.3	12,050.1	12,121.0	New Mexico	530.8	540.0	542.5
Colorado	1,405.4	1,394.3	1,399.2	New York	8,124.9	8,215.2	8,272.0
Connecticut	1,663.3	1,670.9	1,686.9	North Carolina	2,872.4	2,941.5	2,962.1
Delaware	326.0	332.0	338.3	North Dakota	255.4	257.4	258.5
District of Columbia	658.5	668.2	673.4	Ohio	4,611.6	4,704.6	4,726.6
Florida	4,841.3	5,093.8	5,082.3	Oklahoma	1,114.3	1,103.3	1,108.2
Georgia	2,779.8	2,792.8	2,800.9	Oregon	1,109.2	1,134.3	1,148.3
Hawaii	459.6	467.9	469.0	Pennsylvania	4,944.9	5,038.1	5,068.6
Idaho	337.3	343.2	346.6	Rhode Island	455.7	459.6	460.3
Illinois	4,912.3	5,006.9	5,036.0	South Carolina	1,406.2	1,448.7	1,452.4
Indiana	2,317.4	2,402.8	2,404.3	South Dakota	261.3	262.6	266.0
Iowa	1,115.4	1,149.2	1,148.0	Tennessee	2,020.4	2,063.9	2,067.7
Kansas	1,002.9	1,023.4	1,025.1	Texas	6,483.8	6,587.3	6,592.3
Kentucky	1,313.7	1,358.9	1,362.1	Utah	642.2	649.8	653.2
Louisiana	1,482.5	1,498.3	1,501.9	Vermont	246.0	248.0	249.2
Maine	511.3	520.6	534.7	Virginia	2,711.8	2,787.5	2,817.1
Maryland	2,050.7	2,039.2	2,043.8	Washington	1,864.3	1,921.9	1,941.7
Massachusetts	3,091.2	3,124.4	3,154.4	West Virginia	603.1	616.5	606.4
Michigan	3,732.3	3,766.0	3,778.7	Wisconsin	2,105.5	2,145.2	2,181.1
Minnesota	1,982.0	2,026.5	2,043.0	Wyoming	186.2	178.2	183.7
Mississippi	860.5	888.0	884.3	Puerto Rico	788.1	788.4	821.3
Missouri	2,196.9	2,229.9	2,232.6	Virgin Islands	38.7	40.3	40.1
Montana	279.6	275.5	278.4				

^p = preliminary

NOTE: Some data in this table may differ from data published elsewhere

because of the continual updating of the database.

13. Employment of workers on nonagricultural payrolls by industry, monthly data seasonally adjusted

(In thousands)

Industry	Annual average		1987						1988						
	1986	1987	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June ^p	July ^p
TOTAL	99,525	102,310	102,430	102,672	102,906	103,371	103,678	104,001	104,262	104,729	105,020	105,281	105,489	106,021	106,304
PRIVATE SECTOR	82,832	85,295	85,421	85,656	85,851	86,241	86,520	86,794	87,044	87,475	87,700	87,973	88,139	88,661	88,929
GOODS-PRODUCING	24,558	24,784	24,788	24,851	24,902	25,025	25,123	25,201	25,180	25,271	25,330	25,435	25,466	25,590	25,672
Mining	777	721	722	728	734	740	736	735	728	731	733	737	739	740	740
Oil and gas extraction	451	405	408	412	417	421	418	417	414	415	419	421	425	425	423
Construction	4,816	4,998	4,997	5,012	5,012	5,060	5,090	5,118	5,083	5,150	5,192	5,238	5,237	5,305	5,319
General building contractors	1,291	1,326	1,320	1,326	1,328	1,340	1,348	1,352	1,365	1,377	1,383	1,400	1,394	1,411	1,389
Manufacturing	18,965	19,065	19,069	19,111	19,156	19,225	19,297	19,348	19,369	19,390	19,405	19,460	19,490	19,545	19,613
Production workers	12,877	12,995	13,006	13,038	13,075	13,118	13,175	13,215	13,225	13,249	13,251	13,280	13,302	13,341	13,406
Durable goods	11,230	11,218	11,190	11,246	11,269	11,315	11,355	11,390	11,393	11,404	11,411	11,459	11,477	11,514	11,573
Production workers	7,426	7,453	7,432	7,483	7,499	7,532	7,564	7,590	7,582	7,599	7,598	7,632	7,649	7,677	7,740
Lumber and wood products	710	740	740	739	744	744	750	754	754	756	755	758	757	758	755
Furniture and fixtures	498	518	524	524	526	529	531	533	536	535	534	535	537	537	543
Stone, clay, and glass products	585	582	579	580	580	583	585	588	583	584	585	587	585	587	588
Primary metal industries	752	749	751	755	761	766	768	769	768	770	772	773	776	781	790
Blast furnaces and basic steel products	274	269	272	274	276	278	279	279	279	280	281	281	281	282	283
Fabricated metal products	1,423	1,407	1,404	1,405	1,412	1,421	1,429	1,433	1,435	1,438	1,439	1,444	1,448	1,456	1,463
Machinery, except electrical	2,053	2,023	2,020	2,031	2,039	2,049	2,062	2,074	2,085	2,091	2,099	2,111	2,121	2,135	2,159
Electrical and electronic equipment	2,116	2,084	2,075	2,081	2,085	2,094	2,100	2,110	2,112	2,112	2,115	2,117	2,115	2,120	2,126
Transportation equipment	2,025	2,048	2,032	2,063	2,052	2,052	2,047	2,046	2,036	2,031	2,025	2,045	2,048	2,046	2,050
Motor vehicles and equipment	872	865	842	874	860	859	854	851	839	837	835	848	851	849	856
Instruments and related products	706	696	695	696	696	700	704	704	704	705	705	706	709	712	713
Miscellaneous manufacturing industries	361	370	370	372	374	377	379	379	380	382	382	383	381	382	386
Nondurable goods	7,734	7,847	7,879	7,865	7,887	7,910	7,942	7,958	7,976	7,986	7,994	8,001	8,013	8,031	8,040
Production workers	5,450	5,543	5,574	5,555	5,576	5,586	5,611	5,625	5,643	5,650	5,653	5,648	5,653	5,664	5,666
Food and kindred products	1,609	1,624	1,629	1,625	1,627	1,630	1,636	1,638	1,647	1,649	1,647	1,648	1,643	1,648	1,645
Tobacco manufactures	59	54	55	54	53	52	54	54	55	54	54	54	52	53	53
Textile mill products	703	725	730	728	730	731	733	733	732	732	729	727	728	727	728
Apparel and other textile products	1,101	1,100	1,116	1,098	1,104	1,106	1,110	1,106	1,105	1,104	1,106	1,100	1,100	1,096	1,089
Paper and allied products	674	679	678	680	682	682	683	684	685	686	687	687	689	691	691
Printing and publishing	1,459	1,507	1,510	1,514	1,518	1,522	1,528	1,532	1,538	1,544	1,548	1,554	1,559	1,564	1,568
Chemicals and allied products	1,022	1,026	1,025	1,029	1,032	1,036	1,041	1,047	1,047	1,049	1,052	1,056	1,060	1,066	1,071
Petroleum and coal products	169	165	165	165	166	167	167	167	166	165	164	165	166	166	167
Rubber and misc. plastics products	790	823	824	827	830	839	845	851	854	856	860	864	870	874	884
Leather and leather products	149	144	147	145	145	145	145	146	147	147	147	146	146	146	144
SERVICE-PRODUCING	74,967	77,525	77,642	77,821	78,004	78,346	78,555	78,800	79,082	79,458	79,690	79,846	80,023	80,431	80,632
Transportation and public utilities	5,255	5,385	5,373	5,394	5,427	5,448	5,466	5,481	5,499	5,513	5,530	5,543	5,556	5,578	5,593
Transportation	3,058	3,166	3,151	3,171	3,201	3,214	3,231	3,244	3,261	3,272	3,285	3,298	3,308	3,328	3,342
Communication and public utilities	2,197	2,218	2,222	2,223	2,226	2,234	2,235	2,237	2,238	2,241	2,245	2,245	2,248	2,250	2,251
Wholesale trade	5,753	5,872	5,874	5,892	5,914	5,935	5,958	5,984	6,010	6,035	6,061	6,089	6,115	6,145	6,169
Durable goods	3,383	3,449	3,450	3,463	3,478	3,498	3,514	3,536	3,555	3,573	3,591	3,610	3,635	3,658	3,682
Nondurable goods	2,370	2,423	2,424	2,429	2,436	2,437	2,444	2,448	2,455	2,462	2,470	2,479	2,480	2,487	2,487
Retail trade	17,930	18,509	18,543	18,569	18,605	18,705	18,761	18,784	18,927	19,045	19,050	19,093	19,130	19,213	19,295
General merchandise stores	2,366	2,432	2,437	2,449	2,457	2,489	2,495	2,494	2,526	2,561	2,543	2,546	2,541	2,546	2,549
Food stores	2,899	2,957	2,962	2,961	2,958	2,971	2,979	2,988	3,014	3,029	3,044	3,049	3,053	3,080	3,100
Automotive dealers and service stations	1,944	2,004	2,007	2,010	2,015	2,026	2,026	2,033	2,038	2,047	2,055	2,064	2,070	2,076	2,092
Eating and drinking places	5,916	6,127	6,128	6,143	6,152	6,191	6,216	6,232	6,260	6,291	6,319	6,326	6,336	6,357	6,378
Finance, insurance, and real estate	6,283	6,549	6,570	6,581	6,588	6,604	6,608	6,619	6,633	6,636	6,651	6,650	6,656	6,676	6,678
Finance	3,149	3,275	3,288	3,289	3,292	3,295	3,299	3,301	3,308	3,305	3,306	3,302	3,299	3,305	3,302
Insurance	1,939	2,022	2,024	2,029	2,032	2,043	2,042	2,049	2,052	2,053	2,060	2,065	2,067	2,072	2,071
Real estate	1,195	1,252	1,258	1,263	1,264	1,266	1,267	1,269	1,273	1,278	1,285	1,283	1,290	1,299	1,305
Services	23,053	24,196	24,273	24,369	24,415	24,524	24,604	24,725	24,795	24,975	25,078	25,163	25,216	25,459	25,522
Business services	4,799	5,172	5,179	5,212	5,233	5,282	5,287	5,306	5,321	5,385	5,405	5,420	5,443	5,477	5,492
Health services	6,536	6,828	6,836	6,875	6,894	6,928	6,962	6,995	7,019	7,056	7,088	7,126	7,153	7,206	7,252
Government	16,693	17,015	17,009	17,016	17,055	17,130	17,158	17,207	17,218	17,254	17,320	17,308	17,350	17,360	17,375
Federal	2,899	2,943	2,941	2,943	2,962	2,966	2,974	2,980	2,973	2,972	2,970	2,963	2,957	2,951	2,947
State	3,893	3,963	3,965	3,971	3,973	3,985	3,988	4,001	4,006	4,014	4,031	4,041	4,050	4,030	4,049
Local	9,901	10,109	10,103	10,102	10,120	10,179	10,196	10,226	10,239	10,268	10,319	10,304	10,343	10,379	10,379

^p = preliminary

NOTE: See notes on the data for a description of the most recent benchmark revision.

14. Average weekly hours of production or nonsupervisory workers on private nonagricultural payrolls by industry, monthly data seasonally adjusted

Industry	Annual average		1987							1988						
	1986	1987	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June ^P	July ^P	
PRIVATE SECTOR	34.8	34.8	34.8	34.8	34.6	34.9	34.8	34.6	34.7	34.8	34.6	34.9	34.7	34.7	34.9	
MANUFACTURING	40.7	41.0	41.0	41.0	40.6	41.2	41.2	41.0	41.1	41.0	40.9	41.2	41.0	41.1	41.1	
Overtime hours	3.4	3.7	3.8	3.8	3.7	3.9	3.9	3.8	3.9	3.7	3.7	3.9	3.9	3.9	3.9	
Durable goods	41.3	41.5	41.6	41.5	41.0	41.8	41.8	41.5	41.6	41.5	41.5	42.0	41.8	41.8	41.7	
Overtime hours	3.5	3.8	3.8	3.9	3.7	4.0	4.0	3.9	4.0	3.8	3.8	4.2	4.2	4.1	4.0	
Lumber and wood products	40.3	40.6	40.6	40.5	39.6	40.4	40.7	40.4	40.2	40.3	40.1	40.6	40.1	40.2	40.4	
Furniture and fixtures	39.8	40.0	40.0	40.0	39.5	40.1	40.2	39.8	39.6	39.5	39.3	39.5	39.5	39.3	39.4	
Stone, clay, and glass products	42.2	42.3	42.3	42.2	42.0	42.5	42.4	42.5	42.0	42.3	42.3	42.5	42.3	42.4	42.2	
Primary metal industries	41.9	43.1	43.2	43.3	43.2	43.6	43.5	43.4	43.4	43.1	43.3	43.5	43.6	43.6	43.4	
Blast furnaces and basic steel products	41.7	43.4	43.7	43.7	44.6	43.9	43.8	44.0	44.0	43.8	43.7	43.8	43.9	44.3	43.7	
Fabricated metal products	41.3	41.5	41.5	41.5	40.9	41.9	42.1	41.7	41.8	41.6	41.6	42.0	41.9	42.0	41.6	
Machinery except electrical	41.6	42.2	42.5	42.3	41.7	42.6	42.7	42.6	42.7	42.6	42.5	42.8	42.6	42.4	42.9	
Electrical and electronic equipment	41.0	40.9	40.9	40.9	40.4	41.0	41.0	40.9	41.1	40.9	40.9	41.2	41.0	41.1	40.8	
Transportation equipment	42.3	42.0	41.8	41.8	41.4	42.4	42.3	41.5	42.0	42.0	42.1	43.0	43.0	43.0	42.7	
Motor vehicles and equipment	42.6	42.2	41.8	41.9	41.5	42.8	42.9	41.4	42.1	42.3	42.3	44.1	44.0	44.3	43.0	
Instruments and related products	41.0	41.4	41.5	41.6	41.0	41.9	41.4	41.2	41.8	41.3	41.4	41.8	41.4	41.4	41.6	
Miscellaneous manufacturing	39.6	39.4	39.5	39.7	38.9	39.5	39.2	39.2	39.1	39.3	39.2	39.4	39.2	39.4	39.5	
Nondurable goods	39.9	40.2	40.3	40.3	40.1	40.4	40.3	40.3	40.3	40.2	40.1	40.3	40.0	40.1	40.3	
Overtime hours	3.3	3.6	3.7	3.7	3.6	3.8	3.7	3.7	3.8	3.6	3.6	3.6	3.6	3.6	3.8	
Food and kindred products	40.0	40.2	40.1	40.2	40.2	40.4	40.4	40.5	40.6	40.3	40.1	40.1	40.1	40.4	40.6	
Textile mill products	41.1	41.8	42.3	42.0	41.4	41.8	41.6	41.5	41.5	41.6	41.2	41.6	40.8	40.6	41.1	
Apparel and other textile products	36.7	37.0	37.2	37.2	36.4	37.3	37.1	37.1	36.8	37.0	37.0	37.4	36.8	37.0	37.2	
Paper and allied products	43.2	43.4	43.5	43.4	43.7	43.6	43.5	43.3	43.4	43.3	43.2	43.3	43.3	43.1	43.3	
Printing and publishing	38.0	38.0	38.1	38.1	38.1	38.1	38.0	38.0	38.1	38.1	38.1	38.2	37.7	38.0	38.0	
Chemicals and allied products	41.9	42.3	42.2	42.4	42.5	42.5	42.5	42.5	42.5	42.4	42.5	42.1	42.0	42.4	42.3	
Rubber and miscellaneous plastics products	41.3	41.6	41.6	41.6	41.3	41.8	41.8	41.6	41.7	41.6	41.7	42.0	41.7	41.6	41.9	
Leather and leather products	36.9	38.2	38.4	38.9	37.8	38.8	38.3	38.0	38.0	37.8	37.9	37.3	37.3	36.9	37.4	
TRANSPORTATION AND PUBLIC UTILITIES	39.2	39.2	39.3	39.3	39.1	39.3	39.2	39.1	39.5	39.1	38.8	39.5	39.4	39.3	39.4	
WHOLESALE TRADE	37.7	37.5	38.1	38.2	38.0	38.2	38.2	38.0	38.1	38.2	38.1	38.3	38.0	38.0	38.2	
RETAIL TRADE	29.2	29.2	29.3	29.4	29.5	29.2	29.2	28.8	29.0	29.1	29.0	29.2	29.0	29.1	29.3	
SERVICES	32.5	32.5	32.5	32.5	32.5	32.6	32.6	32.5	32.6	32.7	32.4	32.7	32.5	32.5	32.7	

^P = preliminary

benchmark adjustment.

NOTE: See "Notes on the data" for a description of the most recent

15. Average hourly earnings of production or nonsupervisory workers on private nonagricultural payrolls by industry

Industry	Annual average		1987						1988						
	1986	1987	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June ^a	July ^a
PRIVATE SECTOR	\$8.76	\$8.98	\$8.90	\$8.94	\$9.05	\$9.08	\$9.13	\$9.13	\$9.18	\$9.17	\$9.18	\$9.23	\$9.26	\$9.23	\$9.25
Seasonally adjusted	-	-	8.96	9.01	9.02	9.07	9.10	9.11	9.14	9.13	9.16	9.23	9.27	9.28	9.32
MINING	12.46	12.52	12.41	12.40	12.50	12.42	12.54	12.60	12.77	12.71	12.59	12.60	12.54	12.55	12.61
CONSTRUCTION	12.48	12.69	12.60	12.68	12.79	12.82	12.83	12.81	12.99	12.82	12.87	12.88	12.87	12.87	12.94
MANUFACTURING	9.73	9.91	9.87	9.86	9.99	9.95	10.01	10.07	10.07	10.05	10.07	10.12	10.14	10.16	10.18
Durable goods	10.29	10.43	10.38	10.39	10.49	10.48	10.54	10.60	10.60	10.58	10.59	10.65	10.67	10.70	10.70
Lumber and wood products	8.34	8.40	8.45	8.48	8.46	8.42	8.47	8.43	8.51	8.53	8.45	8.50	8.54	8.59	8.64
Furniture and fixtures	7.46	7.67	7.66	7.74	7.74	7.71	7.71	7.78	7.80	7.74	7.76	7.81	7.87	7.89	7.94
Stone, clay, and glass products	10.04	10.25	10.30	10.28	10.37	10.27	10.30	10.29	10.35	10.33	10.36	10.41	10.45	10.47	10.55
Primary metal industries	11.86	11.94	11.93	11.93	12.19	12.00	12.04	12.11	12.06	12.03	12.07	12.11	12.13	12.16	12.19
Blast furnaces and basic steel products	13.73	13.78	13.63	13.74	14.12	13.88	13.89	13.93	13.82	13.89	13.89	13.94	13.96	13.97	14.00
Fabricated metal products	9.88	10.00	9.93	9.94	10.00	10.06	10.10	10.19	10.12	10.13	10.14	10.22	10.23	10.27	10.19
Machinery, except electrical	10.57	10.70	10.67	10.70	10.74	10.79	10.83	10.89	10.85	10.82	10.84	10.88	10.90	10.93	10.94
Electrical and electronic equipment	9.65	9.88	9.86	9.88	9.94	9.92	9.98	10.03	10.02	10.02	10.04	10.09	10.12	10.15	10.20
Transportation equipment	12.81	12.95	12.82	12.88	13.04	13.07	13.18	13.25	13.22	13.17	13.20	13.28	13.31	13.38	13.30
Motor vehicles and equipment	13.45	13.55	13.35	13.40	13.64	13.69	13.79	13.87	13.94	13.85	13.93	14.09	14.10	14.17	13.94
Instruments and related products	9.47	9.71	9.71	9.74	9.76	9.78	9.83	9.84	9.93	9.92	9.88	9.89	9.87	9.90	10.04
Miscellaneous manufacturing	7.55	7.75	7.72	7.72	7.78	7.79	7.80	7.91	7.97	7.90	7.91	7.92	7.94	7.93	8.00
Nondurable goods	8.95	9.18	9.18	9.14	9.30	9.20	9.26	9.32	9.32	9.31	9.33	9.37	9.38	9.39	9.46
Food and kindred products	8.75	8.94	8.88	8.82	8.95	8.88	8.98	9.07	9.06	9.06	9.07	9.14	9.15	9.12	9.14
Tobacco manufactures	12.88	14.03	15.17	14.55	13.34	13.18	13.75	13.69	13.79	14.01	14.42	14.98	15.24	15.78	16.14
Textile mill products	6.93	7.17	7.13	7.16	7.23	7.24	7.29	7.31	7.34	7.30	7.31	7.35	7.31	7.33	7.30
Apparel and other textile products	5.84	5.93	5.87	5.88	5.99	5.97	5.98	6.00	6.02	6.02	6.03	6.04	6.05	6.08	6.02
Paper and allied products	11.18	11.43	11.49	11.41	11.66	11.46	11.49	11.53	11.54	11.50	11.52	11.60	11.64	11.63	11.74
Printing and publishing	9.99	10.28	10.24	10.32	10.48	10.41	10.39	10.43	10.38	10.40	10.45	10.40	10.43	10.44	10.47
Chemicals and allied products	11.98	12.37	12.37	12.33	12.56	12.50	12.55	12.61	12.55	12.55	12.53	12.57	12.59	12.60	12.71
Petroleum and coal products	14.19	14.59	14.51	14.54	14.74	14.66	14.77	14.73	14.89	14.96	14.98	15.00	14.93	15.04	15.24
Rubber and miscellaneous plastics products	8.73	8.91	8.96	8.93	9.01	8.93	8.98	9.04	9.00	9.00	9.00	9.04	9.04	9.06	9.10
Leather and leather products	5.92	6.08	5.99	6.04	6.13	6.12	6.15	6.16	6.16	6.19	6.23	6.29	6.27	6.27	6.26
TRANSPORTATION AND PUBLIC UTILITIES	11.70	12.03	12.00	12.06	12.11	12.12	12.21	12.24	12.16	12.23	12.19	12.27	12.28	12.29	12.31
WHOLESALE TRADE	9.35	9.59	9.56	9.60	9.64	9.65	9.72	9.73	9.78	9.78	9.78	9.88	9.87	9.85	9.94
RETAIL TRADE	6.03	6.11	6.07	6.07	6.20	6.16	6.18	6.19	6.24	6.23	6.24	6.26	6.28	6.26	6.28
FINANCE, INSURANCE, AND REAL ESTATE	8.36	8.73	8.63	8.74	8.73	8.76	8.89	8.81	8.96	9.02	8.97	9.03	9.09	8.96	9.00
SERVICES	8.18	8.48	8.34	8.40	8.54	8.61	8.71	8.73	8.81	8.81	8.80	8.82	8.84	8.78	8.80

- Data not available.
^a = preliminary

NOTE: See "Notes on the data" for a description of the most recent benchmark revision.

16. Average weekly earnings of production or nonsupervisory workers on private nonagricultural payrolls by industry

Industry	Annual average		1987								1988						
	1986	1987	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June ^p	July ^p		
PRIVATE SECTOR																	
Current dollars	\$304.85	\$312.50	\$311.50	\$314.69	\$314.04	\$316.89	\$317.72	\$317.72	\$315.79	\$316.37	\$315.79	\$320.28	\$320.40	\$323.05	\$324.68		
Seasonally adjusted	-	-	311.81	313.55	312.09	316.54	316.68	315.21	317.16	317.72	316.94	322.13	321.67	322.02	325.27		
Constant (1977) dollars	171.07	169.28	168.47	169.28	168.12	169.19	169.45	169.54	167.97	168.01	167.08	168.57	167.92	168.61	-		
MINING	525.81	530.85	521.22	529.48	528.75	532.82	534.20	543.06	537.62	531.28	527.52	539.28	529.19	534.63	532.14		
CONSTRUCTION	466.75	479.68	486.36	489.45	466.84	497.42	475.99	481.66	466.34	462.80	481.34	488.15	491.63	498.07	498.19		
MANUFACTURING																	
Current dollars	396.01	406.31	400.72	403.27	407.59	410.94	414.41	420.93	412.87	409.04	411.86	414.92	414.73	418.59	414.33		
Constant (1977) dollars	222.23	220.10	216.72	216.93	218.20	219.40	221.02	224.62	219.61	217.23	217.92	218.38	217.36	218.47	-		
Durable goods	424.98	432.85	425.58	429.11	431.14	438.06	442.68	449.44	440.96	436.95	440.54	444.11	444.94	448.33	440.84		
Lumber and wood products	336.10	341.04	341.38	345.98	337.55	341.85	342.19	341.42	336.15	339.49	337.16	345.10	345.87	351.33	347.33		
Furniture and fixtures	296.91	306.80	301.04	311.92	309.60	314.57	313.03	319.76	303.42	301.09	302.64	305.37	307.72	310.08	307.28		
Stone, clay, and glass products	423.69	433.58	438.78	437.93	440.73	441.61	436.72	435.27	423.32	426.63	435.12	442.43	447.26	448.12	448.38		
Primary metal industries	496.93	514.61	510.60	511.80	526.61	520.80	526.15	534.05	524.61	519.70	523.84	526.79	527.66	531.39	524.17		
Blast furnaces and basic steel products	572.54	598.05	595.63	594.94	631.16	603.78	608.38	618.49	606.70	609.77	606.99	613.36	612.84	621.67	611.80		
Fabricated metal products	408.04	415.00	405.14	410.52	410.00	422.52	428.24	435.11	423.02	418.37	421.82	426.17	426.59	432.37	416.77		
Machinery, except electrical	439.71	451.54	446.01	448.33	447.86	458.58	465.69	475.89	464.38	459.85	462.87	463.49	462.16	464.53	461.67		
Electrical and electronic equipment	395.65	404.09	397.36	402.12	401.58	406.72	413.17	421.26	413.83	406.81	410.64	411.67	411.88	417.17	410.04		
Transportation equipment	541.86	543.90	525.62	528.08	535.94	551.55	560.15	565.78	560.53	553.14	561.00	569.71	572.33	575.34	555.94		
Motor vehicles and equipment	572.97	571.81	546.02	545.38	560.60	583.19	591.59	593.64	592.45	587.24	598.99	621.37	624.63	627.73	586.87		
Instruments and related products	388.27	401.99	396.17	402.26	400.16	407.83	410.89	415.25	415.07	408.70	411.01	410.44	406.64	410.85	410.64		
Miscellaneous manufacturing	298.98	305.35	299.54	304.94	304.20	311.60	309.66	316.40	310.03	307.31	310.07	309.66	309.66	312.44	310.40		
Nondurable goods	357.11	369.04	367.20	369.26	374.79	372.60	375.96	381.19	374.66	370.54	373.20	373.86	374.26	377.48	378.40		
Food and kindred products	350.00	359.39	355.20	358.09	365.16	360.53	365.49	372.78	366.93	358.78	359.17	361.03	366.92	368.45	370.17		
Tobacco manufactures	481.71	547.17	565.84	549.99	534.93	545.65	562.38	554.45	540.57	540.79	566.71	576.73	601.98	628.04	629.46		
Textile mill products	284.82	299.71	296.61	302.15	301.49	304.08	306.18	307.75	303.14	301.49	299.71	301.35	297.52	299.80	294.92		
Apparel and other textile products	214.33	219.41	216.60	219.32	217.44	223.88	223.65	225.60	220.33	220.93	223.11	222.27	222.64	226.78	222.14		
Paper and allied products	482.98	496.06	496.37	492.91	514.21	500.80	503.26	509.63	501.99	494.50	494.21	498.80	501.68	500.09	504.82		
Printing and publishing	379.62	390.64	388.10	394.22	403.48	397.66	397.94	403.64	392.36	393.12	399.19	395.20	391.13	392.54	395.77		
Chemicals and allied products	501.96	523.25	518.30	519.09	536.31	528.75	535.89	542.23	533.38	530.87	532.53	529.20	528.78	534.24	533.82		
Petroleum and coal products	621.52	641.96	651.50	633.94	648.56	645.04	651.36	655.49	658.14	647.77	654.63	666.00	658.41	676.80	688.85		
Rubber and miscellaneous plastics products	360.55	370.66	367.36	369.70	372.11	374.17	377.16	383.30	376.20	372.60	375.30	377.87	376.06	377.80	375.83		
Leather and leather products	218.45	232.26	231.81	235.56	231.71	237.46	236.16	237.78	231.62	227.79	233.00	232.73	235.75	237.63	236.00		
TRANSPORTATION AND PUBLIC UTILITIES	458.64	471.58	475.20	478.78	474.71	477.53	479.85	479.81	474.24	475.75	470.53	480.98	481.38	485.46	488.71		
WHOLESALE TRADE	358.11	365.38	365.19	367.68	366.32	369.60	371.30	371.69	370.66	370.66	370.66	377.42	375.06	376.27	380.70		
RETAIL TRADE	176.08	178.41	182.10	183.31	182.90	179.26	179.22	181.37	176.59	177.56	178.46	180.91	181.49	184.04	188.40		
FINANCE, INSURANCE, AND REAL ESTATE	304.30	316.90	312.41	318.14	314.28	317.11	322.71	317.16	324.35	328.33	321.13	326.89	325.42	321.66	325.80		
SERVICES	265.85	275.60	273.55	276.36	276.70	279.83	283.08	282.85	285.44	287.21	284.24	287.53	286.42	287.11	290.40		

- Data not available.
^p = preliminary

NOTE: See "Notes on the data" for a description of the most recent benchmark revision.

17. The Hourly Earnings Index for production or nonsupervisory workers on private nonagricultural payrolls by industry

Industry	Not seasonally adjusted				Seasonally adjusted					
	July 1987	May 1988	June 1988 ^p	July 1988 ^p	July 1987	Mar. 1988	Apr. 1988	May 1988	June 1988 ^p	July 1988 ^p
PRIVATE SECTOR (in current dollars)	172.6	178.6	178.2	178.9	173.2	177.0	178.0	178.7	178.6	179.5
Mining ¹	181.8	184.2	184.5	185.5	-	-	-	-	-	-
Construction	154.0	157.5	157.5	158.2	154.9	157.5	157.8	157.5	158.0	159.2
Manufacturing	174.7	178.5	178.7	179.1	174.5	177.3	177.9	178.4	178.8	179.0
Transportation and public utilities	174.9	180.5	180.4	180.6	176.2	179.4	180.6	181.6	181.3	181.9
Wholesale trade ¹	176.5	182.2	181.6	183.1	-	-	-	-	-	-
Retail trade	160.5	165.8	165.6	166.2	161.1	163.8	164.8	165.4	165.7	166.8
Finance, insurance, and real estate ¹	185.5	195.9	193.7	194.5	-	-	-	-	-	-
Services	179.1	189.5	188.4	189.2	180.9	186.9	188.3	189.9	189.3	191.1
PRIVATE SECTOR [in constant (1977) dollars]	93.3	93.6	93.0	-	93.7	93.5	93.6	93.6	93.2	-

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.
 - Data not available.

^p = preliminary.
 NOTE: See "Notes on the data" for a description of the most recent benchmark revision. Publication of the Hourly Earnings Index series will be discontinued with the initial publication of December 1988 data.

18. Indexes of diffusion: industries in which employment increased, data seasonally adjusted

(In percent)

Time span and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Over 1-month span:												
1986	57.0	47.3	49.5	50.8	51.9	46.8	51.9	54.1	51.4	53.0	58.9	58.9
1987	50.8	59.2	61.1	62.4	62.4	61.6	70.8	62.2	68.1	67.3	67.8	68.4
1988	61.6	61.6	62.2	63.8	58.1	69.7	63.8	-	-	-	-	-
Over 3-month span:												
1986	50.0	47.6	45.7	46.2	46.2	46.2	48.1	51.9	50.5	55.9	59.7	59.2
1987	57.6	57.0	65.1	69.2	68.1	71.9	73.8	76.8	74.1	76.5	78.1	73.0
1988	71.6	66.8	67.0	66.8	71.6	70.8	-	-	-	-	-	-
Over 6-month span:												
1986	48.1	47.3	43.8	42.7	43.2	47.0	46.5	50.0	55.9	53.2	55.9	58.4
1987	64.6	64.3	63.0	70.3	72.4	77.3	78.4	79.7	82.7	77.8	77.0	76.5
1988	73.5	70.3	70.5	73.8	-	-	-	-	-	-	-	-
Over 12-month span:												
1986	42.2	41.6	43.8	44.9	45.7	48.6	46.8	48.6	51.6	53.8	56.5	57.8
1987	63.8	67.3	69.5	73.5	76.8	76.8	78.9	78.9	79.7	78.4	77.8	81.9
1988	78.6	-	-	-	-	-	-	-	-	-	-	-

- Data not available.

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. Data for the 2 most recent months shown in each span are preliminary. See the "Definitions" in this section. See "Notes on the data" for a description of the most recent benchmark revision.

19. Annual data: Employment status of the noninstitutional population

(Numbers in thousands)

Employment status	1979	1980	1981	1982	1983	1984	1985	1986	1987
Noninstitutional population	166,460	169,349	171,775	173,939	175,891	178,080	179,912	182,293	184,490
Labor force:									
Total (number)	106,559	108,544	110,315	111,872	113,226	115,241	117,167	119,540	121,602
Percent of population	64.0	64.1	64.2	64.3	64.4	64.7	65.1	65.6	65.9
Employed:									
Total (number)	100,421	100,907	102,042	101,194	102,510	106,702	108,856	111,303	114,177
Percent of population	60.3	59.6	59.4	58.2	58.3	59.9	60.5	61.1	61.9
Resident Armed Forces	1,597	1,604	1,645	1,668	1,676	1,697	1,706	1,706	1,737
Civilian:									
Total	98,824	99,303	100,397	99,526	100,834	105,005	107,150	109,597	112,440
Agriculture	3,347	3,364	3,368	3,401	3,383	3,321	3,179	3,163	3,208
Nonagricultural industries	95,477	95,938	97,030	96,125	97,450	101,685	103,971	106,434	109,232
Unemployed:									
Total (number)	6,137	7,637	8,273	10,678	10,717	8,539	8,312	8,237	7,425
Percent of labor force	5.8	7.0	7.5	9.5	9.5	7.4	7.1	6.9	6.1
Not in labor force (number)	59,900	60,806	61,460	62,067	62,665	62,839	62,744	62,752	62,888

20. Annual data: Employment levels by industry

(Numbers in thousands)

Industry	1979	1980	1981	1982	1983	1984	1985	1986	1987
Total employment	89,823	90,406	91,156	89,566	90,200	94,496	97,519	99,525	102,310
Private sector	73,876	74,166	75,126	73,729	74,330	78,472	81,125	82,832	85,295
Goods-producing	26,461	25,658	25,497	23,813	23,334	24,727	24,859	24,558	24,784
Mining	958	1,027	1,139	1,128	952	966	927	777	721
Construction	4,463	4,346	4,188	3,905	3,948	4,383	4,673	4,816	4,998
Manufacturing	21,040	20,285	20,170	18,781	18,434	19,378	19,260	18,965	19,065
Service-producing	63,363	64,748	65,659	65,753	66,866	69,769	72,660	74,967	77,525
Transportation and public utilities	5,136	5,146	5,165	5,082	4,954	5,159	5,238	5,255	5,385
Wholesale trade	5,204	5,275	5,358	5,278	5,268	5,555	5,717	5,753	5,872
Retail trade	14,989	15,035	15,189	15,179	15,613	16,545	17,356	17,930	18,509
Finance, insurance, and real estate	4,975	5,160	5,298	5,341	5,468	5,689	5,955	6,283	6,549
Services	17,112	17,890	18,619	19,036	19,694	20,797	22,000	23,053	24,196
Government	15,947	16,241	16,031	15,837	15,869	16,024	16,394	16,693	17,015
Federal	2,773	2,866	2,772	2,739	2,774	2,807	2,875	2,899	2,943
State	3,541	3,610	3,640	3,640	3,662	3,734	3,832	3,893	3,963
Local	9,633	9,765	9,619	9,458	9,434	9,482	9,687	9,901	10,109

NOTE: See "Notes on the data" for a description of the most recent benchmark revision.

21. Annual data: Average hours and earnings of production or nonsupervisory workers on nonagricultural payrolls, by industry

Industry	1979	1980	1981	1982	1983	1984	1985	1986	1987
Private sector									
Average weekly hours	35.7	35.3	35.2	34.8	35.0	35.2	34.9	34.8	34.8
Average hourly earnings (in dollars)	6.16	6.66	7.25	7.68	8.02	8.32	8.57	8.76	8.98
Average weekly earnings (in dollars)	219.91	235.10	255.20	267.26	280.70	292.86	299.09	304.85	312.50
Mining									
Average weekly hours	43.0	43.3	43.7	42.7	42.5	43.3	43.4	42.2	42.4
Average hourly earnings (in dollars)	8.49	9.17	10.04	10.77	11.28	11.63	11.98	12.46	12.52
Average weekly earnings (in dollars)	365.07	397.06	438.75	459.88	479.40	503.58	519.93	525.81	530.85
Construction									
Average weekly hours	37.0	37.0	36.9	36.7	37.1	37.8	37.7	37.4	37.8
Average hourly earnings (in dollars)	9.27	9.94	10.82	11.63	11.94	12.13	12.32	12.48	12.69
Average weekly earnings (in dollars)	342.99	367.78	399.26	426.82	442.97	458.51	464.46	466.75	479.68
Manufacturing									
Average weekly hours	40.2	39.7	39.8	38.9	40.1	40.7	40.5	40.7	41.0
Average hourly earnings (in dollars)	6.70	7.27	7.99	8.49	8.83	9.19	9.54	9.73	9.91
Average weekly earnings (in dollars)	269.34	288.62	318.00	330.26	354.08	374.03	386.37	396.01	406.31
Transportation and public utilities									
Average weekly hours	39.9	39.6	39.4	39.0	39.0	39.4	39.5	39.2	39.2
Average hourly earnings (in dollars)	8.16	8.87	9.70	10.32	10.79	11.12	11.40	11.70	12.03
Average weekly earnings (in dollars)	325.58	351.25	382.18	402.48	420.81	438.13	450.30	458.64	471.58
Wholesale trade									
Average weekly hours	38.8	38.5	38.5	38.3	38.5	38.5	38.4	38.3	38.1
Average hourly earnings (in dollars)	6.39	6.96	7.56	8.09	8.55	8.89	9.16	9.35	9.59
Average weekly earnings (in dollars)	247.93	267.96	291.06	309.85	329.18	342.27	351.74	358.11	365.38
Retail trade									
Average weekly hours	30.6	30.2	30.1	29.9	29.8	29.8	29.4	29.2	29.2
Average hourly earnings (in dollars)	4.53	4.88	5.25	5.48	5.74	5.85	5.94	6.03	6.11
Average weekly earnings (in dollars)	138.62	147.38	158.03	163.85	171.05	174.33	174.64	176.08	178.41
Finance, insurance, and real estate									
Average weekly hours	36.2	36.2	36.3	36.2	36.2	36.5	36.4	36.4	36.3
Average hourly earnings (in dollars)	5.27	5.79	6.31	6.78	7.29	7.63	7.94	8.36	8.73
Average weekly earnings (in dollars)	190.77	209.60	229.05	245.44	263.90	278.50	289.02	304.30	316.90
Services									
Average weekly hours	32.7	32.6	32.6	32.6	32.7	32.6	32.5	32.5	32.5
Average hourly earnings (in dollars)	5.36	5.85	6.41	6.92	7.31	7.59	7.90	8.18	8.48
Average weekly earnings (in dollars)	175.27	190.71	208.97	225.59	239.04	247.43	256.75	265.85	275.60

22. Employment Cost Index, compensation,¹ by occupation and industry group

(June 1981 = 100)

Series	1986			1987				1988		Percent change	
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	3 months ended	12 months ended
	June 1988										
Civilian workers ²	131.5	133.0	133.8	135.0	135.9	137.5	138.6	140.6	142.1	1.1	4.6
Workers, by occupational group:											
White-collar workers	134.2	136.0	136.9	138.5	139.3	141.2	142.2	144.2	145.7	1.0	4.6
Blue-collar workers	126.8	127.8	128.4	129.1	130.1	131.3	132.5	134.7	136.2	1.1	4.7
Service occupations	133.7	135.4	136.6	138.0	138.5	139.9	140.8	142.9	144.3	1.0	4.2
Workers, by industry division:											
Goods-producing	128.1	128.8	129.5	130.2	131.1	132.2	133.5	135.8	137.3	1.1	4.7
Manufacturing	128.7	129.3	130.1	130.7	131.5	132.7	134.1	136.8	138.1	1.0	5.0
Service-producing	133.7	135.6	136.5	138.1	138.9	140.8	141.7	143.6	145.1	1.0	4.5
Services	139.4	142.4	143.6	145.2	145.8	149.2	150.6	152.8	153.8	.7	5.5
Health services	-	-	-	-	-	-	-	-	-	1.4	5.1
Hospitals	-	-	-	-	-	-	-	-	-	1.4	5.7
Public administration ³	138.0	140.6	141.6	144.1	144.7	146.4	148.1	150.3	151.2	.6	4.5
Nonmanufacturing	132.8	134.6	135.4	136.9	137.8	139.6	140.5	142.3	143.9	1.1	4.4
Private industry workers	129.9	130.8	131.6	132.9	133.8	135.1	136.0	138.1	139.8	1.2	4.5
Workers, by occupational group:											
White-collar workers	132.5	133.5	134.3	136.1	137.0	138.5	139.3	141.2	143.0	1.3	4.4
Professional specialty and technical occupations	-	-	-	-	-	-	-	-	-	1.2	5.0
Executive, administrative, and managerial occupations	-	-	-	-	-	-	-	-	-	1.1	3.9
Sales occupations	-	-	-	-	-	-	-	-	-	2.3	3.4
Administrative support occupations, including clerical	-	-	-	-	-	-	-	-	-	1.0	4.9
Blue-collar workers	126.3	127.2	127.8	128.4	129.5	130.6	131.8	134.1	135.6	1.1	4.7
Precision production, craft, and repair occupation	-	-	-	-	-	-	-	-	-	1.0	4.3
Machine operators, assemblers, and inspectors	-	-	-	-	-	-	-	-	-	1.2	5.2
Transportation and material moving occupations	-	-	-	-	-	-	-	-	-	1.7	4.7
Handlers, equipment cleaners, helpers, and laborers	-	-	-	-	-	-	-	-	-	.7	4.9
Service occupations	131.1	132.3	133.5	134.7	135.2	135.9	136.7	138.6	140.1	1.1	3.6
Workers, by industry division:											
Goods-producing	127.8	128.6	129.2	129.9	130.8	131.9	133.2	135.6	137.1	1.1	4.8
Construction	-	-	-	-	-	-	-	-	-	1.3	4.1
Manufacturing	128.7	129.3	130.1	130.7	131.5	132.7	134.1	136.8	138.1	1.0	5.0
Durables	-	-	-	-	-	-	-	-	-	1.0	5.0
Nondurables	-	-	-	-	-	-	-	-	-	.9	4.9
Service-producing	131.6	132.7	133.5	135.3	136.3	137.7	138.4	140.2	142.1	1.4	4.3
Transportation and public utilities	-	-	-	-	-	-	-	-	-	1.0	3.1
Transportation	-	-	-	-	-	-	-	-	-	1.7	3.4
Public utilities	-	-	-	-	-	-	-	-	-	.3	2.6
Wholesale and retail trade	-	-	-	-	-	-	-	-	-	1.9	4.0
Wholesale trade	-	-	-	-	-	-	-	-	-	1.8	4.0
Retail trade	-	-	-	-	-	-	-	-	-	1.9	4.0
Finance, insurance, and real estate	-	-	-	-	-	-	-	-	-	1.5	3.1
Service	-	-	-	-	-	-	-	-	-	.9	5.5
Health services	-	-	-	-	-	-	-	-	-	1.7	5.3
Hospitals	-	-	-	-	-	-	-	-	-	1.5	5.9
Nonmanufacturing	130.6	131.7	132.4	134.1	135.1	136.4	137.1	138.9	140.8	1.4	4.2
State and local government workers	139.7	143.6	144.7	145.9	146.3	149.7	151.1	153.1	153.6	.3	5.0
Workers, by occupational group:											
White-collar workers	140.5	145.0	146.0	147.2	147.5	151.2	152.7	154.8	155.2	.3	5.2
Blue-collar workers	136.3	138.5	139.5	140.8	141.3	143.3	144.3	145.9	145.9	.0	3.3
Workers, by industry division:											
Services	140.8	145.5	146.6	147.3	147.6	151.8	153.1	155.2	155.6	.3	5.4
Hospitals and other services ⁴	137.9	139.4	141.1	142.5	143.3	145.1	146.3	150.3	150.4	.1	5.0
Health services	-	-	-	-	-	-	-	-	-	.4	4.8
Schools	141.7	147.6	148.4	148.9	149.1	154.1	155.5	156.8	157.3	.3	5.5
Elementary and secondary	143.2	149.4	150.3	150.5	150.7	156.5	157.8	158.9	159.4	.3	5.8
Public administration ³	138.0	140.6	141.6	144.1	144.7	146.4	148.1	150.3	151.2	.6	4.5

¹ Cost (cents per hour worked) measured in the Employment Cost Index consists of wages, salaries, and employer cost of employee benefits.

² Consist of private industry workers (excluding farm and household workers) and State and local government (excluding Federal Government) workers.

³ Consist of legislative, judicial, administrative, and regulatory activities.

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

- Data not available.

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

(June 1981 = 100)

Series	1986			1987				1988		Percent change	
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	3 months ended	12 months ended
	June 1988										
Civilian workers ¹	129.3	130.7	131.5	132.8	133.5	135.2	136.1	137.4	138.7	0.9	3.9
Workers, by occupational group:											
White-collar workers	132.4	134.1	135.0	136.6	137.3	139.4	140.2	141.5	143.0	1.1	4.2
Blue-collar workers	124.1	125.0	125.6	126.2	127.1	128.3	129.4	130.4	131.6	.9	3.5
Service occupations	130.0	131.7	132.8	134.2	134.7	136.0	136.6	138.0	139.3	.9	3.4
Workers, by industry division											
Goods-producing	125.6	126.3	127.0	127.8	128.5	129.8	131.0	132.2	133.4	.9	3.8
Manufacturing	126.5	127.2	127.9	128.7	129.5	130.8	132.2	133.3	134.4	.8	3.8
Service-producing	131.5	133.4	134.2	135.8	136.5	138.5	139.2	140.5	141.9	1.0	4.0
Services	137.0	139.9	141.1	142.7	143.4	146.8	148.2	149.5	150.4	.6	4.9
Health services	-	-	-	-	-	-	-	-	-	-	1.6
Hospitals	-	-	-	-	-	-	-	-	-	-	1.5
Public administration ²	134.6	137.5	138.1	140.5	141.0	142.6	143.8	145.5	146.4	.6	3.8
Nonmanufacturing	130.4	132.2	133.0	134.5	135.2	137.1	137.8	139.0	140.5	1.1	3.9
Private industry workers	127.9	128.8	129.5	130.8	131.7	133.0	133.8	135.1	136.6	1.1	3.7
Workers, by occupational group:											
White-collar workers	131.1	132.0	132.7	134.6	135.4	137.0	137.6	139.0	140.8	1.3	4.0
Professional specialty and technical occupations	134.0	135.4	136.4	138.4	139.1	141.2	142.6	144.0	145.8	1.3	4.8
Executive, administrative, and managerial occupations	132.1	132.4	133.5	135.6	136.4	138.6	139.2	139.9	141.3	1.0	3.6
Sales occupations	124.3	125.2	124.9	126.7	127.1	127.0	126.1	127.5	130.8	2.6	2.9
Administrative support occupations, including clerical	130.8	131.7	132.7	134.3	135.5	137.1	138.1	140.2	141.2	.7	4.2
Blue-collar workers	123.7	124.5	125.1	125.6	126.6	127.7	128.9	129.9	131.1	.9	3.6
Precision production, craft, and repair occupations	125.7	126.7	127.4	127.9	128.8	130.2	131.1	132.1	133.4	1.0	3.6
Machine operators, assemblers, and inspectors	123.6	124.1	124.9	125.5	126.7	127.5	129.2	129.9	131.2	1.0	3.6
Transportation and material moving occupations	118.9	119.8	120.1	120.5	121.5	122.3	122.9	123.7	125.4	1.4	3.2
Handlers, equipment cleaners, helpers, and laborers	120.3	120.9	121.4	121.9	122.6	123.7	125.0	126.7	127.5	.6	4.0
Service occupations	128.0	128.9	130.1	131.4	131.9	132.6	133.2	134.5	135.8	1.0	3.0
Workers, by industry division:											
Goods-producing	125.4	126.1	126.8	127.5	128.3	129.6	130.8	132.0	133.2	.9	3.8
Construction	119.8	120.5	120.8	121.7	122.7	123.8	124.7	125.9	127.6	1.4	4.0
Manufacturing	126.5	127.2	127.9	128.7	129.5	130.8	132.2	133.3	134.4	.8	3.8
Durables	125.8	126.4	127.2	127.7	128.7	129.7	131.1	132.1	133.1	.8	3.4
Nondurables	127.9	128.5	129.3	130.5	131.0	132.8	134.1	135.6	136.7	.8	4.4
Service-producing	129.9	130.9	131.6	133.4	134.3	135.7	136.2	137.5	139.3	1.3	3.7
Transportation and public utilities	126.6	127.3	127.5	128.1	129.3	130.0	130.2	131.3	132.5	.9	2.5
Transportation	-	-	-	-	-	-	-	-	-	-	1.1
Public utilities	-	-	-	-	-	-	-	-	-	-	.6
Wholesale and retail trade	125.8	126.5	126.9	127.9	129.9	130.6	130.7	131.9	134.6	2.0	3.6
Wholesale trade	131.2	131.8	133.1	134.8	137.2	137.8	138.5	139.0	141.7	1.9	3.3
Retail trade	123.7	124.4	124.5	125.2	127.1	127.8	127.7	129.2	131.7	1.9	3.6
Finance, insurance, and real estate	128.0	129.0	130.0	133.5	131.5	131.8	131.6	132.9	134.9	1.5	2.6
Services	136.9	138.2	139.5	141.8	142.8	145.9	147.1	148.6	149.8	.8	4.9
Health services	-	-	-	-	-	-	-	-	-	-	1.9
Hospitals	-	-	-	-	-	-	-	-	-	-	1.6
Nonmanufacturing	128.7	129.7	130.4	131.9	132.8	134.2	134.8	136.0	137.8	1.3	3.8
State and local government workers	136.0	140.4	141.4	142.5	142.8	146.1	147.4	148.7	149.1	.3	4.4
Workers, by occupational group											
White-collar workers	137.0	141.8	142.8	143.9	144.1	147.7	149.3	150.5	150.8	.2	4.6
Blue-collar workers	131.9	134.5	135.1	136.3	136.9	139.0	139.6	141.1	141.1	.0	3.1
Workers, by industry division											
Services	137.1	142.1	143.3	143.9	144.2	148.2	149.5	150.7	151.1	.3	4.8
Hospitals and other services ³	133.3	135.8	137.3	138.6	139.4	141.2	142.2	144.5	144.7	.1	3.8
Health services	-	-	-	-	-	-	-	-	-	-	.7
Schools	138.2	144.1	145.1	145.5	145.6	150.3	151.8	152.6	153.0	.3	5.1
Elementary and secondary	139.4	145.7	146.4	146.5	146.6	152.0	153.4	154.0	154.3	.2	5.3
Public administration ²	134.6	137.5	138.1	140.5	141.0	142.6	143.8	145.5	146.4	.6	3.8

¹ Consists of private industry workers (excluding farm and household workers) and State and local government (excluding Federal Government) workers.
² Consists of legislative, judicial, administrative, and regulatory activities.

³ Includes, for example, library, social and health services.
 - Data not available.

24. Employment Cost Index, private nonfarm workers, by bargaining status, region, and area size

(June 1981 = 100)

Series	1986			1987				1988		Percent change	
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	3 months ended	12 months ended
										June 1988	
COMPENSATION											
Workers, by bargaining status¹											
Union	128.7	129.4	129.8	130.5	131.2	132.0	133.4	135.6	136.9	1.0	4.3
Goods-producing	126.7	127.3	127.5	128.0	128.7	129.5	131.3	134.1	135.3	.9	5.1
Service-producing	131.9	132.8	133.4	134.4	135.2	135.9	136.7	138.0	139.4	1.0	3.1
Manufacturing	126.9	127.5	127.9	128.0	128.7	129.5	131.5	135.0	136.2	.9	5.8
Nonmanufacturing	130.4	131.2	131.5	132.6	133.5	134.3	135.1	136.2	137.5	1.0	3.0
Nonunion	130.2	131.2	132.1	133.6	134.6	136.1	136.9	138.9	140.7	1.3	4.5
Goods-producing	128.2	129.1	130.0	130.8	131.8	133.1	134.1	136.2	137.8	1.2	4.6
Service-producing	131.4	132.5	133.4	135.3	136.4	137.9	138.6	140.5	142.5	1.4	4.5
Manufacturing	129.7	130.4	131.4	132.2	133.2	134.6	135.6	137.8	139.2	1.0	4.5
Nonmanufacturing	130.4	131.6	132.5	134.3	135.3	136.8	137.5	139.4	141.5	1.5	4.6
Workers, by region¹											
Northeast	133.3	134.2	135.2	137.4	138.6	140.3	141.9	143.7	145.9	1.5	5.3
South	129.6	130.7	131.4	132.1	133.2	134.2	135.4	137.1	139.3	1.6	4.6
Midwest (formerly North Central)	126.2	127.3	128.1	129.1	130.2	131.2	131.7	134.4	135.5	.8	4.1
West	131.6	132.1	132.8	134.1	134.2	135.8	136.3	138.3	139.5	.9	3.9
Workers, by area size¹											
Metropolitan areas	130.5	131.4	132.2	133.5	134.4	135.8	136.7	138.9	140.5	1.2	4.5
Other areas	126.4	127.2	127.9	129.0	130.2	131.3	132.0	133.6	135.5	1.4	4.1
WAGES AND SALARIES											
Workers, by bargaining status¹											
Union	126.1	126.9	127.2	127.7	128.3	129.1	130.5	131.0	132.0	.8	2.9
Goods-producing	124.1	124.5	124.8	125.0	125.8	126.5	128.5	128.7	129.7	.8	3.1
Service-producing	129.3	130.5	130.9	131.7	132.2	132.9	133.6	134.4	135.4	.7	2.4
Manufacturing	124.6	125.0	125.5	125.6	126.2	127.0	129.3	129.6	130.4	.6	3.3
Nonmanufacturing	127.4	128.5	128.7	129.5	130.1	130.8	131.5	132.1	133.3	.9	2.5
Nonunion	128.5	129.4	130.3	131.8	132.8	134.3	135.0	136.4	138.1	1.2	4.0
Goods-producing	126.1	127.0	127.8	128.8	129.6	131.1	132.1	133.6	135.0	1.0	4.2
Service-producing	129.9	130.8	131.7	133.6	134.6	136.2	136.7	138.0	140.0	1.4	4.0
Manufacturing	127.7	128.5	129.5	130.6	131.5	133.0	133.9	135.5	136.7	.9	4.0
Nonmanufacturing	128.9	129.8	130.6	132.4	133.4	134.9	135.4	136.8	138.8	1.5	4.0
Workers, by region¹											
Northeast	131.3	132.3	133.1	135.4	136.6	138.3	139.7	140.9	142.9	1.4	4.6
South	127.8	128.8	129.4	130.1	131.1	132.1	133.0	134.0	136.1	1.6	3.8
Midwest (formerly North Central)	124.4	125.3	126.2	127.4	128.5	129.6	129.9	131.3	132.1	.6	2.8
West	128.9	129.3	130.1	131.2	131.1	133.1	133.5	134.9	136.0	.8	3.7
Workers, by area size¹											
Metropolitan areas	128.5	129.4	130.2	131.6	132.4	133.7	134.6	135.8	137.3	1.1	3.7
Other areas	124.5	125.0	125.6	126.6	127.8	129.1	129.8	130.9	133.0	1.6	4.1

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

Monthly Labor Review Technical Note, "Estimation procedures for the Employment Cost Index," May 1982.

25. Specified compensation and wage adjustments from contract settlements, and effective wage adjustments, private industry collective bargaining situations covering 1,000 workers or more (in percent)

Measure	Annual average		Quarterly average							
	1986	1987	1986		1987				1988	
			III	IV	I	II	III	IV	IP	IIP
Specified adjustments:										
Total compensation ¹ adjustments, ² settlements covering 5,000 workers or more:										
First year of contract	1.1	3.0	0.7	2.7	1.1	4.1	2.5	3.4	1.8	3.4
Annual rate over life of contract	1.6	2.6	1.2	2.4	2.1	3.9	2.1	2.4	1.8	2.4
Wage adjustments, settlements covering 1,000 workers or more:										
First year of contract	1.2	2.2	.8	2.0	.8	2.6	2.1	2.4	2.2	2.7
Annual rate over life of contract	1.8	2.1	1.5	2.1	1.6	2.9	2.0	1.8	2.3	2.2
Effective adjustments:										
Total effective wage adjustment ³	2.3	3.1	.5	.5	.4	1.0	.9	.8	.4	.8
From settlements reached in period .....	.5	.7	.1	.2	(⁴)	.2	.2	.3	.1	.3
Deferred from settlements reached in earlier periods	1.7	1.8	.5	.2	.3	.7	.6	.3	.3	.5
From cost-of-living-adjustments clauses .....	.2	.5	(⁴)	.1	.1	.2	.1	.2	.1	.1

¹ Compensation includes wages, salaries, and employers' cost of employee benefits when contract is negotiated.

² Adjustments are the net result of increases, decreases, and no changes in compensation or wages.

³ Because of rounding, total may not equal sum of parts.

⁴ Between -0.05 and 0.05 percent.

^P = preliminary.

26. Average specified compensation and wage adjustments, major collective bargaining settlements in private industry situations covering 1,000 workers or more during 4-quarter periods (in percent)

Measure	Average for four quarters ending--							
	1986		1987				1988	
	III	IV	I	II	III	IV	IP	IIP
Specified total compensation adjustments, settlements covering 5,000 workers or more, all industries:								
First year of contract	0.9	1.1	1.2	1.8	2.7	3.0	3.1	3.1
Annual rate over life of contract	1.4	1.6	1.7	2.1	2.6	2.6	2.5	2.3
Specified wage adjustments, settlements covering 1,000 workers or more:								
All industries								
First year of contract	1.2	1.2	1.2	1.5	2.0	2.2	2.4	2.4
Contracts with COLA clauses	2.2	1.9	2.0	1.8	2.1	2.3	2.2	2.4
Contracts without COLA clauses .....	.8	.9	.8	1.3	2.0	2.1	2.5	2.5
Annual rate over life of contract	1.7	1.8	1.8	2.0	2.2	2.1	2.2	2.0
Contracts with COLA clauses	2.0	1.7	1.8	1.7	1.7	1.5	1.4	1.5
Contracts without COLA clauses	1.6	1.8	1.8	2.1	2.5	2.5	2.7	2.6
Manufacturing								
First year of contract	-1.0	-1.2	-1.5	-8	1.1	2.1	2.4	2.5
Contracts with COLA clauses	1.1	1.3	1.3	1.3	2.1	2.4	2.4	2.5
Contracts without COLA clauses	-2.0	-2.8	-3.5	-2.7	-1	1.3	2.4	2.6
Annual rate over life of contract .....	.3	.2	(²)	.3	1.0	1.3	1.5	1.6
Contracts with COLA clauses	1.1	.9	.8	.8	1.0	1.0	1.0	1.3
Contracts without COLA clauses	-1	-2	-6	-2	1.2	2.1	2.7	2.6
Nonmanufacturing								
First year of contract	2.1	2.0	2.2	2.3	2.4	2.3	2.3	2.3
Contracts with COLA clauses	2.7	2.1	2.2	2.1	2.1	1.9	1.6	2.2
Contracts without COLA clauses	1.9	2.0	2.1	2.3	2.6	2.4	2.5	2.4
Annual rate over life of contract	2.3	2.3	2.4	2.6	2.8	2.7	2.7	2.3
Contracts with COLA clauses	2.5	2.1	2.2	2.2	2.4	2.7	2.4	1.8
Contracts without COLA clauses	2.2	2.4	2.5	2.7	2.9	2.7	2.7	2.6
Construction								
First year of contract	2.3	2.2	2.4	2.7	3.0	2.9	2.9	2.5
Contracts with COLA clauses	1.4	1.4	1.6	3.7	(¹)	(¹)	(¹)	(¹)
Contracts without COLA clauses	2.4	2.3	2.4	2.7	(¹)	(¹)	(¹)	(¹)
Annual rate over life of contract	2.6	2.5	2.5	2.9	3.2	3.1	3.1	2.7
Contracts with COLA clauses	1.6	1.6	1.4	3.8	(¹)	(¹)	(¹)	(¹)
Contracts without COLA clauses	2.6	2.5	2.6	2.9	(¹)	(¹)	(¹)	(¹)

¹ Data do not meet publication standards.

² Between -0.05 and 0.05 percent.

^P = preliminary.

27. Average effective wage adjustments, private industry collective bargaining situations covering 1,000 workers or more during 4-quarter periods (in percent)

Effective wage adjustment	Average for four quarters ending--						
	1986	1987				1988	
		IV	I	II	III	IV	I ^P	II^{P}
For all workers:¹							
Total	2.3	2.0	2.2	2.6	3.1	3.2	3.0
From settlements reached in period .....	.5	.3	.3	.4	.7	.8	.9
Deferred from settlements reached in earlier period	1.7	1.5	1.6	1.7	1.8	1.8	1.6
From cost-of-living-adjustments clauses .....	.2	.1	.3	.4	.5	.5	.5
For workers receiving changes:							
Total	2.8	2.4	2.8	3.2	3.6	3.8	3.7
From settlements reached in period	1.6	1.1	.9	1.8	2.9	2.9	2.9
Deferred from settlements reached in earlier period	3.9	3.7	3.5	3.3	3.3	3.3	3.2
From cost-of-living-adjustments clauses	1.0	.6	1.8	2.3	2.6	2.7	2.3

¹ Because of rounding, total may not equal sum of parts.

^P = preliminary.

28. Specified compensation and wage adjustments from contract settlements, and effective wage adjustments, State and local government collective bargaining situations covering 1,000 workers or more (in percent)

Measure	Annual average		First 6 months
	1986	1987	1988
Specified adjustments:			
Total compensation ¹ adjustments, ² settlements covering 5,000 workers or more:			
First year of contract	6.2	4.9	6.3
Annual rate over life of contract	6.0	4.8	5.5
Wage adjustments, settlements covering 1,000 workers or more:			
First year of contract	5.7	4.9	5.4
Annual rate over life of contract	5.7	5.1	5.1
Effective adjustments:			
Total effective wage adjustment ³	5.5	4.9	.9
From settlements reached in period	2.4	2.7	.4
Deferred from settlements reached in earlier periods	3.0	2.2	.5
From cost-of-living-adjustment clauses	(⁴)	(⁴)	(⁴)

¹ Compensation includes wages, salaries, and employers' cost of employee benefits when contract is negotiated.

² Adjustments are the net result of increases, decreases, and no changes in compensation or wages.

³ Because of rounding, total may not equal sum of parts.

⁴ Less than 0.05 percent.

29. Work stoppages involving 1,000 workers or more

Measure	Annual totals		1987						1988 ^P						
	1986	1987	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July ^P
Number of stoppages:															
Beginning in period	69	46	6	3	7	1	6	0	3	5	1	0	3	3	4
In effect during period	72	51	14	11	15	12	11	5	6	8	6	6	8	10	12
Workers involved:															
Beginning in period (in thousands)	533.0	174.4	14.1	18.4	45.9	1.3	11.8	.0	7.2	17.5	6.7	.0	10.3	7.8	24.6
In effect during period (in thousands)	899.5	377.7	31.1	36.0	71.9	53.7	22.2	8.9	10.8	21.1	24.2	14.9	18.2	20.0	36.4
Days idle:															
Number (in thousands)	11,861.0	4,455.6	457.8	361.4	1,143.1	353.3	222.9	159.4	36.6	337.0	203.6	207.9	271.4	264.5	605.0
Percent of estimated working time ² .....	.05	.02	.02	.02	.05	.02	.01	.01	.01	.01	.01	.01	.01	.01	.02

¹ Agricultural and government employees are included in the total employed and total working time; private household, forestry, and fishery employees are excluded. An explanation of the measurement of idleness as a percentage of the total time worked is found

in "'Total economy' measure of strike idleness," *Monthly Labor Review*, October 1968, pp. 54-56.

^P = preliminary

30. Consumer Price Indexes for All Urban Consumers and for Urban Wage Earners and Clerical Workers: U.S. city average, by expenditure category and commodity or service group

(1982-84=100, unless otherwise indicated)

Series	Annual average		1987						1988						
	1986	1987	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
CONSUMER PRICE INDEX FOR ALL URBAN CONSUMERS:															
All items	109.6	113.6	113.8	114.4	115.0	115.3	115.4	115.4	115.7	116.0	116.5	117.1	117.5	118.0	118.5
All items (1967=100)	328.4	340.4	340.8	342.7	344.4	345.3	345.8	345.7	346.7	347.4	349.0	350.8	352.0	353.5	354.9
Food and beverages	109.1	113.5	113.7	113.8	114.2	114.3	114.3	114.8	115.7	115.8	116.0	116.7	117.1	117.6	118.8
Food	109.0	113.5	113.7	113.8	114.1	114.3	114.2	114.7	115.7	115.9	116.6	117.0	117.6	118.8	
Food at home	107.3	111.9	112.1	112.1	112.4	112.4	112.1	112.8	114.1	113.9	114.6	115.1	115.8	117.3	
Cereals and bakery products	110.9	114.8	115.2	115.3	115.4	115.6	116.2	116.8	118.1	118.7	118.9	119.8	120.3	120.8	122.1
Meats, poultry, fish, and eggs	104.5	110.5	111.4	111.9	112.7	112.0	111.2	110.3	111.0	110.6	111.2	111.5	112.1	114.6	116.5
Dairy products	103.3	105.9	105.3	105.7	106.4	106.9	106.9	106.7	107.4	107.3	107.2	107.1	107.4	107.2	107.6
Fruits and vegetables	109.4	119.1	119.6	117.4	117.4	117.8	117.4	123.4	126.4	124.7	123.0	126.0	127.1	126.1	129.0
Other foods at home	109.4	110.5	110.0	110.4	110.3	110.6	110.2	110.0	111.3	111.8	112.0	112.1	112.3	112.4	113.1
Sugar and sweets	109.0	111.0	111.1	111.3	111.6	111.6	111.4	111.0	112.2	112.2	112.6	112.3	112.5	113.3	114.0
Fats and oils	106.5	108.1	108.4	108.3	107.8	107.4	108.0	107.7	108.5	109.5	110.3	110.3	111.2	111.5	112.6
Nonalcoholic beverages	110.4	107.5	105.9	105.9	105.8	106.7	105.0	104.8	106.9	107.7	107.7	107.8	107.5	107.1	107.2
Other prepared foods	109.2	113.8	114.1	114.8	114.6	114.7	115.1	115.0	115.9	116.1	116.3	116.6	117.0	117.1	118.3
Food away from home	112.5	117.0	117.2	117.5	118.0	118.3	118.6	118.9	119.3	119.7	120.2	120.7	121.0	121.5	122.1
Alcoholic beverages	111.1	114.1	114.4	114.7	114.9	115.2	115.4	115.4	115.8	116.8	117.4	118.0	118.2	118.7	119.2
Housing	110.9	114.2	114.7	115.4	115.6	115.5	115.5	115.6	116.2	116.6	117.0	117.3	117.7	118.6	119.1
Shelter	115.8	121.3	121.3	122.2	122.5	123.2	123.4	123.7	124.6	125.0	125.6	126.8	126.2	126.6	127.4
Renters' costs (12/82=100)	121.9	128.1	129.3	130.1	129.8	129.4	129.2	129.1	130.8	131.3	132.9	132.9	133.1	133.7	134.7
Rent, residential	118.3	123.1	123.0	123.8	124.4	124.8	124.8	125.6	126.0	126.3	126.4	126.6	126.9	127.3	127.8
Other renters' costs	118.6	127.4	132.8	133.3	130.5	127.7	126.7	124.1	129.4	130.4	136.6	136.0	135.7	137.0	139.2
Homeowners' costs (12/82=100)	119.4	124.8	124.4	125.4	126.0	127.1	127.4	128.0	128.5	129.0	129.2	129.4	129.9	130.4	131.0
Owners' equivalent rent (12/82=100)	119.4	124.8	124.4	125.4	126.0	127.2	127.5	128.0	128.6	129.0	129.2	129.5	130.0	130.4	131.1
Household insurance (12/82=100)	119.2	124.0	124.5	125.1	125.5	125.8	125.9	126.2	126.9	127.1	127.8	128.2	128.2	128.9	129.7
Maintenance and repairs	107.9	111.8	113.2	112.9	112.7	112.8	113.5	113.3	113.7	114.3	113.3	115.3	114.3	114.7	114.5
Maintenance and repair services	111.2	114.8	116.8	116.5	116.3	116.4	116.9	116.6	117.4	117.9	116.4	119.4	117.8	118.1	117.9
Maintenance and repair commodities	103.7	107.8	108.4	108.2	107.8	108.1	108.9	109.1	108.7	109.5	109.2	109.7	109.8	110.1	110.1
Fuel and other utilities	104.1	103.0	105.0	105.9	105.5	103.2	102.4	102.0	102.4	102.8	102.7	102.8	103.5	105.9	106.0
Fuels	99.2	97.3	100.4	101.4	101.0	96.9	95.5	95.1	95.6	96.0	95.8	95.7	96.5	100.8	100.8
Fuel oil, coal, and bottled gas	77.6	77.9	77.1	77.8	77.6	78.5	80.3	80.5	80.8	80.9	80.5	80.2	80.0	79.1	76.9
Gas (piped) and electricity	105.7	103.8	107.6	108.7	108.2	103.3	101.4	100.9	101.5	101.9	101.7	101.6	102.6	107.8	108.1
Other utilities and public services	117.9	120.1	120.5	121.1	120.8	121.2	121.3	120.9	121.3	121.8	121.7	122.3	122.6	122.3	122.4
Household furnishings and operations	105.2	107.1	107.2	107.3	107.5	107.4	107.4	107.3	107.5	107.7	108.3	109.1	109.3	109.6	109.8
Housefurnishings	102.2	103.6	103.6	103.8	103.9	103.6	103.6	103.3	103.5	103.7	104.7	104.9	104.9	105.3	105.5
Housekeeping supplies	108.2	111.5	111.7	111.5	111.8	112.3	112.5	113.1	113.2	112.9	113.8	114.1	114.7	115.2	115.4
Housekeeping services	108.5	110.6	110.8	110.9	111.0	111.2	111.2	111.4	111.5	111.6	111.7	114.7	114.8	114.8	115.0
Apparel and upkeep	105.9	110.6	107.3	109.4	113.3	115.4	115.4	112.7	110.4	110.2	114.3	117.0	116.3	114.6	112.7
Apparel commodities	104.2	108.9	105.3	107.6	111.8	114.0	114.0	111.0	108.6	108.3	112.7	115.5	114.8	112.9	110.8
Men's and boys' apparel	106.2	109.1	107.8	108.3	110.6	112.0	112.5	110.7	109.0	109.1	111.6	112.9	113.6	112.5	111.9
Women's and girls' apparel	104.0	110.4	104.2	108.4	115.3	118.3	117.7	112.6	108.2	107.8	115.3	119.6	117.3	114.1	109.8
Infants' and toddlers' apparel	111.8	112.1	107.7	109.0	112.1	116.2	116.7	114.5	113.6	111.4	114.0	117.1	117.7	116.5	116.2
Footwear	101.9	105.1	103.4	104.2	105.7	107.3	108.0	107.2	106.1	105.8	107.3	109.4	109.7	109.2	108.2
Other apparel commodities	101.7	108.0	108.2	109.3	110.3	110.7	110.7	111.3	112.9	113.1	113.6	114.6	114.9	114.6	116.5
Apparel services	115.1	119.6	120.0	119.8	119.9	120.8	121.1	121.4	121.6	122.0	122.2	122.6	122.8	123.1	123.4
Transportation	102.3	105.4	106.0	106.5	106.6	107.1	107.8	107.6	107.1	106.8	106.5	107.2	108.1	108.5	108.9
Private transportation	101.2	104.2	104.9	105.4	105.4	106.0	106.8	106.5	106.0	105.7	105.4	106.0	107.0	107.4	107.8
New vehicles	110.6	114.4	114.4	114.0	113.8	115.0	116.3	116.4	116.1	116.0	115.7	115.6	115.9	116.1	116.1
New cars	110.6	114.6	114.7	114.4	114.1	115.2	116.6	116.6	116.2	116.2	116.0	115.9	116.3	116.5	116.5
Used cars	108.8	113.1	115.4	115.5	116.0	116.2	116.5	116.3	116.0	116.0	116.1	116.6	117.0	117.6	117.9
Motor fuel	77.1	80.2	82.2	84.3	84.0	83.2	83.2	82.0	79.7	78.3	77.5	79.4	81.4	81.4	82.3
Gasoline	77.0	80.1	82.1	84.3	84.0	83.1	83.1	81.8	79.5	78.1	77.3	79.2	81.3	81.3	82.0
Maintenance and repair	110.3	114.8	114.5	115.1	115.7	116.1	116.5	116.9	117.2	117.7	118.5	118.8	119.3	119.7	120.3
Other private transportation	115.1	120.8	120.8	120.7	121.1	122.8	123.8	123.8	124.7	125.0	124.9	125.0	126.3	127.2	127.5
Other private transportation commodities	96.3	96.9	96.3	96.8	97.6	98.0	97.6	97.5	98.2	98.1	98.3	98.2	98.9	98.8	98.2
Other private transportation services	118.8	125.6	125.7	125.5	125.8	127.8	129.2	129.2	130.1	130.6	130.3	130.5	132.0	133.1	133.7
Public transportation	117.0	121.1	120.2	121.5	122.1	121.2	122.0	122.1	121.8	120.8	121.4	122.4	122.4	123.2	123.7
Medical care	122.0	130.1	130.7	131.2	131.7	132.3	132.8	133.1	134.4	135.5	136.3	136.9	137.5	138.2	139.3
Medical care commodities	122.8	131.0	131.6	132.2	132.7	133.5	134.2	134.9	135.4	136.1	137.0	138.1	139.0	139.4	140.5
Medical care services	121.9	130.0	130.4	131.0	131.5	132.0	132.5	132.7	134.1	135.3	136.1	136.6	137.2	137.9	139.0
Professional services	120.8	128.8	129.5	130.0	130.7	131.2	131.5	131.8	133.2	134.5	135.4	136.0	136.4	137.5	138.4
Hospital and related services	123.1	131.6	132.0	133.0	133.3	134.2	135.4	135.9	137.6	139.0	140.0	140.7	141.8	142.1	143.5
Entertainment	111.6	115.3	115.4	115.6	116.1	116.9	117.3	117.4	118.1	118.3	119.0	119.6	119.7	120.1	120.5
Entertainment commodities	107.9	110.5	110.7	110.6	110.7	111.2	112.2	112.6	112.9	112.9	113.4	114.2	114.5	114.8	115.3
Entertainment services	116.8	122.0	122.0	122.5	123.5	124.5	124.3	124.3	125.4	125.7	126.5	127.0	126.9	127.3	127.7
Other goods and services	121.4	128.5	128.0	128.5	131.1	131.6	131.8	132.1	133.4	134.2	134.6	134.8	135.1	135.5	136.5
Tobacco products	124														

30. Continued— Consumer Price Indexes for All Urban Consumers and for Urban Wage Earners and Clerical Workers: U.S. city average, by expenditure category and commodity or service group

(1982-84=100, unless otherwise indicated)

Series	Annual average		1987						1988						
	1986	1987	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
All items	109.6	113.6	113.8	114.4	115.0	115.3	115.4	115.4	115.7	116.0	116.5	117.1	117.5	118.0	118.5
Commodities	104.4	107.7	107.6	108.2	108.9	109.3	109.5	109.3	109.2	109.1	109.8	110.7	111.1	111.1	111.5
Food and beverages	109.1	113.5	113.7	113.8	114.2	114.3	114.3	114.8	115.7	115.8	116.0	116.7	117.1	117.6	118.8
Commodities less food and beverages	101.4	104.0	103.8	104.6	105.5	106.1	106.5	105.7	105.1	105.0	105.9	106.9	107.2	107.1	107.0
Nondurables less food and beverages	97.8	101.1	100.6	102.0	103.5	104.2	104.3	103.1	102.1	101.9	103.4	105.0	105.4	104.9	104.7
Apparel commodities	104.2	108.9	105.3	107.6	111.8	114.0	114.0	111.0	108.6	108.3	112.7	115.5	114.8	112.9	110.8
Nondurables less food, beverages, and apparel	95.9	99.5	100.5	101.5	101.6	101.5	101.8	101.5	101.2	101.0	101.0	102.0	103.0	103.2	104.0
Durables	106.6	108.2	108.4	108.3	108.3	108.8	109.6	109.5	109.4	109.4	109.5	109.7	109.9	110.2	110.3
Services	115.4	120.2	120.5	121.2	121.7	121.9	122.0	122.2	122.9	123.4	123.8	124.1	124.6	125.5	126.1
Rent of shelter (12/82=100)	120.2	125.9	126.0	126.9	127.2	128.0	128.1	128.5	129.4	129.8	130.4	130.6	131.0	131.5	132.3
Household services less rent of shelter (12/82=100)	112.8	113.1	115.1	115.8	115.5	113.5	112.6	112.3	112.7	113.1	113.0	113.7	114.3	116.6	116.9
Transportation services	116.3	121.9	121.7	122.0	122.5	123.4	124.5	124.6	125.1	125.2	125.4	125.8	126.7	127.6	128.1
Medical care services	121.9	130.0	130.4	131.0	131.5	132.0	132.5	132.7	134.1	135.3	136.1	136.6	137.2	137.9	139.0
Other services	119.4	125.7	125.1	125.6	127.9	128.7	128.8	129.0	129.6	130.2	130.7	131.0	131.1	131.6	131.9
Special indexes:															
All items less food	109.8	113.6	113.8	114.5	115.1	115.5	115.7	115.5	115.7	116.0	116.6	117.2	117.6	118.1	118.4
All items less shelter	108.0	111.6	111.8	112.3	113.0	113.2	113.3	113.2	113.3	113.5	114.0	114.7	115.2	115.7	116.1
All items less homeowners' costs (12/82=100)	111.2	115.1	115.3	115.9	116.5	116.6	116.8	116.6	116.9	117.1	117.7	118.4	118.8	119.3	119.8
All items less medical care	108.8	112.6	112.7	113.3	113.9	114.2	114.4	114.3	114.6	114.8	115.3	115.9	116.3	116.8	117.2
Commodities less food	101.7	104.3	104.1	104.9	105.7	106.3	106.7	106.0	105.5	105.4	106.3	107.3	107.6	107.4	107.4
Nondurables less food	98.5	101.8	101.3	102.6	104.0	104.6	104.8	103.7	102.8	102.7	104.1	105.6	106.0	105.5	105.4
Nondurables less food and apparel	96.9	100.3	101.1	102.0	102.2	102.1	102.4	102.1	101.9	101.9	101.9	102.9	103.8	104.0	104.8
Nondurables	103.5	107.5	107.3	108.1	109.0	109.4	109.5	109.1	109.1	109.0	109.8	111.0	111.4	111.4	111.9
Services less rent of shelter (12/82=100)	118.7	123.1	123.7	124.2	124.9	124.6	124.6	124.6	125.3	125.8	126.0	126.5	127.1	128.4	128.9
Services less medical care	114.6	119.1	119.4	120.1	120.6	120.8	120.8	121.0	121.7	122.1	122.4	122.8	123.2	124.1	124.7
Energy	88.2	88.6	91.1	92.7	92.3	89.8	89.0	88.3	87.4	87.0	86.5	87.3	88.7	91.0	91.4
All items less energy	112.6	117.2	117.1	117.6	118.3	118.9	119.2	119.2	119.7	120.0	120.6	121.2	121.5	121.8	122.3
All items less food and energy	113.5	118.2	118.0	118.6	119.4	120.1	120.5	120.4	120.8	121.1	121.9	122.4	122.7	123.0	123.3
Commodities less food and energy	108.6	111.8	111.2	111.8	112.9	113.7	114.1	113.5	113.2	113.3	114.6	115.5	115.4	115.2	115.2
Energy commodities	77.2	80.2	81.8	83.8	83.5	82.9	83.1	82.0	80.0	78.8	78.0	79.7	81.4	81.4	81.9
Services less energy	116.5	122.0	122.0	122.7	123.2	123.9	124.2	124.4	125.2	125.7	126.1	126.5	126.9	127.4	128.0
Purchasing power of the consumer dollar:															
1982-84=\$1.00	91.3	88.0	87.8	87.3	86.9	86.7	86.5	86.6	86.4	86.2	85.8	85.4	85.1	84.7	84.4
1967=\$1.00	30.5	29.4	29.3	29.2	29.0	29.0	28.9	28.9	28.8	28.8	28.7	28.5	28.4	28.3	28.2
CONSUMER PRICE INDEX FOR URBAN WAGE EARNERS AND CLERICAL WORKERS:															
All items	108.6	112.5	112.7	113.3	113.8	114.1	114.3	114.2	114.5	114.7	115.1	115.7	116.2	116.7	117.2
All items (1967=100)	323.4	335.0	335.6	337.4	339.1	340.0	340.4	340.2	341.0	341.6	343.0	344.7	346.1	347.6	349.1
Food and beverages	108.9	113.3	113.5	113.6	114.0	114.1	114.1	114.5	115.4	115.5	115.7	116.3	116.8	117.4	118.5
Food	108.8	113.3	113.5	113.6	114.0	114.1	114.0	114.5	115.4	115.5	115.6	116.2	116.7	117.3	118.5
Food at home	107.1	111.7	111.9	111.9	112.2	112.2	111.9	112.5	113.7	113.5	113.5	114.2	114.7	115.5	116.9
Cereals and bakery products	110.9	114.8	115.2	115.3	115.4	115.7	116.2	116.9	118.1	118.8	118.9	119.9	120.4	120.8	122.1
Meats, poultry, fish, and eggs	104.4	110.4	111.3	111.8	112.7	112.0	111.2	110.1	110.8	110.5	111.1	111.4	112.0	114.5	116.3
Dairy products	103.2	105.7	105.1	105.5	106.2	106.7	106.7	106.4	107.1	107.0	106.9	106.9	107.2	107.0	107.3
Fruits and vegetables	109.4	118.8	119.6	117.3	117.1	117.5	117.4	123.0	125.2	124.0	122.2	126.2	126.4	125.5	128.4
Other foods at home	109.1	110.4	109.9	110.3	110.2	110.5	110.1	109.8	111.3	111.7	111.9	112.0	112.2	112.3	113.0
Sugar and sweets	109.0	110.9	111.0	111.3	111.5	111.6	111.2	110.9	112.1	112.1	112.4	112.2	112.4	113.1	113.9
Fats and oils	106.4	107.9	108.2	108.1	107.6	107.3	107.9	107.6	108.4	109.5	110.3	110.2	111.0	111.4	112.5
Nonalcoholic beverages	110.0	107.5	105.9	106.0	106.0	106.9	105.2	104.9	107.2	107.9	108.0	107.9	107.7	107.3	107.4
Other prepared foods	109.0	113.6	113.9	114.6	114.4	114.5	114.9	114.8	115.7	115.8	116.0	116.4	116.8	116.9	118.1
Food away from home	112.5	116.9	117.0	117.4	117.9	118.2	118.5	118.8	119.1	119.6	120.0	120.6	120.9	121.4	122.0
Alcoholic beverages	111.1	113.9	114.2	114.4	114.6	114.9	115.2	115.1	115.6	116.6	117.3	117.9	118.0	118.4	118.9
Housing	109.7	112.8	113.2	114.0	114.1	114.0	113.9	114.1	114.6	115.0	115.4	115.6	116.0	116.9	117.4
Shelter	113.5	118.8	118.8	119.6	120.0	120.7	120.9	121.2	121.9	122.4	122.9	123.0	123.4	123.9	124.5
Renters' costs (12/84=100)	109.5	114.6	115.3	116.0	116.2	116.0	115.9	115.9	116.9	117.3	118.4	118.4	118.6	119.3	120.0
Rent, residential	118.2	122.9	122.8	123.6	124.2	124.5	124.6	125.3	125.7	126.1	126.2	126.3	126.6	126.9	127.5
Other renters' costs	119.1	128.2	133.6	134.2	132.2	129.3	128.1	124.5	129.2	130.0	136.9	136.1	136.2	138.8	140.8
Homeowners' costs (12/84=100)	108.8	113.8	113.4	114.3	114.8	115.9	116.2	116.6	117.1	117.6	117.8	118.0	118.5	118.8	119.5
Owners' equivalent rent (12/84=100)	108.8	113.7	113.4	114.3	114.8	115.9	116.2	116.6	117.1	117.6	117.8	118.0	118.5	118.8	119.5
Household insurance (12/84=100)	109.4	114.1	114.6	115.1	115.5	115.8	115.9	116.1	116.7	116.7	117.2	117.3	117.3	118.0	118.6
Maintenance and repairs	107.7	111.3	112.6	112.4	112.1	112.2	112.7	112.5	113.0	113.6	112.8	114.7	113.7	113.9	113.8
Maintenance and repair services	110.5	114.7	116.9	116.6	116.4	116.0	116.5	115.9	117.1	117.6	116.6	119.8	117.6	117.9	117.6
Maintenance and repair commodities	103.1	106.0	106.3	106.2	105.8	106.3	106.9	107.1	106.9	107.5	107.1	107.5	107.9	107.9	108.0
Fuel and other utilities	103.9	102.7	104.7	105.6	105.2	102.8	102.0	101.7	102.0	102.5	102.3	102.5	103.0	105.5	105.6
Fuels	99.2	97.1	100.2	101.3	100.8	96.5	95.1	94.8	95.2	95.6	95.4	95.4	96.1	100.5	100.5
Fuel oil, coal, and bottled gas	77.8	77.6	76.9	77.5	77.3	78.2	80.1	80.2	80.4	80.6	80.2	79.9	79.7	78.9	76.7
Gas (pipelined) and electricity	105.7	103.6	107.4	108.6	108.1	103.0	101.1	100.7	101.2	101.6	101.4	101.4	102.2	107.5	10

30. Continued— Consumer Price Indexes for All Urban Consumers and for Urban Wage Earners and Clerical Workers: U.S. city average, by expenditure category and commodity or service group

(1982-84=100, unless otherwise indicated)

Series	Annual average		1987						1988						
	1986	1987	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
Apparel commodities	104.2	108.8	105.3	107.4	111.5	113.9	113.9	111.1	108.6	108.3	112.4	114.9	114.3	112.6	110.6
Men's and boys' apparel	105.9	108.5	106.9	107.7	109.8	111.5	112.0	110.4	108.6	108.7	111.1	112.2	113.0	112.1	111.5
Women's and girls' apparel	103.8	110.3	104.4	108.2	115.2	118.2	117.6	112.6	108.2	107.9	114.9	118.8	116.7	113.5	109.5
Infants' and toddlers' apparel	113.5	114.0	109.7	110.6	113.9	118.6	118.7	116.4	115.2	113.3	116.0	119.1	119.7	118.8	118.6
Footwear	102.1	105.5	103.9	104.7	106.0	107.9	108.6	108.0	106.8	106.4	107.7	109.6	109.9	109.6	108.7
Other apparel commodities	101.6	107.4	107.3	108.2	109.8	110.4	110.5	110.6	112.2	112.0	112.8	113.9	114.0	113.5	115.2
Apparel services	115.0	119.2	119.5	119.3	119.4	120.3	120.7	120.9	121.1	121.5	121.6	122.0	122.2	122.4	122.7
Transportation	101.7	105.1	105.8	106.3	106.4	106.9	107.6	107.3	106.8	106.4	106.2	106.8	107.8	108.2	108.6
Private transportation	100.9	104.1	104.9	105.5	105.5	106.1	106.7	106.4	105.9	105.6	105.3	105.9	107.0	107.3	107.7
New vehicles	110.4	114.0	113.9	113.5	113.3	114.5	115.9	116.1	115.8	115.7	115.3	115.3	115.6	115.8	115.8
New cars	110.4	114.3	114.4	114.0	113.8	114.9	116.2	116.3	115.9	116.0	115.7	115.7	116.0	116.2	116.2
Used cars	108.8	113.1	115.4	115.5	115.9	116.1	116.4	116.2	115.9	116.0	116.1	116.6	116.9	117.5	117.8
Motor fuel	77.1	80.3	82.3	84.5	84.1	83.3	83.3	82.0	79.7	78.3	77.5	79.4	81.4	81.4	82.3
Gasoline	76.9	80.2	82.2	84.4	84.1	83.2	83.2	81.9	79.5	78.1	77.3	79.2	81.3	81.3	82.3
Maintenance and repair	110.6	115.1	114.9	115.4	116.0	116.3	116.7	117.0	117.4	117.8	118.6	118.9	119.4	119.8	120.1
Other private transportation	113.8	119.0	118.9	118.7	119.1	121.0	122.0	122.0	122.9	123.2	123.1	123.0	124.3	125.2	125.4
Other private transportation commodities	96.3	96.7	96.3	96.7	97.3	97.7	97.2	97.4	98.1	98.0	98.1	97.9	98.6	98.5	97.9
Other private transportation services	117.1	123.4	123.4	123.1	123.4	125.8	127.1	127.1	128.0	128.5	128.2	128.3	129.7	130.8	131.3
Public transportation	116.8	120.4	119.7	120.8	121.4	120.7	121.2	121.3	121.2	120.4	120.8	121.7	121.8	122.3	123.0
Medical care	122.0	130.2	130.8	131.4	132.0	132.6	133.0	133.4	134.6	135.8	136.5	137.1	137.8	138.5	139.6
Medical care commodities	122.2	130.2	130.9	131.3	131.9	132.6	133.4	134.1	134.7	135.4	136.1	137.2	138.0	138.3	139.4
Medical care services	122.0	130.3	130.8	131.4	132.0	132.6	133.0	133.2	134.6	135.8	136.6	137.1	137.7	138.5	139.6
Professional services	120.9	129.0	129.6	130.2	130.9	131.4	131.7	132.0	133.4	134.7	135.5	136.1	136.6	137.7	138.5
Hospital and related services	122.6	131.1	131.4	132.4	132.8	133.7	134.9	135.4	136.9	138.4	139.3	140.1	141.2	141.5	143.8
Entertainment	111.0	114.8	115.0	115.1	115.6	116.3	116.7	116.9	117.4	117.6	118.2	118.9	119.0	119.4	119.8
Entertainment commodities	107.8	110.6	110.9	110.8	110.9	111.3	112.2	112.6	112.8	112.9	113.5	114.2	114.6	114.9	115.4
Entertainment services	116.5	121.8	121.8	122.2	123.2	124.3	124.1	124.0	124.9	125.2	126.0	126.5	126.3	126.8	127.2
Other goods and services	120.9	127.8	127.5	128.0	130.3	130.8	131.0	131.3	132.7	133.6	134.0	134.2	134.5	135.0	136.3
Tobacco products	124.8	137.7	135.1	135.4	136.0	136.5	136.7	137.2	141.0	142.3	143.0	143.1	143.4	143.8	147.9
Personal care	111.9	115.0	115.1	115.4	115.8	116.1	116.2	116.4	117.1	117.5	117.7	118.1	118.5	118.8	119.1
Toilet goods and personal care appliances	111.2	113.9	114.1	114.3	114.6	115.0	115.0	115.1	116.0	116.2	116.5	117.0	117.1	117.4	117.8
Personal care services	112.6	116.1	116.2	116.7	117.1	117.3	117.4	117.8	118.3	118.9	119.0	119.3	119.9	120.2	120.4
Personal and educational expenses	128.5	138.2	136.7	137.4	141.8	142.4	142.8	143.0	143.4	144.3	144.6	144.7	145.2	145.8	146.0
School books and supplies	127.8	137.9	136.4	136.6	140.7	141.8	141.8	141.9	143.9	145.3	145.2	145.4	145.4	145.6	145.6
Personal and educational services	128.6	138.4	137.0	137.7	142.1	142.7	143.1	143.3	143.6	144.5	144.8	144.9	145.4	146.0	146.3
All items	108.6	112.5	112.7	113.3	113.8	114.1	114.3	114.2	114.5	114.7	115.1	115.7	116.2	116.7	117.2
Commodities	103.9	107.3	107.3	107.9	108.5	108.9	109.1	108.9	108.8	108.7	109.3	110.1	110.5	111.0	111.1
Food and beverages	108.9	113.3	113.5	113.6	114.0	114.1	114.1	114.5	115.4	115.5	115.7	116.3	116.8	117.4	118.5
Commodities less food and beverages	100.8	103.6	103.5	104.3	105.1	105.7	106.0	105.4	104.7	104.5	105.3	106.3	106.7	106.5	106.6
Nondurables less food and beverages	97.3	100.8	100.4	101.8	103.1	103.8	104.0	102.8	101.7	101.4	102.7	104.3	104.8	104.3	104.3
Apparel commodities	104.2	108.8	105.3	107.4	111.5	113.9	113.9	111.1	108.6	108.3	112.4	114.9	114.3	112.6	110.6
Nondurables less food, beverages, and apparel	95.3	99.2	100.3	101.4	101.5	101.3	101.6	101.2	100.8	100.5	100.4	101.6	102.6	102.8	103.7
Durables	104.9	106.6	106.9	106.8	106.9	107.4	108.0	108.0	107.9	107.9	108.0	108.1	108.4	108.7	108.8
Services	114.7	119.4	119.7	120.4	120.9	121.1	121.2	121.3	122.0	122.5	122.8	123.1	123.6	124.5	125.1
Rent of shelter (12/84=100)	109.0	114.0	114.0	114.9	115.2	115.9	116.1	116.4	117.1	117.5	118.0	118.2	118.5	119.0	119.6
Household services less rent of shelter (12/84=100)	103.9	104.0	105.9	106.6	106.3	104.2	103.4	103.1	103.5	103.9	103.8	104.4	104.9	107.2	107.4
Transportation services	115.4	120.8	120.6	120.7	121.2	122.5	123.5	123.6	124.1	124.4	124.5	124.8	125.8	126.6	127.1
Medical care services	122.0	130.3	130.8	131.4	132.0	132.6	133.0	133.2	134.6	135.8	136.6	137.1	137.7	138.5	139.6
Other services	118.7	124.7	124.1	124.6	126.9	127.7	127.8	127.9	128.5	129.0	129.5	129.8	130.0	130.5	130.8
Special indexes:															
All items less food	108.5	112.2	112.4	113.1	113.7	114.0	114.3	114.1	114.2	114.4	115.0	115.5	116.0	116.5	116.8
All items less shelter	107.4	111.0	111.2	111.8	112.4	112.6	112.7	112.5	112.7	112.8	113.2	113.9	114.4	115.0	115.4
All items less homeowners' costs (12/84=100)	102.8	106.4	106.6	107.1	107.7	107.8	108.0	107.8	108.0	108.1	108.6	109.2	109.7	110.2	110.7
All items less medical care	107.8	111.5	111.7	112.3	112.9	113.1	113.3	113.2	113.4	113.6	114.0	114.6	115.0	115.6	116.0
Commodities less food	101.2	103.9	103.8	104.6	105.4	105.9	106.3	105.6	105.0	104.9	105.7	106.6	107.0	106.9	107.0
Nondurables less food	98.0	101.4	101.1	102.4	103.6	104.2	104.4	103.3	102.4	102.2	103.4	104.9	105.4	105.0	105.1
Nondurables less food and apparel	96.4	100.0	101.0	101.9	102.0	101.9	102.2	101.8	101.5	101.4	101.4	102.5	103.4	103.6	104.5
Nondurables	103.3	107.2	107.2	107.9	108.8	109.2	109.2	108.8	108.8	108.7	109.4	110.5	111.0	111.1	111.6
Services less rent of shelter (12/84=100)	107.1	110.8	111.5	112.0	112.5	112.2	112.2	112.8	113.2	113.4	113.9	114.4	115.7	116.1	
Services less medical care	113.9	118.2	118.5	119.2	119.7	119.9	119.9	120.1	120.7	121.1	121.4	121.7	122.2	123.1	123.6
Energy	87.4	88.0	90.5	92.2	91.8	89.3	88.6	87.8	86.8	86.3	85.8	86.7	88.1	90.3	90.7
All items less energy	111.5	116.0	115.9	116.4	117.1	117.7	118.0	118.0	118.5	118.7	119.3	119.9	120.2	120.5	121.0
All items less food and energy	112.3	116.8	116.6	117.2	117.9	118.7	119.1	119.0	119.3	119.6	120.3	120.8	121.1	121.4	121.7
Commodities less food and energy	107.6	110.8	110.3	110.8	111.8	112.7	113.1	112.6	112.3	112.4	113.5	114.3	114.4	114.3	114.2
Energy commodities	77.2	80.3	82.0	84.1	83.8	83.0	83.2	82.1	80.0	78.7	77.9	79.7	81.5	81.4	82.1
Services less energy	115.8	121.2	121.1	121.8	122.4	123.1	123.4	123.7	124.3	124.8	125.2	125.6	126.0	126.5	127.1

31. Consumer Price Index: U.S. city average and available local area data: all items

(1982-84=100, unless otherwise indicated)

Area ¹	Pricing schedule ²	Other index base	All Urban Consumers								Urban Wage Earners					
			1987		1988				1987		1988					
			July	Aug.	Mar.	Apr.	May	June	July	July	Aug.	Mar.	Apr.	May	June	July
U.S. city average	M	-	113.8	114.4	116.5	117.1	117.5	118.0	118.5	112.7	113.3	115.1	115.7	116.2	116.7	117.2
Region and area size³																
Northeast urban	M		116.0	116.9	119.6	120.4	120.7	121.4	121.8	115.2	116.0	118.4	119.2	119.5	120.2	120.6
Size A - More than 1,200,000	M		116.9	117.9	120.4	121.3	121.6	122.0	122.6	115.4	116.3	118.5	119.3	119.5	120.0	120.6
Size B - 500,000 to 1,200,000	M		113.5	114.0	117.5	118.2	118.9	119.9	120.0	112.5	113.0	116.4	117.0	117.7	118.7	118.8
Size C - 50,000 to 500,000	M		115.0	115.9	117.2	118.2	118.7	119.8	120.0	117.3	118.2	119.8	120.7	121.2	122.2	122.4
North Central urban	M		112.3	113.1	114.3	114.9	115.5	116.0	116.6	110.4	111.2	112.3	113.0	113.6	114.1	114.7
Size A - More than 1,200,000	M		113.2	114.0	115.1	115.7	116.0	117.0	117.7	110.7	111.5	112.5	113.1	113.5	114.4	115.1
Size B - 360,000 to 1,200,000	M		111.5	112.6	114.2	115.0	115.7	115.6	115.8	109.0	110.1	111.8	112.6	113.4	113.3	113.5
Size C - 50,000 to 360,000	M		111.9	112.8	114.6	115.2	116.1	116.1	116.6	110.8	111.6	113.4	114.0	114.9	114.9	115.5
Size D - Nonmetropolitan (less than 50,000)	M		110.2	110.5	111.1	111.8	112.2	112.8	113.5	110.0	110.2	110.6	111.3	111.9	112.4	113.2
South urban	M		112.6	112.9	114.8	115.4	115.6	116.1	116.6	112.1	112.4	114.2	114.7	114.9	115.5	116.1
Size A - More than 1,200,000	M		113.5	114.0	115.5	116.0	116.7	117.2	117.7	112.8	113.2	114.7	115.1	115.7	116.4	116.9
Size B - 450,000 to 1,200,000	M		112.7	113.2	115.8	116.3	116.2	116.7	117.1	111.1	111.4	113.6	114.1	114.0	114.7	115.2
Size C - 50,000 to 450,000	M		112.1	112.3	114.0	114.5	114.6	114.9	115.6	112.5	112.7	114.3	114.9	115.0	115.3	116.1
Size D - Nonmetropolitan (less than 50,000)	M		110.8	110.9	112.7	113.6	113.7	114.5	115.0	111.6	111.7	113.4	114.2	114.4	115.3	115.8
West urban	M		114.3	114.8	117.5	117.9	118.5	118.7	119.2	113.2	113.7	116.2	116.6	117.2	117.4	117.8
Size A - More than 1,250,000	M		115.4	116.0	118.9	119.2	120.1	120.2	120.5	113.0	113.6	116.2	116.6	117.4	117.5	117.8
Size B - 330,000 to 1,250,000	M		113.1	113.3	115.9	-	-	-	-	113.4	113.6	116.0	-	-	-	-
Size C - 50,000 to 330,000	M		113.8	114.2	116.2	116.8	116.5	117.2	117.9	113.2	113.6	115.6	116.2	115.9	116.6	117.3
Size classes:																
A	M	12/86	103.2	103.8	105.7	106.3	106.7	107.2	107.6	103.3	103.9	105.6	106.1	106.6	107.1	107.6
B	M		112.7	113.2	115.8	116.4	116.7	117.2	117.5	111.5	112.0	114.3	114.9	115.3	115.8	116.1
C	M		112.9	113.4	115.1	115.8	116.1	116.5	117.1	113.2	113.7	115.4	116.1	116.4	116.8	117.4
D	M		111.3	111.4	113.5	114.1	114.3	115.0	115.4	111.6	111.8	113.7	114.3	114.6	115.3	115.7
Selected local areas																
Chicago, IL- Northwestern IN	M	-	115.9	116.7	116.9	117.1	117.0	118.9	119.8	112.4	113.2	113.2	113.3	113.3	115.2	116.2
Los Angeles-Long Beach, Anaheim, CA	M	-	116.5	117.3	120.6	121.1	122.0	122.0	122.1	113.8	114.6	117.5	118.0	118.9	118.9	119.0
New York, NY- Northeastern NJ	M	-	117.9	118.9	121.5	122.6	122.7	123.1	123.6	116.5	117.4	119.7	120.6	120.7	121.2	121.7
Philadelphia, PA-NJ	M	-	117.4	118.4	119.6	120.0	120.9	121.9	123.2	117.3	118.4	119.5	119.8	120.8	121.8	123.1
San Francisco- Oakland, CA	M	-	115.8	116.1	119.1	118.7	119.7	120.1	120.9	114.7	114.9	117.9	117.8	118.7	119.0	119.7
Baltimore, MD	1	-	115.0	-	117.7	-	117.8	-	119.9	114.7	-	117.3	-	117.4	-	119.7
Boston, MA	1	-	116.3	-	122.1	-	123.1	-	123.8	116.4	-	121.8	-	123.1	-	123.7
Cleveland, OH	1	-	112.8	-	115.1	-	116.6	-	117.6	108.1	-	110.2	-	111.7	-	112.6
Miami, FL	1	-	112.0	-	115.1	-	116.2	-	116.8	111.3	-	114.3	-	115.1	-	116.0
St. Louis, MO-IL	1	-	112.7	-	114.2	-	114.1	-	116.0	112.5	-	113.8	-	113.7	-	115.7
Washington, DC-MD-VA	1	-	116.2	-	119.2	-	120.1	-	120.7	115.3	-	118.5	-	119.3	-	119.9
Dallas-Ft. Worth, TX	2	-	-	113.5	-	115.4	-	115.6	-	-	113.3	-	114.8	-	115.4	-
Detroit, MI	2	-	-	112.2	-	114.4	-	115.4	-	-	109.6	-	111.9	-	112.7	-
Houston, TX	2	-	-	107.3	-	108.2	-	109.4	-	-	107.1	-	108.1	-	109.4	-
Pittsburgh, PA	2	-	-	112.0	-	114.5	-	114.3	-	-	107.7	-	110.1	-	110.0	-

¹ Area is the Consolidated Metropolitan Statistical Area (CMSA), exclusive of farms and military. Area definitions are those established by the Office of Management and Budget in 1983, except for Boston-Lawrence-Salem, MA-NH Area (excludes Monroe County); and Milwaukee, WI Area (includes only the Milwaukee MSA). Definitions do not include revisions made since 1983.

² Foods, fuels, and several other items priced every month in all areas; most other goods and services priced as indicated:
M - Every month.

1 - January, March, May, July, September, and November.

2 - February, April, June, August, October, and December.

³ Regions are defined as the four Census regions.

- Data not available.

NOTE: Local area CPI indexes are byproducts of the national CPI program. Because each local index is a small subset of the national index, it has a smaller sample size and is, therefore, subject to substantially more sampling and other measurement error than the national index. As a result, local area indexes show greater volatility than the national index, although their long-term trends are quite similar. Therefore, the Bureau of Labor Statistics strongly urges users to consider adopting the national average CPI for use in escalator clauses.

32. Annual data: Consumer Price Index, U.S. city average, all items and major groups

(1982-84 = 100)

Series	1979	1980	1981	1982	1983	1984	1985	1986	1987
Consumer Price Index for All Urban Consumers:									
All items:									
Index	72.6	82.4	90.9	96.5	99.6	103.9	107.6	109.6	113.6
Percent change	11.3	13.5	10.3	6.2	3.2	4.3	3.6	1.9	3.6
Food and beverages:									
Index	79.9	86.7	93.5	97.3	99.5	103.2	105.6	109.1	113.5
Percent change	10.7	8.5	7.8	4.1	2.3	3.7	2.3	3.3	4.0
Housing:									
Index	70.1	81.1	90.4	96.9	99.5	103.6	107.7	110.9	114.2
Percent change	12.3	15.7	11.5	7.2	2.7	4.1	4.0	3.0	3.0
Apparel and upkeep:									
Index	84.9	90.9	95.3	97.8	100.2	102.1	105.0	105.9	110.6
Percent change	4.3	7.1	4.8	2.6	2.5	1.9	2.8	.9	4.4
Transportation:									
Index	70.5	83.1	93.2	97.0	99.3	103.7	106.4	102.3	105.4
Percent change	14.3	17.9	12.2	4.1	2.4	4.4	2.6	-3.9	3.0
Medical care:									
Index	67.5	74.9	82.9	92.5	100.6	106.8	113.5	122.0	130.1
Percent change	9.2	11.0	10.7	11.6	8.8	6.2	6.3	7.5	6.6
Entertainment:									
Index	76.7	83.6	90.1	96.0	100.1	103.8	107.9	111.6	115.3
Percent change	6.7	9.0	7.8	6.5	4.3	3.7	3.9	3.4	3.3
Other goods and services:									
Index	68.9	75.2	82.6	91.1	101.1	107.9	114.5	121.4	128.5
Percent change	7.2	9.1	9.8	10.3	11.0	6.7	6.1	6.0	5.8
Consumer Price Index for Urban Wage Earners and Clerical Workers:									
All items:									
Index	73.1	82.9	91.4	96.9	99.8	103.3	106.9	108.6	112.5
Percent change	11.4	13.4	10.3	6.0	3.0	3.5	3.5	1.6	3.6

33. Producer Price Indexes, by stage of processing

(1982 = 100)

Grouping	Annual average		1987					1988						
	1986	1987	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
Finished goods	103.2	105.4	105.9	105.7	106.2	106.3	105.8	106.3	106.1	106.3	106.9	107.5	107.9	108.5
Finished consumer goods	101.4	103.6	104.3	104.2	104.4	104.5	104.0	104.5	104.1	104.4	105.1	105.7	106.1	107.0
Finished consumer foods	107.3	109.5	109.5	110.5	109.7	109.8	108.9	110.5	109.4	110.1	110.2	111.3	112.5	113.7
Finished consumer goods excluding foods	98.5	100.7	101.8	101.1	101.9	101.9	101.6	101.5	101.5	101.5	102.5	102.9	103.0	103.7
Nondurable goods less food	93.3	94.9	96.6	96.1	95.8	95.9	95.9	95.5	95.5	95.6	96.9	97.4	97.3	98.1
Durable goods	108.9	111.5	110.9	110.0	113.4	113.0	112.2	112.6	112.8	112.6	112.8	112.9	113.3	113.7
Capital equipment	109.7	111.7	111.7	111.2	112.5	112.5	112.4	112.9	113.2	113.2	113.6	113.9	114.2	114.2
Intermediate materials, supplies, and components	99.1	101.5	102.5	102.7	103.1	103.4	103.6	104.2	104.3	104.7	105.5	106.2	107.4	108.2
Materials and components for manufacturing	102.2	105.3	105.8	106.3	107.2	107.5	108.1	109.5	109.9	110.5	111.5	112.2	113.0	113.9
Materials for food manufacturing	98.4	100.8	101.5	102.8	101.9	100.6	99.9	101.9	102.0	101.6	102.8	104.2	107.0	109.9
Materials for nondurable manufacturing	98.1	102.2	102.9	103.4	104.5	104.9	105.5	107.5	108.5	109.6	110.9	111.6	112.2	113.7
Materials for durable manufacturing	101.2	106.2	107.1	108.1	110.2	111.1	112.9	114.5	113.9	114.7	116.6	117.5	118.4	119.4
Components for manufacturing	107.5	108.8	108.8	109.0	109.3	109.5	109.8	110.5	110.8	111.1	111.4	111.7	112.3	112.4
Materials and components for construction	108.1	109.8	110.2	110.7	111.2	111.9	112.4	113.6	113.8	114.4	115.0	115.2	115.9	116.7
Processed fuels and lubricants	72.7	73.3	77.3	75.9	74.6	74.4	72.9	70.7	70.2	69.6	70.5	71.5	73.3	73.4
Containers	110.3	114.5	114.4	115.4	116.1	116.5	116.1	116.6	116.9	117.4	118.2	119.3	119.9	120.3
Supplies	105.6	107.7	107.8	108.2	108.8	109.5	109.9	110.5	110.6	111.1	111.7	112.3	114.0	115.2
Crude materials for further processing	87.7	93.7	96.5	95.7	95.3	94.7	94.4	93.7	94.7	94.1	95.7	97.1	98.2	97.0
Foodstuffs and feedstuffs	93.2	96.2	97.1	96.6	96.1	95.3	95.9	97.2	99.7	99.8	101.2	104.5	108.4	109.9
Crude nonfood materials	81.6	87.9	91.8	90.8	90.5	90.1	89.2	87.3	87.4	86.4	88.0	88.2	87.5	84.8
Special groupings														
Finished goods, excluding foods	101.9	104.0	104.7	104.2	105.1	105.1	104.9	104.9	105.0	105.1	105.8	106.2	106.4	106.8
Finished energy goods	63.0	61.8	64.9	63.4	62.4	62.5	61.4	59.2	58.5	58.2	60.9	61.5	60.8	60.7
Finished goods less energy	109.7	112.3	112.3	112.4	113.1	113.2	112.9	113.9	113.8	114.1	114.3	114.9	115.5	116.3
Finished consumer goods less energy	109.7	112.5	112.6	112.8	113.4	113.4	113.1	114.3	114.0	114.4	114.5	115.2	115.9	117.0
Finished goods less food and energy	110.6	113.3	113.4	113.1	114.5	114.5	114.5	115.2	115.5	115.7	115.9	116.2	116.5	117.2
Finished consumer goods less food and energy	111.1	114.2	114.3	114.1	115.6	115.6	115.7	116.5	116.8	117.1	117.2	117.5	117.9	118.9
Consumer nondurable goods less food and energy	113.1	116.3	116.9	117.3	117.4	117.6	118.4	119.5	119.9	120.4	120.5	120.9	121.3	122.8
Intermediate materials less foods and feeds	99.3	101.7	102.7	102.8	103.2	103.6	103.7	104.2	104.4	104.8	105.7	106.3	107.1	107.7
Intermediate foods and feeds	96.2	99.2	99.6	101.0	100.6	101.4	102.0	102.9	101.9	102.0	103.5	104.9	112.0	116.8
Intermediate energy goods	72.6	73.0	77.0	75.6	74.4	74.1	72.7	70.5	70.0	69.3	70.2	71.2	73.0	73.1
Intermediate goods less energy	104.5	107.3	107.7	108.3	109.1	109.5	110.1	111.2	111.4	112.1	112.8	113.5	114.5	115.5
Intermediate materials less foods and energy	104.9	107.8	108.2	108.7	109.6	110.1	110.6	111.8	112.2	112.9	113.7	114.3	114.9	115.7
Crude energy materials	71.8	75.0	78.9	76.7	75.4	74.7	73.6	70.8	70.4	68.7	70.5	71.4	70.7	66.9
Crude materials less energy	95.4	100.9	102.3	103.0	103.6	103.1	103.7	105.1	107.6	108.1	109.2	110.9	113.8	115.4
Crude nonfood materials less energy	103.1	115.7	118.7	122.9	126.4	127.1	127.3	129.2	131.6	133.4	133.6	131.1	131.0	132.8

34. Producer Price indexes, by durability of product

(1982 = 100)

Grouping	Annual average		1987					1988						
	1986	1987	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
Total durable goods	107.5	109.9	110.0	110.2	111.4	111.7	112.0	112.8	113.0	113.3	113.8	114.0	114.5	114.8
Total nondurable goods	94.8	97.5	99.0	98.8	98.5	98.6	98.3	98.5	98.6	98.8	99.8	100.8	101.9	102.5
Total manufactures	101.7	104.4	105.1	105.1	105.8	106.0	106.0	106.6	106.8	107.1	107.8	108.5	109.1	109.8
Durable	107.5	109.6	109.7	109.7	110.9	111.1	111.4	112.2	112.4	112.6	113.1	113.4	113.9	114.1
Nondurable	96.0	99.2	100.5	100.4	100.7	100.9	100.6	101.1	101.3	101.7	102.6	103.7	104.4	105.4
Total raw or slightly processed goods	92.3	94.2	96.2	95.9	94.9	94.7	94.5	94.0	94.1	93.8	94.9	95.6	97.7	97.4
Durable	107.8	122.6	125.7	130.9	137.3	138.0	138.3	139.9	144.6	146.2	146.6	142.9	144.0	149.2
Nondurable	91.5	92.9	94.7	94.3	92.9	92.6	92.4	91.9	91.8	91.4	92.5	93.4	95.5	94.9

35. Annual data: Producer Price Indexes, by stage of processing

(1982 = 100)

Index	1979	1980	1981	1982	1983	1984	1985	1986	1987
Finished goods:									
Total	77.6	88.0	96.1	100.0	101.6	103.7	104.7	103.2	105.4
Consumer goods	77.5	88.6	96.6	100.0	101.3	103.3	103.8	101.4	103.6
Capital equipment	77.5	85.8	94.6	100.0	102.8	105.2	107.5	109.7	111.7
Intermediate materials, supplies, and components:									
Total	78.4	90.3	98.6	100.0	100.6	103.1	102.7	99.1	101.5
Materials and components for manufacturing	80.9	91.7	98.7	100.0	101.2	104.1	103.3	102.2	105.3
Materials and components for construction	84.2	91.3	97.9	100.0	102.8	105.6	107.3	108.1	109.8
Processed fuels and lubricants	61.6	85.0	100.6	100.0	95.4	95.7	92.8	72.7	73.3
Containers	79.4	89.1	96.7	100.0	100.4	105.9	109.0	110.3	114.5
Supplies	80.2	89.9	96.9	100.0	101.8	104.1	104.4	105.6	107.7
Crude materials for further processing:									
Total	85.9	95.3	103.0	100.0	101.3	103.5	95.8	87.7	93.7
Foodstuffs and feedstuffs	100.0	104.6	103.9	100.0	101.8	104.7	94.8	93.2	96.2
Nonfood materials except fuel	69.6	84.6	101.8	100.0	100.7	102.2	96.9	81.6	87.9
Fuel	57.3	69.4	84.8	100.0	105.1	105.1	102.7	92.2	84.1

36. U.S. export price indexes by Standard International Trade Classification

(June 1977=100, unless otherwise indicated)

Category	1974 SITC	1985	1986				1987				1988	
		Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June
ALL COMMODITIES (9/83=100)		99.7	99.4	99.1	97.9	99.0	99.9	102.2	102.8	104.9	106.5	109.4
Food (3/83=100)	0	100.7	97.2	97.1	86.0	90.1	87.3	89.9	86.7	94.6	95.2	103.4
Meat (3/83=100)	01	103.6	102.5	105.2	111.3	114.5	115.0	121.2	118.8	116.8	122.8	131.8
Fish (3/83=100)	03	100.6	100.2	108.6	111.9	115.9	117.1	125.8	131.1	138.5	140.9	144.7
Grain and grain preparations (3/80=100)	04	98.8	91.7	89.0	66.3	72.5	68.3	71.0	67.8	77.4	79.8	87.2
Vegetables and fruit (3/83=100)	05	98.2	98.6	108.6	114.6	117.5	115.3	112.4	101.1	100.5	97.5	104.4
Feedstuffs for animals (3/83=100)	08	114.0	120.0	114.8	123.9	119.7	117.0	123.8	123.1	145.2	134.6	158.1
Misc. food products (3/83=100)	09	99.5	98.0	97.0	98.7	99.9	100.1	100.6	100.3	100.3	102.3	102.7
Beverages and tobacco (6/83=100)	1	99.4	96.6	97.4	97.3	102.6	102.6	105.0	105.5	107.0	109.6	110.6
Beverages (9/83=100)	11	-	-	-	-	-	-	-	-	-	-	-
Tobacco and tobacco products (6/83=100)	12	99.5	96.3	97.1	97.0	102.6	102.6	105.0	105.5	107.0	109.8	110.7
Crude materials (6/83=100)	2	98.1	101.4	102.2	99.6	102.4	105.7	114.5	118.7	125.2	130.0	139.7
Raw hides and skins (6/80=100)	21	110.0	108.7	117.1	108.3	115.9	131.9	149.6	147.7	157.1	171.4	164.2
Oilseeds and oleaginous fruit (9/77=100)	22	94.7	99.1	98.1	97.5	95.2	90.4	101.6	95.1	109.6	115.6	143.0
Crude rubber (including synthetic and reclaimed) (9/83=100)	23	99.7	99.7	99.9	99.6	98.9	99.9	101.0	102.8	105.3	104.5	106.1
Wood	24	101.9	101.5	101.2	102.9	107.9	111.2	116.2	141.7	146.0	150.2	149.5
Pulp and waste paper (6/83=100)	25	96.7	104.2	116.4	129.0	129.4	144.2	149.9	153.0	160.4	171.2	178.8
Textile fibers	26	96.4	100.2	98.0	73.0	90.9	97.8	112.4	116.5	111.6	107.5	109.8
Crude fertilizers and minerals	27	99.2	100.0	98.4	98.0	96.8	94.4	94.0	91.6	91.6	92.8	94.9
Metalliferous ores and metal scrap	28	94.8	100.3	98.0	100.4	96.8	98.8	107.0	117.4	125.9	131.8	146.0
Mineral fuels	3	97.0	83.6	76.8	77.4	77.8	81.3	82.8	84.6	82.5	79.3	82.1
Animal and vegetable oils, fats, and waxes	4	82.5	74.3	67.7	62.1	71.8	73.9	78.8	78.5	81.6	92.7	97.3
Fixed vegetable oils and fats (6/83=100)	42	80.3	71.3	70.6	60.2	64.6	67.3	71.9	71.2	75.4	85.7	93.7
Chemicals (3/83=100)	5	99.6	99.8	98.0	95.7	95.2	99.6	106.7	107.7	112.9	117.9	121.8
Organic chemicals (12/83=100)	51	99.2	98.5	93.1	91.6	92.4	101.9	118.4	116.1	123.5	135.1	145.1
Fertilizers, manufactured (3/83=100)	56	100.5	98.9	93.0	85.1	77.4	85.6	91.6	100.9	106.5	110.6	109.8
Intermediate manufactured products (9/81=100)	6	99.8	101.3	102.5	103.8	104.2	106.4	107.9	110.3	111.2	114.4	117.8
Leather and furskins (9/79=100)	61	98.0	97.3	103.8	104.2	107.8	123.6	126.9	128.7	118.0	125.7	125.1
Rubber manufactures	62	99.7	100.7	100.1	100.5	100.9	102.0	102.5	103.9	104.1	105.2	108.8
Paper and paperboard products (6/78=100)	64	97.9	100.5	104.7	109.1	110.8	114.7	117.0	120.1	122.4	126.2	129.0
Iron and steel (3/82=100)	67	100.9	100.3	100.2	102.3	101.9	102.9	102.9	100.7	102.9	106.1	110.8
Nonferrous metals (9/81=100)	68	98.9	104.2	103.1	105.3	102.6	106.6	113.0	123.0	124.4	134.0	143.7
Metal manufactures, n.e.s. (3/82=100)	69	100.2	100.4	100.8	100.8	100.8	101.5	101.3	102.3	103.4	104.5	108.0
Machinery and transport equipment, excluding military and commercial aircraft (12/78=100)	7	100.2	100.7	100.8	101.0	101.6	101.7	101.8	102.1	102.4	103.2	103.9
Power generating machinery and equipment (12/78=100)	71	101.3	102.3	102.4	102.5	103.7	104.6	103.7	104.8	105.2	107.0	108.5
Machinery specialized for particular industries (9/78=100)	72	100.4	100.6	100.3	100.4	100.6	100.0	100.1	100.5	100.9	102.1	103.6
Metalworking machinery (6/78=100)	73	101.3	101.9	102.0	103.0	104.2	105.8	106.7	107.8	108.2	109.3	111.3
General industrial machines and parts n.e.s. 9/78=100)	74	100.4	100.9	101.6	102.5	103.3	104.2	104.5	104.6	105.4	106.7	108.0
Office machines and automatic data processing equipment	75	99.1	99.9	99.0	98.8	98.2	96.0	96.1	95.7	95.5	95.8	95.5
Telecommunications, sound recording and reproducing equipment	76	100.1	99.2	98.9	99.7	101.3	101.9	101.4	101.4	101.9	102.8	104.6
Electrical machinery and equipment	77	98.9	99.5	99.2	99.7	100.3	101.7	102.1	102.5	101.8	103.1	102.8
Road vehicles and parts (3/80=100)	78	100.9	101.0	101.7	101.9	103.3	103.1	103.5	103.8	104.6	104.5	104.7
Other transport equipment, excl. military and commercial aviation	79	101.1	102.1	103.1	102.8	103.5	104.5	105.5	105.8	106.6	107.4	109.6
Other manufactured articles	8	100.3	102.3	103.5	103.4	103.8	104.6	105.2	105.4	105.6	106.9	108.0
Apparel (9/83=100)	84	-	-	-	-	-	-	-	-	-	-	-
Professional, scientific, and controlling instruments and apparatus	87	100.6	102.0	103.1	103.0	103.5	104.4	105.5	106.3	107.1	110.0	111.1
Photographic apparatus and supplies, optical goods, watches and clocks (12/77=100)	88	100.1	101.9	102.6	102.4	102.1	102.7	102.5	99.0	97.9	97.6	99.8
Miscellaneous manufactured articles, n.e.s.	89	-	-	-	-	-	-	-	-	-	-	-
Gold, non-monetary (6/83=100)	971	-	-	-	-	-	-	-	-	-	-	-

- Data not available.

37. U.S. import price indexes by Standard International Trade Classification

(June 1977 = 100, unless otherwise indicated)

Category	1974 SITC	1986			1987			1988		
		June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June
ALL COMMODITIES (9/82=100)		98.7	101.1	102.3	106.5	110.0	110.9	112.5	113.8	116.9
Food (9/77=100)	0	107.3	112.0	109.1	105.2	108.3	109.1	112.5	114.1	113.9
Meat	01	96.0	104.3	109.2	105.0	108.0	114.4	113.4	111.5	107.1
Dairy products and eggs (6/81=100)	02	108.7	111.3	113.8	119.3	122.3	121.7	125.1	125.6	125.0
Fish	03	110.5	114.1	119.1	121.8	126.0	130.4	131.0	132.5	129.1
Bakery goods, pasta products, grain and grain preparations (9/77=100)	04	112.5	117.8	118.8	122.3	126.2	124.8	130.7	135.8	139.9
Fruits and vegetables	05	100.0	106.0	104.3	101.9	110.1	110.0	116.2	115.4	120.3
Sugar, sugar preparations, and honey (3/82=100)	06	104.6	106.2	106.5	107.4	109.6	109.0	107.0	109.6	110.4
Coffee, tea, cocoa	07	117.2	121.5	104.9	89.9	87.0	85.1	90.6	94.3	93.4
Beverages and tobacco	1	105.2	103.9	106.8	107.8	112.8	112.2	113.5	116.0	116.2
Beverages	11	106.1	107.5	109.5	112.1	114.2	114.8	116.2	118.7	119.9
Crude materials	2	106.4	109.5	109.1	115.1	116.2	120.3	122.1	129.2	137.8
Crude rubber (inc. synthetic & reclaimed) (3/84=100)	23	99.5	97.7	98.4	98.4	103.7	110.7	120.1	121.7	151.1
Wood (9/81=100)	24	104.3	107.6	104.8	113.5	110.2	117.4	108.8	112.4	111.4
Pulp and waste paper (12/81=100)	25	100.3	108.0	116.9	127.0	132.0	133.4	141.0	151.0	160.5
Crude fertilizers and crude minerals (12/83=100)	27	99.0	98.4	98.6	98.2	99.6	99.2	99.9	100.4	101.0
Metalliferous ores and metal scrap (3/84=100)	28	121.6	124.8	118.3	122.8	124.5	128.7	137.9	151.2	167.6
Crude vegetable and animal materials, n.e.s.	29	111.3	112.4	111.9	113.0	109.0	107.6	118.3	135.8	149.0
Fuels and related products (6/82=100)	3	51.5	52.2	55.9	67.4	74.1	74.3	67.2	60.6	64.7
Petroleum and petroleum products (6/82=100)	33	49.0	50.0	55.0	67.4	74.4	75.2	67.8	60.4	65.0
Fats and oils (9/83=100)	4	66.7	61.2	83.4	82.9	87.9	96.4	102.1	106.4	111.2
Vegetable oils (9/83=100)	42	-	-	-	-	-	100.0	105.7	111.1	116.1
Chemicals (9/82=100)	5	99.7	99.8	99.0	102.6	104.8	105.6	110.1	114.2	116.3
Medicinal and pharmaceutical products (3/84=100)	54	111.2	115.9	113.6	120.1	123.4	124.3	126.3	135.3	140.3
Manufactured fertilizers (3/84=100)	56	93.0	89.8	89.9	92.9	94.6	109.3	133.6	133.7	136.3
Chemical materials and products, n.e.s. (9/84=100)	59	110.1	111.3	112.7	115.1	117.7	120.6	124.8	138.7	148.6
Intermediate manufactured products (12/77=100)	6	103.6	105.8	106.7	108.6	112.5	116.3	119.8	124.4	131.6
Leather and furskins	61	106.3	108.8	107.2	110.9	116.6	117.8	124.4	131.8	137.0
Rubber manufactures, n.e.s.	62	101.2	102.0	101.8	104.3	104.6	103.2	104.6	106.0	107.7
Cork and wood manufactures	63	111.0	112.7	117.4	118.0	124.3	128.3	128.2	133.8	137.8
Paper and paperboard products	64	100.8	101.0	104.9	104.8	104.9	110.3	112.3	117.2	118.3
Textiles	65	105.4	107.4	107.9	110.4	111.8	114.6	118.6	120.0	120.6
Nonmetallic mineral manufactures, n.e.s.	66	110.5	116.6	117.9	120.5	126.7	130.4	133.4	137.4	142.5
Iron and steel (9/78=100)	67	98.9	100.0	100.9	102.7	106.6	109.4	114.0	120.0	127.2
Nonferrous metals (12/81=100)	68	98.9	103.3	101.5	102.5	112.4	120.9	125.8	132.7	154.6
Metal manufactures, n.e.s.	69	107.9	107.7	108.3	112.1	112.7	114.6	117.8	121.1	127.9
Machinery and transport equipment (6/81=100)	7	110.4	113.0	114.4	117.5	119.9	119.9	123.1	125.4	127.3
Machinery specialized for particular industries (9/78=100)	72	116.9	122.7	123.0	130.4	136.1	134.3	142.1	146.8	149.5
Metalworking machinery (3/80=100)	73	113.0	117.7	120.9	126.4	128.1	130.2	135.5	139.9	142.5
General industrial machinery and parts, n.e.s. (6/81=100)	74	116.2	119.9	120.9	127.9	130.8	130.1	137.0	140.4	143.5
Office machines and automatic data processing equipment (3/80=100)	75	109.1	109.9	108.9	110.0	114.0	114.8	118.3	118.1	119.6
Telecommunications, sound recording and reproducing apparatus (3/80=100)	76	106.4	109.2	108.9	110.5	110.3	110.2	112.1	112.8	114.0
Electrical machinery and equipment (12/81=100)	77	106.4	108.8	109.8	112.4	115.8	115.1	118.2	122.2	123.8
Road vehicles and parts (6/81=100)	78	110.8	112.9	116.1	118.6	120.5	120.6	122.6	125.5	127.7
Misc. manufactured articles (3/80=100)	8	106.8	109.7	110.3	114.5	117.8	118.5	121.8	124.2	125.8
Plumbing, heating, and lighting fixtures (6/80=100)	81	108.6	111.1	110.8	111.6	117.0	116.2	121.0	123.4	127.0
Furniture and parts (6/80=100)	82	108.0	110.7	112.3	114.8	119.8	119.0	124.3	125.4	130.2
Clothing (9/77=100)	84	100.7	101.7	102.6	106.4	109.2	111.9	112.3	115.6	114.8
Footwear	85	108.0	110.7	112.3	114.8	119.8	119.0	124.3	125.4	130.2
Professional, scientific, and controlling instruments and apparatus (12/79=100)	87	117.9	122.6	122.5	131.3	135.9	132.7	138.7	140.0	142.2
Photographic apparatus and supplies, optical goods, watches, and clocks (3/80=100)	88	113.8	118.0	119.0	123.7	126.0	122.1	127.3	129.2	129.3
Misc. manufactured articles, n.e.s. (6/82=100)	89	-	-	-	-	-	-	-	-	-
Gold, non-monetary (6/82=100)	971	-	-	-	-	-	-	-	-	-

- Data not available.

38. U.S. export price indexes by end-use category

(September 1983 = 100 unless otherwise indicated)

Category	Per-centage of 1980 trade value	1986			1987				1988	
		June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June
Foods, feeds, and beverages	16.294	96.2	87.2	90.2	87.4	91.5	88.0	96.6	98.5	110.2
Raw materials	30.696	96.0	95.1	96.3	100.8	106.1	109.1	111.8	114.2	118.3
Capital goods (12/82=100)	30.186	100.6	100.7	101.1	101.4	101.6	101.8	102.1	103.3	104.1
Automotive vehicles, parts and engines (12/82=100)	7.483	101.9	102.3	103.5	103.4	103.6	104.0	104.5	104.3	104.7
Consumer goods	7.467	103.3	103.6	105.2	105.9	106.3	106.9	108.0	110.1	110.6
Durables	3.965	102.8	102.9	104.9	105.5	106.6	107.3	107.9	110.4	110.3
Nondurables	3.501	103.7	103.8	104.3	105.4	104.3	104.6	106.3	107.4	108.8

39. U.S. import price indexes by end-use category

(December 1982=100)

Category	Per-centage of 1980 trade value	1986			1987				1988	
		June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June
Foods, feeds, and beverages	7.477	106.1	109.8	108.4	105.2	107.8	109.0	112.1	113.7	113.6
Petroleum and petroleum products, excl. natural gas	31.108	49.1	50.0	54.7	67.2	74.1	74.7	67.6	60.3	64.8
Raw materials, excluding petroleum	19.205	-	-	-	-	-	-	-	-	-
Raw materials, nondurable	9.391	-	-	-	-	-	-	-	-	-
Raw materials, durable	9.814	-	-	-	-	-	-	-	-	-
Capital goods	13.164	110.7	113.5	114.2	118.7	122.2	121.9	126.6	128.6	130.8
Automotive vehicles, parts and engines	11.750	110.4	112.7	114.6	116.5	118.4	118.4	120.6	123.7	125.9
Consumer goods	14.250	107.1	110.1	110.5	114.2	116.9	118.2	121.4	124.2	126.4
Durable	5.507	-	-	-	-	-	-	-	-	-
Nondurable	8.743	-	-	-	-	-	-	-	-	-

- Data not available.

40. U.S. export price indexes by Standard Industrial Classification ¹

Industry group	1986			1987				1988	
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June
Manufacturing:									
Food and kindred products (6/83=100)	97.2	97.4	100.2	102.0	107.4	107.1	116.3	120.8	124.8
Lumber and wood products, except furniture (6/83=100)	103.4	104.8	108.8	112.8	116.2	138.9	142.5	146.1	145.3
Furniture and fixtures (9/83=100)	103.7	104.0	104.1	108.0	108.6	108.7	111.2	112.5	112.9
Paper and allied products (3/81=100)	97.9	102.3	104.9	109.3	112.3	115.5	119.3	124.6	129.5
Chemicals and allied products (12/84=100)	98.0	95.8	95.8	100.5	107.6	108.7	113.8	118.4	122.5
Petroleum and coal products (12/83=100)	61.8	65.1	67.6	73.5	80.5	81.4	78.8	73.0	78.3
Primary metal products (3/82=100)	102.6	109.3	106.9	110.6	117.2	122.3	126.6	126.9	134.8
Machinery, except electrical (9/78=100)	100.1	100.1	100.1	99.6	99.4	99.4	99.7	100.6	101.3
Electrical machinery (12/80=100)	99.5	99.9	100.8	101.9	102.1	102.5	102.2	102.9	103.4
Transportation equipment (12/78=100)	104.7	104.8	106.0	106.2	106.7	106.9	107.8	108.0	109.0
Scientific instruments; optical goods; clocks (6/77=100)	104.5	104.7	105.3	105.8	106.8	106.6	107.1	109.2	110.6

¹ SIC - based classification.

41. U.S. import price indexes by Standard Industrial Classification ¹

Industry group	1986			1987				1988	
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June
Manufacturing:									
Food and kindred products (6/77=100)	97.3	99.7	103.0	103.8	106.3	108.4	110.6	114.0	114.4
Textile mill products (9/82=100)	106.8	109.2	110.6	114.1	116.1	119.4	124.3	127.4	128.9
Apparel and related products (6/77=100)	101.2	102.4	103.0	107.0	109.4	112.3	113.4	116.6	116.0
Lumber and wood products, except furniture (6/77=100)	106.3	109.0	109.0	114.8	115.0	120.3	115.4	119.5	120.0
Furniture and fixtures (6/80=100)	109.4	111.4	111.6	116.1	117.0	118.3	118.9	122.2	124.0
Paper and allied products (6/77=100)	97.3	98.6	103.3	105.1	105.9	110.9	113.6	119.1	121.2
Chemicals and allied products (9/82=100)	103.3	104.3	102.6	105.7	106.2	107.2	112.2	116.8	121.2
Rubber and miscellaneous plastic products (12/80=100)	105.3	106.6	107.9	110.6	113.6	112.3	115.7	117.2	119.2
Leather and leather products	103.2	105.3	106.4	109.3	113.3	113.3	118.4	120.8	125.1
Primary metal products (6/81=100)	97.1	102.3	101.3	102.7	110.4	115.2	120.0	122.6	135.0
Fabricated metal products (12/84=100)	110.5	111.1	111.7	116.7	117.5	119.8	123.2	127.3	133.9
Machinery, except electrical (3/80=100)	114.9	118.2	118.9	123.4	127.4	127.8	133.9	135.9	138.2
Electrical machinery (9/84=100)	104.3	106.9	107.0	109.4	110.7	110.2	112.5	114.7	116.1
Transportation equipment (6/81=100)	112.8	114.7	117.3	119.9	122.1	122.5	124.6	127.3	129.5
Scientific instruments; optical goods; clocks (12/79=100)	117.8	122.6	122.4	128.8	132.5	128.8	134.0	135.8	136.9
Miscellaneous manufactured commodities (9/82=100)	104.7	110.7	112.2	115.1	118.1	121.4	123.8	127.7	133.2

¹ SIC - based classification.

42. Indexes of productivity, hourly compensation, and unit costs, quarterly data seasonally adjusted

(1977 = 100)

Item	Quarterly Indexes										
	1985	1986				1987				1988	
	IV	I	II	III	IV	I	II	III	IV	I	II
Business:											
Output per hour of all persons	108.5	110.5	110.4	110.0	109.8	109.9	110.6	111.7	111.8	112.8	112.2
Compensation per hour	178.8	180.4	182.0	184.0	186.2	187.3	189.0	191.1	194.0	195.8	198.0
Real compensation per hour	99.4	100.0	101.2	101.7	102.2	101.5	101.2	101.4	102.0	102.1	102.0
Unit labor costs	164.8	163.3	164.9	167.3	169.6	170.5	170.8	171.1	173.5	173.5	176.5
Unit nonlabor payments	161.6	164.5	165.2	166.6	163.7	165.6	168.7	171.5	168.9	170.0	169.2
Implicit price deflator	163.7	163.7	165.0	167.0	167.5	168.7	170.1	171.2	171.9	172.3	173.9
Nonfarm business:											
Output per hour of all persons	106.5	108.6	108.4	108.0	107.8	107.8	108.6	109.6	109.9	110.8	110.3
Compensation per hour	177.9	179.8	181.2	183.1	185.4	186.4	187.9	190.0	192.9	194.6	196.6
Real compensation per hour	99.0	99.6	100.7	101.2	101.8	101.0	100.6	100.8	101.4	101.5	101.3
Unit labor costs	167.1	165.5	167.1	169.5	172.1	172.9	173.0	173.3	175.6	175.7	178.2
Unit nonlabor payments	162.7	166.1	166.6	168.1	164.9	167.2	169.8	173.0	170.9	171.6	171.4
Implicit price deflator	165.5	165.7	167.0	169.0	169.5	170.9	171.9	173.2	174.0	174.2	175.8
Nonfinancial corporations:											
Output per hour of all employees	108.0	109.5	109.3	109.6	110.3	110.1	110.9	112.2	112.2	113.3	-
Compensation per hour	175.3	177.1	178.5	180.2	182.2	182.9	184.3	186.1	188.5	189.9	-
Real compensation per hour	97.5	98.1	99.2	99.6	100.1	99.1	98.7	98.7	99.1	99.0	-
Total unit costs	165.8	165.5	166.7	168.4	168.8	169.9	170.3	170.2	172.0	171.5	-
Unit labor costs	162.3	161.7	163.3	164.3	165.1	166.2	166.1	165.9	168.1	167.5	-
Unit nonlabor costs	176.3	176.7	176.9	180.3	179.6	180.8	182.6	183.0	183.6	183.4	-
Unit profits	132.4	133.7	132.7	133.6	129.7	128.5	129.8	136.4	128.3	132.5	-
Unit nonlabor payments	160.9	161.7	161.4	164.0	162.1	162.5	164.1	166.6	164.2	165.6	-
Implicit price deflator	161.8	161.7	162.6	164.2	164.1	164.9	165.4	166.1	166.7	166.9	-
Manufacturing:											
Output per hour of all persons	125.3	126.6	127.2	128.0	128.8	130.0	131.7	132.8	133.2	134.3	135.4
Compensation per hour	179.4	181.1	182.0	183.6	185.3	185.9	186.3	187.2	188.2	190.7	192.1
Real compensation per hour	99.8	100.3	101.2	101.5	101.7	100.8	99.7	99.3	99.0	99.4	99.0
Unit labor costs	143.2	143.0	143.2	143.4	143.8	143.1	141.4	141.0	141.3	142.1	141.9

- Data not available.

43. Annual indexes of multifactor productivity and related measures, selected years

(1977 = 100)

Item	1960	1970	1973	1976	1978	1980	1981	1982	1983	1984	1985	1986
Private business												
Productivity:												
Output per hour of all persons	67.3	88.4	95.9	98.4	100.8	99.2	100.6	100.3	103.1	105.7	107.6	109.7
Output per unit of capital services	102.1	101.9	105.3	97.2	102.0	94.2	92.4	86.7	88.4	92.8	92.8	92.8
Multifactor productivity	78.1	92.9	99.1	98.0	101.2	97.4	97.7	95.3	97.7	101.0	102.2	103.4
Output	55.3	80.2	93.0	94.5	105.8	106.6	108.9	105.4	109.9	119.2	124.0	128.1
Inputs:												
Hours of all persons	82.2	90.8	96.9	96.1	105.0	107.5	108.2	105.2	106.7	112.8	115.2	116.8
Capital services	54.2	78.7	88.3	97.2	103.8	113.1	117.8	121.7	124.4	128.5	133.6	138.0
Combined units of labor and capital input	70.8	86.3	93.8	96.5	104.5	109.4	111.5	110.7	112.6	118.1	121.3	123.8
Capital per hour of all persons	65.9	86.7	91.1	101.2	98.8	105.3	108.8	115.7	116.6	113.9	116.0	118.2
Private nonfarm business												
Productivity:												
Output per hour of all persons	70.7	89.2	96.4	98.5	100.8	98.7	99.6	99.1	102.5	104.7	105.9	107.6
Output per unit of capital services	103.6	102.8	106.0	97.3	101.9	93.4	91.1	85.1	87.3	91.3	90.8	90.5
Multifactor productivity	80.9	93.7	99.6	98.1	101.2	96.9	96.7	94.1	97.0	99.9	100.5	101.4
Output	54.4	79.9	92.9	94.4	106.0	106.6	108.4	104.8	110.1	119.3	123.7	127.6
Inputs:												
Hours of all persons	77.0	89.6	96.3	95.8	105.1	108.0	108.8	105.7	107.4	114.0	116.8	118.5
Capital services	52.5	77.8	87.6	97.0	104.0	114.1	119.0	123.2	126.1	130.6	136.3	141.0
Combined units of labor and capital input	67.3	85.3	93.3	96.2	104.7	110.0	112.2	111.4	113.5	119.4	123.1	125.8
Capital per hour of all persons	68.2	86.8	91.0	101.3	98.9	105.6	109.4	116.5	117.4	114.6	116.7	119.0
Manufacturing												
Productivity:												
Output per hour of all persons	62.2	80.8	93.4	97.1	101.5	101.4	103.6	105.9	112.0	118.1	124.2	128.8
Output per unit of capital services	102.5	98.6	111.4	96.2	102.1	91.2	89.2	81.8	86.9	95.7	97.8	99.3
Multifactor productivity	71.9	85.2	97.9	96.8	101.7	98.7	99.8	99.2	105.1	112.2	117.0	120.6
Output	52.5	78.6	96.3	93.1	106.0	103.2	104.8	98.4	104.7	117.5	122.5	125.9
Inputs:												
Hours of all persons	84.4	97.3	103.1	95.9	104.4	101.7	101.1	92.9	93.5	99.5	98.7	97.8
Capital services	51.2	79.7	86.4	96.7	103.7	113.1	117.5	120.3	120.6	122.8	125.3	126.8
Combined units of labor and capital inputs	73.0	92.2	98.4	96.1	104.2	104.5	105.0	99.2	99.7	104.7	104.8	104.4
Capital per hour of all persons	60.7	82.0	83.8	100.9	99.4	111.2	116.2	129.4	129.0	123.5	127.0	129.7

44. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years

(1977=100)

Item	1960	1970	1973	1976	1978	1980	1981	1982	1983	1984	1985	1986	1987
Business:													
Output per hour of all persons	67.6	88.4	95.9	98.3	100.8	99.3	100.7	100.3	103.0	105.5	107.7	110.1	111.0
Compensation per hour	33.6	57.8	70.9	92.8	108.5	131.5	143.7	154.9	161.4	167.9	175.5	183.1	190.4
Real compensation per hour	68.9	90.3	96.8	98.8	100.9	96.7	95.8	97.3	98.2	97.9	98.8	101.2	101.5
Unit labor costs	49.7	65.4	73.9	94.3	107.6	132.5	142.7	154.5	156.7	159.1	162.9	166.3	171.5
Unit nonlabor payments	46.4	59.4	72.5	93.3	106.7	118.7	134.6	136.6	146.4	156.5	160.9	165.0	168.7
Implicit price deflator	48.5	63.2	73.4	94.0	107.3	127.6	139.8	148.1	153.0	158.2	162.2	165.8	170.5
Nonfarm business:													
Output per hour of all persons	71.0	89.3	96.4	98.5	100.8	98.8	99.8	99.2	102.5	104.6	106.1	108.2	109.0
Compensation per hour	35.3	58.2	71.2	92.8	108.6	131.3	143.6	154.8	161.5	167.8	174.9	182.3	189.4
Real compensation per hour	72.3	90.9	97.2	98.9	100.9	96.6	95.8	97.2	98.3	97.9	98.5	100.8	101.0
Unit labor costs	49.7	65.2	73.9	94.3	107.7	132.9	144.0	156.0	157.6	160.4	164.9	168.6	173.8
Unit nonlabor payments	46.3	60.0	69.3	93.0	105.6	118.5	133.5	136.5	148.3	156.3	161.9	166.4	170.2
Implicit price deflator	48.5	63.4	72.3	93.8	107.0	127.8	140.3	149.2	154.3	159.0	163.8	167.8	172.5
Nonfinancial corporations:													
Output per hour of all employees	73.4	91.1	97.5	98.4	100.6	99.1	99.6	100.4	103.5	106.0	107.7	109.7	111.3
Compensation per hour	36.9	59.2	71.6	92.9	108.4	131.1	143.3	154.3	159.9	165.8	172.5	179.5	185.5
Real compensation per hour	75.5	92.5	97.7	98.9	100.8	96.4	95.5	96.9	97.3	96.7	97.1	99.2	98.9
Total unit costs	49.4	64.8	72.7	94.8	107.3	133.4	147.7	159.5	159.5	160.8	164.1	167.3	170.6
Unit labor costs	50.2	65.0	73.4	94.3	107.8	132.3	143.8	153.8	154.5	156.5	160.2	163.6	166.6
Unit nonlabor costs	47.0	64.2	70.7	96.2	105.7	136.7	159.1	176.4	174.3	173.6	175.8	178.4	182.5
Unit profits	59.8	52.3	65.6	89.4	102.0	85.2	98.1	78.5	110.9	136.5	133.0	132.4	130.8
Unit nonlabor payments	51.5	60.1	68.9	93.8	104.4	118.6	137.8	142.1	152.1	160.6	160.8	162.3	164.4
Implicit price deflator	50.7	63.3	71.9	94.2	106.6	127.6	141.7	149.8	153.7	157.9	160.4	163.2	165.8
Manufacturing:													
Output per hour of all persons	62.2	80.8	93.4	97.1	101.5	101.4	103.6	105.9	112.0	118.1	123.6	127.7	132.0
Compensation per hour	36.5	57.4	68.8	92.1	108.2	132.4	145.2	157.5	162.4	168.0	176.4	183.0	186.9
Real compensation per hour	74.8	89.6	93.9	98.1	100.6	97.4	96.8	98.9	98.8	98.0	99.3	101.2	99.7
Unit labor costs	58.7	71.0	73.7	94.9	106.6	130.6	140.1	148.7	145.0	142.2	142.7	143.3	141.7
Unit nonlabor payments	60.0	64.1	70.7	93.5	101.9	97.8	111.8	114.0	128.5	138.6	130.4	136.3	139.2
Implicit price deflator	59.1	69.0	72.8	94.5	105.2	121.0	131.8	138.6	140.2	141.2	139.1	141.3	141.0

45. Unemployment rates, approximating U.S. concepts, in nine countries, quarterly data seasonally adjusted

Country	Annual average		1986	1987				1988	
	1986	1987	IV	I	II	III	IV	I	II
Total labor force basis									
United States	6.9	6.1	6.8	6.5	6.2	5.9	5.8	5.6	5.4
Canada	9.5	8.8	9.4	9.6	9.0	8.8	8.2	7.8	7.6
Australia	8.0	8.1	8.3	8.2	8.1	8.0	7.9	7.5	-
Japan	2.8	2.9	2.8	3.0	3.1	2.8	2.7	2.7	-
France	10.4	10.6	10.5	10.7	10.7	10.6	10.4	10.4	-
Germany	6.8	6.8	6.7	6.7	6.8	6.8	6.8	6.8	6.9
Italy ^{1, 2}	7.4	7.7	7.7	7.4	7.6	7.9	7.9	7.9	-
Sweden ³	2.6	1.9	2.6	2.0	1.9	1.9	1.7	1.7	1.6
United Kingdom	11.5	10.2	11.1	10.9	10.5	10.0	9.4	9.0	8.6
Civilian labor force basis									
United States	7.0	6.2	6.8	6.6	6.3	6.0	5.9	5.7	5.5
Canada	9.6	8.9	9.4	9.6	9.1	8.8	8.2	7.9	7.7
Australia	8.1	8.1	8.4	8.3	8.2	8.0	8.0	7.6	-
Japan	2.8	2.9	2.8	3.0	3.1	2.8	2.7	2.7	-
France	10.6	10.9	10.8	10.9	10.9	10.8	10.6	10.6	-
Germany	7.0	6.9	6.8	6.8	6.9	7.0	7.0	6.9	7.0
Italy ^{1, 2}	7.5	7.9	7.8	7.6	7.8	8.1	8.0	8.0	-
Sweden ³	2.6	1.9	2.6	2.0	1.9	1.9	1.7	1.7	1.6
United Kingdom	11.2	10.3	11.2	11.0	10.6	10.0	9.5	9.0	8.6

¹ Quarterly rates are for the first month of the quarter.

² Many Italians reported as unemployed did not actively seek work in the past 30 days, and they have been excluded for comparability with U.S. concepts. Inclusion of such persons would about double the Italian unemployment rate in 1985 and earlier years and increase it to 11-12 percent for 1986 onward.

³ Break in series beginning in 1987. The 1986 rate based

on the new series was 2.2 percent.

- Data not available.

NOTE: Quarterly figures for France, Germany, and the United Kingdom are calculated by applying annual adjustment factors to current published data and therefore should be viewed as less precise indicators of unemployment under U.S. concepts than the annual figures.

46. Annual data: Employment status of the civilian working-age population, approximating U.S. concepts, 10 countries

(Numbers in thousands)

Employment status and country	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Labor force										
United States	102,251	104,962	106,940	108,670	110,204	111,550	113,544	115,461	117,834	119,865
Canada	10,895	11,231	11,573	11,904	11,958	12,183	12,399	12,639	12,870	13,121
Australia	6,443	6,519	6,693	6,810	6,910	6,997	7,133	7,272	7,562	7,736
Japan	54,610	55,210	55,740	56,320	56,980	58,110	58,480	58,820	59,410	60,050
France	22,460	22,660	22,800	22,950	23,160	23,140	23,300	23,360	23,450	23,520
Germany	26,000	26,250	26,520	26,650	26,700	26,650	26,760	26,960	27,100	27,260
Italy	20,570	20,850	21,120	21,320	21,410	21,590	21,670	21,800	22,280	22,340
Netherlands	5,010	5,100	5,310	5,520	5,570	5,600	5,620	5,710	5,760	5,780
Sweden	4,203	4,262	4,312	4,327	4,350	4,369	4,385	4,418	4,443	4,480
United Kingdom	26,260	26,350	26,520	26,590	26,740	26,790	27,180	27,370	27,540	27,760
Participation rate¹										
United States	63.2	63.7	63.8	63.9	64.0	64.0	64.4	64.8	65.3	65.6
Canada	62.7	63.4	64.1	64.8	64.1	64.4	64.8	65.2	65.7	66.2
Australia	61.9	61.6	62.1	61.9	61.7	61.4	61.5	61.8	63.0	63.0
Japan	62.8	62.7	62.6	62.6	62.7	63.1	62.7	62.3	62.1	61.9
France	57.5	57.5	57.2	57.1	57.1	56.6	56.6	56.3	56.1	55.8
Germany	53.3	53.3	53.2	52.9	52.6	52.3	52.4	52.6	52.8	53.1
Italy	47.8	48.0	48.2	48.3	47.7	47.5	47.3	47.2	48.2	48.2
Netherlands	48.8	49.0	50.2	51.4	51.2	50.9	50.5	50.7	50.8	50.5
Sweden	66.1	66.6	66.9	66.8	66.8	66.7	66.6	66.9	67.1	67.4
United Kingdom	62.8	62.6	62.5	62.2	62.3	62.1	62.6	62.7	62.7	63.0
Employed										
United States	96,048	98,824	99,303	100,397	99,526	100,834	105,005	107,150	109,597	112,440
Canada	9,987	10,395	10,708	11,006	10,644	10,734	11,000	11,311	11,634	11,955
Australia	6,038	6,111	6,284	6,416	6,415	6,300	6,490	6,670	6,952	7,107
Japan	53,370	54,040	54,600	55,060	55,620	56,550	56,870	57,260	57,750	58,320
France	21,260	21,300	21,330	21,200	21,240	21,170	20,980	20,890	20,960	20,970
Germany	25,130	25,470	25,750	25,560	25,140	24,750	24,790	24,950	25,210	25,370
Italy	19,720	19,930	20,200	20,280	20,250	20,320	20,390	20,490	20,610	20,590
Netherlands	4,750	4,830	4,980	5,010	4,980	4,890	4,930	5,110	5,200	5,240
Sweden	4,109	4,174	4,226	4,219	4,213	4,218	4,249	4,293	4,326	4,396
United Kingdom	24,610	24,940	24,670	23,800	23,710	23,600	24,000	24,310	24,450	24,910
Employment-population ratio²										
United States	59.3	59.9	59.2	59.0	57.8	57.9	59.5	60.1	60.7	61.5
Canada	57.5	58.7	59.3	59.9	57.0	56.7	57.4	58.4	59.4	60.3
Australia	58.0	57.8	58.3	58.4	57.3	55.3	56.0	56.6	57.9	57.9
Japan	61.3	61.4	61.3	61.2	61.2	61.4	61.0	60.6	60.4	60.1
France	54.4	54.0	53.5	52.8	52.3	51.8	51.0	50.4	50.2	49.7
Germany	51.5	51.7	51.7	50.8	49.6	48.6	48.5	48.7	49.1	49.4
Italy	45.9	45.9	46.1	45.9	45.2	44.7	44.5	44.4	44.6	44.4
Netherlands	46.3	46.4	47.0	46.6	45.8	44.5	44.3	45.4	45.8	45.8
Sweden	64.6	65.3	65.6	65.1	64.7	64.4	64.5	65.0	65.4	66.2
United Kingdom	58.8	59.2	58.1	55.7	55.3	54.7	55.3	55.7	55.7	56.6
Unemployed										
United States	6,202	6,137	7,637	8,273	10,678	10,717	8,539	8,312	8,237	7,425
Canada	908	836	865	898	1,314	1,448	1,399	1,328	1,236	1,167
Australia	405	408	409	394	495	697	642	602	610	629
Japan	1,240	1,170	1,140	1,260	1,360	1,560	1,610	1,560	1,670	1,730
France	1,200	1,360	1,470	1,750	1,920	1,970	2,320	2,440	2,490	2,550
Germany	870	780	770	1,090	1,560	1,990	1,970	2,010	1,890	1,890
Italy	850	920	920	1,040	1,160	1,270	1,280	1,310	1,680	1,760
Netherlands	260	270	330	510	590	710	690	600	560	540
Sweden	94	88	86	108	137	151	136	125	117	84
United Kingdom	1,650	1,420	1,850	2,790	3,030	3,190	3,180	3,060	3,090	2,850
Unemployment rate										
United States	6.1	5.8	7.1	7.6	9.7	9.6	7.5	7.2	7.0	6.2
Canada	8.3	7.4	7.5	7.5	11.0	11.9	11.3	10.5	9.6	8.9
Australia	6.3	6.3	6.1	5.8	7.2	10.0	9.0	8.3	8.1	8.1
Japan	2.3	2.1	2.0	2.2	2.4	2.7	2.8	2.6	2.8	2.9
France	5.3	6.0	6.4	7.6	8.3	8.5	10.0	10.4	10.6	10.9
Germany	3.3	3.0	2.9	4.1	5.8	7.1	7.4	7.5	7.0	6.9
Italy	4.1	4.4	4.4	4.9	5.4	5.9	5.9	6.0	7.5	7.9
Netherlands	5.2	5.3	6.2	9.2	10.6	12.7	12.3	10.5	9.7	9.3
Sweden	2.2	2.1	2.0	2.5	3.1	3.5	3.1	2.8	2.6	1.9
United Kingdom	6.3	5.4	7.0	10.5	11.3	11.9	11.7	11.2	11.2	10.3

¹ Labor force as a percent of the civilian working-age population.

² Employment as a percent of the civilian working-age population.

47. Annual indexes of manufacturing productivity and related measures, 12 countries

(1977 = 100)

Item and country	1960	1970	1973	1975	1976	1977	1979	1980	1981	1982	1983	1984	1985	1986	1987
Output per hour															
United States	62.2	80.8	93.4	92.9	97.1	100.0	101.4	101.4	103.6	105.9	112.0	118.1	124.2	128.8	132.4
Canada	50.7	75.6	90.3	88.6	94.8	100.0	102.0	98.2	102.9	98.3	105.4	116.8	119.7	119.4	121.5
Japan	23.2	64.8	83.1	87.7	94.3	100.0	114.8	122.7	127.2	135.0	142.3	152.5	161.1	163.8	170.5
Belgium	33.0	60.4	78.8	86.5	95.3	100.0	111.9	119.2	127.6	135.2	148.2	154.4	159.0	165.4	-
Denmark	37.2	65.6	83.3	94.6	98.2	100.0	106.5	112.3	114.2	114.6	120.2	118.6	118.3	118.5	121.0
France	36.6	70.0	82.7	89.0	95.6	100.0	109.7	110.6	114.0	122.0	125.1	129.3	133.3	136.2	141.2
Germany	40.3	71.2	84.0	90.1	96.4	100.0	108.2	108.6	111.0	112.6	119.2	123.7	128.5	130.7	132.4
Italy	35.4	72.7	90.9	91.1	98.9	100.0	110.5	116.9	124.8	129.6	138.6	147.8	151.9	153.1	158.9
Netherlands	32.4	64.3	81.5	86.2	95.8	100.0	112.3	113.9	116.9	119.4	127.5	140.5	145.1	144.7	-
Norway	54.6	81.7	94.6	96.8	99.7	100.0	107.1	106.7	107.0	109.8	117.2	123.9	125.2	124.8	134.4
Sweden	42.3	80.7	94.8	100.2	101.7	100.0	110.9	112.7	113.2	116.5	125.5	131.0	136.1	136.4	139.9
United Kingdom	55.9	80.4	95.5	94.9	99.1	100.0	102.5	101.9	107.0	113.5	123.2	130.0	134.7	138.5	148.1
Output															
United States	52.5	78.6	96.3	84.9	93.1	100.0	108.1	103.2	104.8	98.4	104.7	117.5	122.5	125.9	130.7
Canada	41.3	73.5	93.5	89.9	96.5	100.0	108.5	103.6	107.4	93.6	99.6	114.9	121.2	123.9	129.9
Japan	19.2	69.9	91.9	86.2	94.8	100.0	113.9	124.1	129.8	137.3	148.2	165.4	177.0	178.0	184.1
Belgium	41.9	78.6	96.4	92.7	99.7	100.0	104.1	106.8	105.7	110.1	114.8	117.5	119.9	122.0	-
Denmark	49.2	82.0	95.9	95.0	99.6	100.0	105.4	110.1	106.6	108.3	115.6	119.7	123.4	126.7	124.3
France	35.4	73.3	88.6	90.0	96.1	100.0	105.3	104.6	102.9	104.0	103.8	104.0	103.3	103.0	104.1
Germany	50.0	86.6	96.1	91.0	98.0	100.0	106.6	106.6	104.9	102.4	103.6	106.4	110.1	112.8	113.5
Italy	36.4	78.0	90.5	86.9	97.9	100.0	108.6	115.4	115.1	113.4	114.3	119.0	121.8	125.8	131.2
Netherlands	44.8	84.4	95.8	92.7	99.0	100.0	106.1	106.6	106.7	105.0	107.0	113.3	116.0	117.3	-
Norway	55.1	86.9	99.5	101.0	101.4	100.0	100.3	98.8	97.7	97.4	97.2	102.6	105.2	107.0	108.9
Sweden	52.6	92.5	100.3	106.1	106.1	100.0	103.6	100.6	100.1	105.2	111.5	115.3	115.2	118.8	-
United Kingdom	71.2	95.0	104.8	96.3	98.2	100.0	100.5	91.7	86.2	86.4	88.9	92.6	95.2	95.5	100.7
Total hours															
United States	84.4	97.3	103.1	91.4	95.9	100.0	106.5	101.7	101.1	92.9	93.5	99.5	98.7	97.8	98.7
Canada	81.4	97.2	103.6	101.5	101.8	100.0	106.3	105.5	104.3	95.2	94.5	98.3	101.2	103.8	106.9
Japan	82.7	107.9	110.7	98.2	100.6	100.0	99.3	101.2	102.0	101.7	104.2	108.5	109.8	108.7	108.0
Belgium	127.1	130.2	122.3	107.1	104.6	100.0	93.0	89.6	82.8	81.4	77.5	76.1	75.4	73.8	-
Denmark	132.4	125.1	115.2	100.4	101.4	100.0	99.0	98.0	93.4	94.5	96.2	100.9	104.3	106.9	102.7
France	96.7	104.7	107.1	101.1	100.6	100.0	95.9	94.6	90.3	85.2	83.0	80.4	77.5	75.6	73.7
Germany	123.8	121.7	114.4	101.0	101.6	100.0	98.5	98.1	94.6	91.0	86.9	86.1	85.7	86.3	85.7
Italy	102.8	107.4	99.6	95.4	99.0	100.0	98.2	98.7	92.2	87.5	82.5	80.5	80.2	82.2	82.6
Netherlands	138.4	131.2	117.6	107.6	103.3	100.0	94.4	93.6	91.2	88.0	83.9	80.6	79.9	81.1	-
Norway	101.0	106.4	105.1	104.3	101.7	100.0	93.6	92.6	91.3	88.6	82.9	82.8	84.0	85.7	81.0
Sweden	124.4	114.6	105.7	105.9	104.3	100.0	93.4	92.3	88.9	85.9	83.9	85.1	84.7	84.5	84.9
United Kingdom	127.3	118.1	109.8	101.5	99.0	100.0	98.0	90.1	80.6	76.2	72.2	71.2	70.7	69.0	68.0
Compensation per hour															
United States	36.5	57.4	68.8	85.1	92.1	100.0	118.6	132.4	145.2	157.5	162.4	168.0	176.9	182.7	185.1
Canada	27.5	47.9	60.0	78.9	90.3	100.0	118.6	131.3	151.1	167.0	177.2	185.5	194.7	202.3	211.4
Japan	8.9	33.9	55.1	84.2	90.7	100.0	113.4	120.7	129.8	136.6	140.7	144.9	151.4	158.8	161.1
Belgium	13.8	34.9	53.5	79.0	89.5	100.0	117.5	130.4	144.5	150.7	157.7	173.0	184.5	191.9	-
Denmark	12.6	36.3	56.1	81.0	90.4	100.0	123.1	135.9	149.7	162.9	174.2	184.4	196.1	205.3	225.9
France	15.2	36.7	52.4	77.0	89.2	100.0	128.4	148.5	172.0	203.9	225.2	247.2	267.2	279.8	289.3
Germany	18.8	48.0	67.5	84.5	91.2	100.0	116.1	125.6	134.5	141.0	148.3	155.5	164.7	172.1	179.1
Italy	8.4	26.1	43.7	70.2	84.2	100.0	134.7	160.2	198.4	238.3	282.9	316.5	348.6	360.0	383.2
Netherlands	12.5	39.0	60.5	82.2	91.9	100.0	117.0	123.6	129.1	137.5	144.0	150.0	157.7	161.5	-
Norway	15.8	37.9	54.5	77.2	88.8	100.0	116.0	128.0	142.8	156.0	173.5	188.3	204.8	225.3	263.1
Sweden	14.7	38.5	54.2	77.3	91.5	100.0	120.1	133.6	148.1	158.9	173.3	189.7	212.4	228.1	243.8
United Kingdom	15.2	31.4	47.9	76.4	88.4	100.0	139.0	168.7	193.3	211.7	226.6	242.3	258.6	278.5	301.3
Unit labor costs: National currency basis															
United States	58.7	71.0	73.7	91.7	94.9	100.0	117.0	130.6	140.1	148.7	145.0	142.2	142.4	141.8	139.7
Canada	54.2	63.4	66.5	89.1	95.3	100.0	116.2	133.7	146.7	170.0	168.1	158.8	162.6	169.4	174.0
Japan	38.4	52.3	66.4	96.0	96.2	100.0	98.8	98.4	102.0	101.2	98.9	95.0	94.0	97.0	94.5
Belgium	41.7	57.8	67.9	91.2	93.9	100.0	105.0	109.4	113.2	111.4	107.8	112.1	116.0	116.0	-
Denmark	33.8	55.4	67.4	85.6	92.1	100.0	115.7	121.0	131.1	142.2	144.9	155.4	165.7	173.2	186.6
France	41.5	52.5	63.4	86.5	93.3	100.0	117.0	134.3	151.0	167.2	179.9	191.2	200.4	205.4	204.9
Germany	46.6	67.4	80.3	93.8	94.6	100.0	107.3	115.7	121.2	125.2	124.4	125.8	128.2	131.7	135.2
Italy	23.7	36.0	48.1	77.1	85.1	100.0	121.9	137.0	158.9	184.0	204.1	214.1	229.5	235.1	241.2
Netherlands	38.5	60.7	74.3	95.4	96.0	100.0	104.1	108.5	110.4	115.2	113.0	106.8	108.7	111.6	-
Norway	29.0	46.4	57.6	79.7	89.1	100.0	108.2	120.0	133.4	142.1	148.0	152.0	163.5	180.5	195.7
Sweden	34.8	47.7	57.2	77.1	90.0	100.0	108.3	118.6	130.9	136.3	138.1	144.8	156.1	167.3	174.3
United Kingdom	27.2	39.1	50.2	80.5	89.2	100.0	135.6	165.6	180.6	186.6	183.9	186.4	192.0	201.1	203.4
Unit labor costs: U.S. dollar basis															
United States	58.7	71.0	73.7	91.7	94.9	100.0	117.0	130.6	140.1	148.7	145.0	142.2	142.4	141.8	139.7
Canada	59.4	64.5	70.6	93.1	102.7	100.0	105.4	121.5	130.0	146.3	144.9	130.3	126.5	129.5	139.4
Japan	28.5	39.1	65.6	86.7	86.9	100.0	121.3	116.8	123.8	108.8	111.5	107.2	105.6	154.2	175.0
Belgium	30.0	41.7	62.7	89.1	87.2	100.0	128.3	134.3	109.6	87.2	75.5	69.5	70.1	93.1	-
Denmark	29.5	44.4	67.2	89.6	91.5	100.0	132.0	129.0	110.3	102.3	95.1	90.1	93.9	128.5	163.6
France	41.6	46.7	70.2	99.3	96.1	100.0	135.2	156.4	136.4	124.9	116.1	107.6	109.7	145.8	167.5
Germany	25.9	42.9	70.4	88.7	87.3	100.0	135.9	147.9	124.9	119.7	113.1	106.6	101.1	140.8	174.5
Italy	33.7	50.6	73.1	104.3	90.5	100.0	129.5	141.4	123.2	119.9	118.6	107.6	106.1	139.2	164.2
Netherlands	25.1	41.2	65.6	92.8	89.1	100.0									

48. Occupational injury and illness incidence rates by industry, United States

Industry and type of case ¹	Incidence rates per 100 full-time workers ²								
	1978	1979	1980	1981	1982	1983	1984	1985	1986
PRIVATE SECTOR³									
Total cases	9.4	9.5	8.7	8.3	7.7	7.6	8.0	7.9	7.9
Lost workday cases	4.1	4.3	4.0	3.8	3.5	3.4	3.7	3.6	3.6
Lost workdays	63.5	67.7	65.2	61.7	58.7	58.5	63.4	64.9	65.8
Agriculture, forestry, and fishing³									
Total cases	11.6	11.7	11.9	12.3	11.8	11.9	12.0	11.4	11.2
Lost workday cases	5.4	5.7	5.8	5.9	5.9	6.1	6.1	5.7	5.6
Lost workdays	80.7	83.7	82.7	82.8	86.0	90.8	90.7	91.3	93.6
Mining									
Total cases	11.5	11.4	11.2	11.6	10.5	8.4	9.7	8.4	7.4
Lost workday cases	6.4	6.8	6.5	6.2	5.4	4.5	5.3	4.8	4.1
Lost workdays	143.2	150.5	163.6	146.4	137.3	125.1	160.2	145.3	125.9
Construction									
Total cases	16.0	16.2	15.7	15.1	14.6	14.8	15.5	15.2	15.2
Lost workday cases	6.4	6.8	6.5	6.3	6.0	6.3	6.9	6.8	6.9
Lost workdays	109.4	120.4	117.0	113.1	115.7	118.2	128.1	128.9	134.5
General building contractors:									
Total cases	15.9	16.3	15.5	15.1	14.1	14.4	15.4	15.2	14.9
Lost workday cases	6.3	6.8	6.5	6.1	5.9	6.2	6.9	6.8	6.6
Lost workdays	105.3	111.2	113.0	107.1	112.0	113.0	121.3	120.4	122.7
Heavy construction contractors:									
Total cases	16.6	16.6	16.3	14.9	15.1	15.4	14.9	14.5	14.7
Lost workday cases	6.2	6.7	6.3	6.0	5.8	6.2	6.4	6.3	6.3
Lost workdays	110.9	123.1	117.6	106.0	113.1	122.4	131.7	127.3	132.9
Special trade contractors:									
Total cases	15.8	16.0	15.5	15.2	14.7	14.8	15.8	15.4	15.6
Lost workday cases	6.6	6.9	6.7	6.6	6.2	6.4	7.1	7.0	7.2
Lost workdays	111.0	124.3	118.9	119.3	118.6	119.0	130.1	133.3	140.4
Manufacturing									
Total cases	13.2	13.3	12.2	11.5	10.2	10.0	10.6	10.4	10.6
Lost workday cases	5.6	5.9	5.4	5.1	4.4	4.3	4.7	4.6	4.7
Lost workdays	84.9	90.2	86.7	82.0	75.0	73.5	77.9	80.2	85.2
Durable goods									
Lumber and wood products:									
Total cases	22.6	20.7	18.6	17.6	16.9	18.3	19.6	18.5	18.9
Lost workday cases	11.1	10.8	9.5	9.0	8.3	9.2	9.9	9.3	9.7
Lost workdays	178.8	175.9	171.8	158.4	153.3	163.5	172.0	171.4	177.2
Furniture and fixtures:									
Total cases	17.5	17.6	16.0	15.1	13.9	14.1	15.3	15.0	15.2
Lost workday cases	6.9	7.1	6.6	6.2	5.5	5.7	6.4	6.3	6.3
Lost workdays	95.9	99.6	97.6	91.9	85.6	83.0	101.5	100.4	103.0
Stone, clay, and glass products:									
Total cases	16.8	16.8	15.0	14.1	13.0	13.1	13.6	13.9	13.6
Lost workday cases	7.8	8.0	7.1	6.9	6.1	6.0	6.6	6.7	6.5
Lost workdays	126.3	133.7	128.1	122.2	112.2	112.0	120.8	127.8	126.0
Primary metal industries:									
Total cases	17.0	17.3	15.2	14.4	12.4	12.4	13.3	12.6	13.6
Lost workday cases	7.5	8.1	7.1	6.7	5.4	5.4	6.1	5.7	6.1
Lost workdays	123.6	134.7	128.3	121.3	101.6	103.4	115.3	113.8	125.5
Fabricated metal products:									
Total cases	19.3	19.9	18.5	17.5	15.3	15.1	16.1	16.3	16.0
Lost workday cases	8.0	8.7	8.0	7.5	6.4	6.1	6.7	6.9	6.8
Lost workdays	112.4	124.2	118.4	109.9	102.5	96.5	104.9	110.1	115.5
Machinery, except electrical:									
Total cases	14.4	14.7	13.7	12.9	10.7	9.8	10.7	10.8	10.7
Lost workday cases	5.4	5.9	5.5	5.1	4.2	3.6	4.1	4.2	4.2
Lost workdays	75.1	83.6	81.3	74.9	66.0	58.1	65.8	69.3	72.0
Electric and electronic equipment:									
Total cases	8.7	8.6	8.0	7.4	6.5	6.3	6.8	6.4	6.4
Lost workday cases	3.3	3.4	3.3	3.1	2.7	2.6	2.8	2.7	2.7
Lost workdays	50.3	51.9	51.8	48.4	42.2	41.4	45.0	45.7	49.8
Transportation equipment:									
Total cases	11.5	11.6	10.6	9.8	9.2	8.4	9.3	9.0	9.6
Lost workday cases	5.1	5.5	4.9	4.6	4.0	3.6	4.2	3.9	4.1
Lost workdays	78.0	85.9	82.4	78.1	72.2	64.5	68.8	71.6	79.1
Instruments and related products:									
Total cases	6.9	7.2	6.8	6.5	5.6	5.2	5.4	5.2	5.3
Lost workday cases	2.6	2.8	2.7	2.7	2.3	2.1	2.2	2.2	2.3
Lost workdays	37.0	40.0	41.8	39.2	37.0	35.6	37.5	37.9	42.2
Miscellaneous manufacturing industries:									
Total cases	11.8	11.7	10.9	10.7	9.9	9.9	10.5	9.7	10.2
Lost workday cases	4.5	4.7	4.4	4.4	4.1	4.0	4.3	4.2	4.3
Lost workdays	66.4	67.7	67.9	68.3	69.9	66.3	70.2	73.2	70.9

See footnotes at end of table.

48. Continued— Occupational injury and illness incidence rates by industry, United States

Industry and type of case ¹	Incidence rates per 100 full-time workers ²								
	1978	1979	1980	1981	1982	1983	1984	1985	1986
Nondurable goods									
Food and kindred products:									
Total cases	19.4	19.9	18.7	17.8	16.7	16.5	16.7	16.7	16.5
Lost workday cases	8.9	9.5	9.0	8.6	8.0	7.9	8.1	8.1	8.0
Lost workdays	132.2	141.8	136.8	130.7	129.3	131.2	131.6	138.0	137.8
Tobacco manufacturing:									
Total cases	8.7	9.3	8.1	8.2	7.2	6.5	7.7	7.3	6.7
Lost workday cases	4.0	4.2	3.8	3.9	3.2	3.0	3.2	3.0	2.5
Lost workdays	58.6	64.8	45.8	56.8	44.6	42.8	51.7	51.7	45.6
Textile mill products:									
Total cases	10.2	9.7	9.1	8.8	7.6	7.4	8.0	7.5	7.8
Lost workday cases	3.4	3.4	3.3	3.2	2.8	2.8	3.0	3.0	3.1
Lost workdays	61.5	61.3	62.8	59.2	53.8	51.4	54.0	57.4	59.3
Apparel and other textile products:									
Total cases	6.5	6.5	6.4	6.3	6.0	6.4	6.7	6.7	6.7
Lost workday cases	2.2	2.2	2.2	2.2	2.1	2.4	2.5	2.6	2.7
Lost workdays	32.4	34.1	34.9	35.0	36.4	40.6	40.9	44.1	49.4
Paper and allied products:									
Total cases	13.5	13.5	12.7	11.6	10.6	10.0	10.4	10.2	10.5
Lost workday cases	5.7	6.0	5.8	5.4	4.9	4.5	4.7	4.7	4.7
Lost workdays	103.3	108.4	112.3	103.6	99.1	90.3	93.8	94.6	99.5
Printing and publishing:									
Total cases	7.0	7.1	6.9	6.7	6.6	6.6	6.5	6.3	6.5
Lost workday cases	2.9	3.1	3.1	3.0	2.8	2.9	2.9	2.9	2.9
Lost workdays	43.8	45.1	46.5	47.4	45.7	44.6	46.0	49.2	50.8
Chemicals and allied products:									
Total cases	7.8	7.7	6.8	6.6	5.7	5.5	5.3	5.1	6.3
Lost workday cases	3.3	3.5	3.1	3.0	2.5	2.5	2.4	2.3	2.7
Lost workdays	50.9	54.9	50.3	48.1	39.4	42.3	40.8	38.8	49.4
Petroleum and coal products:									
Total cases	7.9	7.7	7.2	6.7	5.3	5.5	5.1	5.1	7.1
Lost workday cases	3.4	3.6	3.5	2.9	2.5	2.4	2.4	2.4	3.2
Lost workdays	58.3	62.0	59.1	51.2	46.4	46.8	53.5	49.9	67.5
Rubber and miscellaneous plastics products:									
Total cases	17.1	17.1	15.5	14.6	12.7	13.0	13.6	13.4	14.0
Lost workday cases	8.1	8.2	7.4	7.2	6.0	6.2	6.4	6.3	6.6
Lost workdays	125.5	127.1	118.6	117.4	100.9	101.4	104.3	107.4	118.2
Leather and leather products:									
Total cases	11.7	11.5	11.7	11.5	9.9	10.0	10.5	10.3	10.5
Lost workday cases	4.7	4.9	5.0	5.1	4.5	4.4	4.7	4.6	4.8
Lost workdays	72.5	76.2	82.7	82.6	86.5	87.3	94.4	88.3	83.4
Transportation and public utilities									
Total cases	10.1	10.0	9.4	9.0	8.5	8.2	8.8	8.6	8.2
Lost workday cases	5.7	5.9	5.5	5.3	4.9	4.7	5.2	5.0	4.8
Lost workdays	102.3	107.0	104.5	100.6	96.7	94.9	105.1	107.1	102.1
Wholesale and retail trade									
Total cases	7.9	8.0	7.4	7.3	7.2	7.2	7.4	7.4	7.7
Lost workday cases	3.2	3.4	3.2	3.1	3.1	3.1	3.3	3.2	3.3
Lost workdays	44.9	49.0	48.7	45.3	45.5	47.8	50.5	50.7	54.0
Wholesale trade:									
Total cases	8.9	8.8	8.2	7.7	7.1	7.0	7.2	7.2	7.2
Lost workday cases	3.9	4.1	3.9	3.6	3.4	3.2	3.5	3.5	3.6
Lost workdays	57.5	59.1	58.2	54.7	52.1	50.6	55.5	59.8	62.5
Retail trade:									
Total cases	7.5	7.7	7.1	7.1	7.2	7.3	7.5	7.5	7.8
Lost workday cases	2.8	3.1	2.9	2.9	2.9	3.0	3.2	3.1	3.2
Lost workdays	39.7	44.7	44.5	41.1	42.6	46.7	48.4	47.0	50.5
Finance, insurance, and real estate									
Total cases	2.1	2.1	2.0	1.9	2.0	2.0	1.9	2.0	2.0
Lost workday cases .....	.8	.9	.8	.8	.9	.9	.9	.9	.9
Lost workdays	12.5	13.3	12.2	11.6	13.2	12.8	13.6	15.4	17.1
Services									
Total cases	5.5	5.5	5.2	5.0	4.9	5.1	5.2	5.4	5.3
Lost workday cases	2.4	2.5	2.3	2.3	2.3	2.4	2.5	2.6	2.5
Lost workdays	36.2	38.1	35.8	35.9	35.8	37.0	41.1	45.4	43.0

¹ Total cases include fatalities.

² The incidence rates represent the number of injuries and illnesses or lost workdays per 100 full-time workers and were calculated as:

$$(N/EH) \times 200,000$$

where: N = number of injuries and illnesses or lost workdays.

 EH = total hours worked by all employees during calendar year.
 200,000 = base for 100 full-time equivalent workers (working 40 hours per week, 50 weeks per year.)

³ Excludes farms with fewer than 11 employees since 1976.

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