Monthly Labor Review
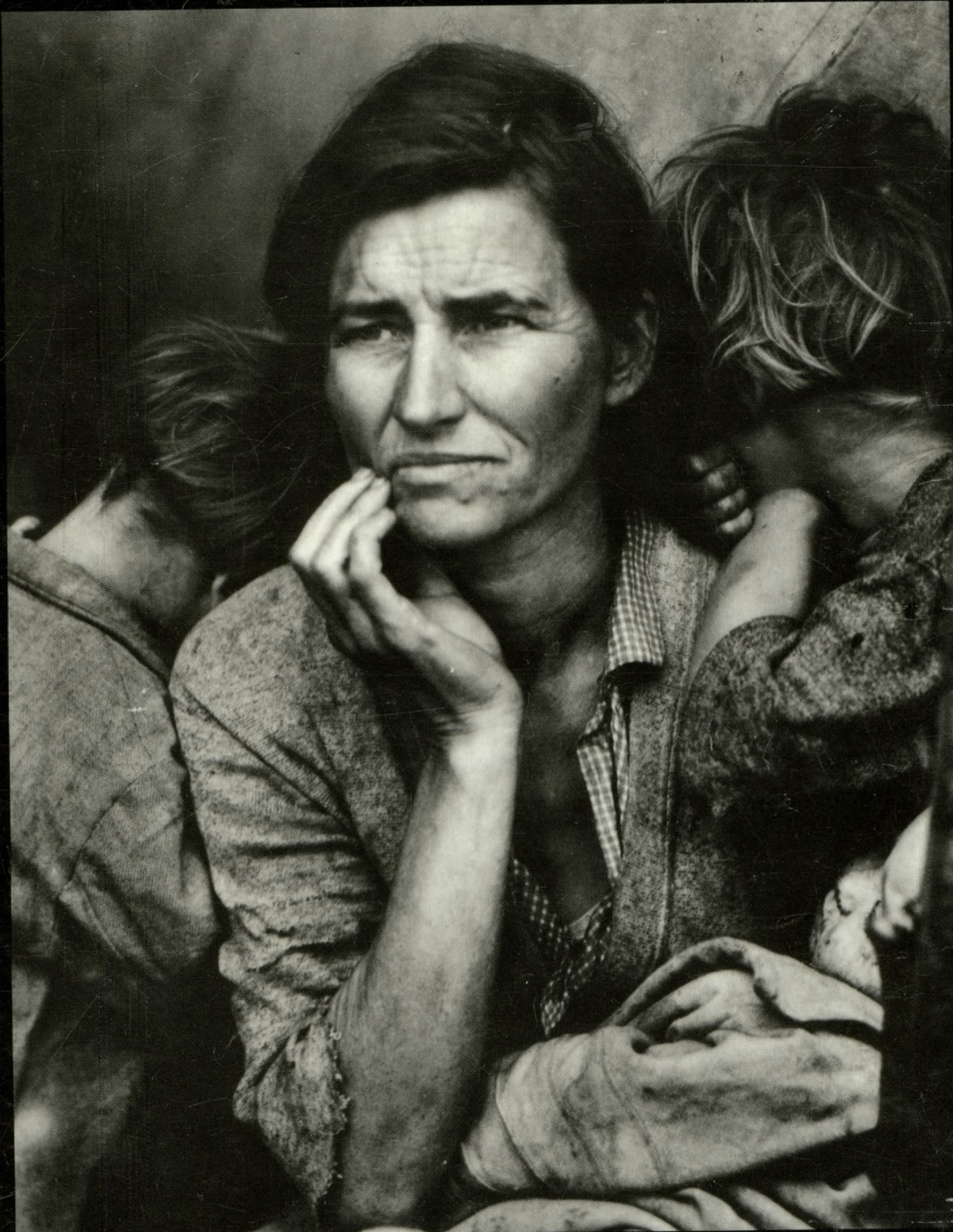
U.S. Department of Labor
Bureau of Labor Statistics
October 1989

In this issue:

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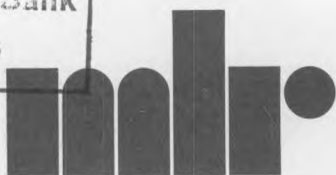Provisions for parental leave

October cover:

Migrant Mother, Nipomo, California
a 1936 gelatin silver print
by Dorothea Lange,
from the exhibition
"On the Art of Fixing a Shadow:
150 Years of Photography."
Photograph courtesy of
National Gallery of Art,
Washington, DC.

Cover design by Richard L. Mathews

Regional Offices and Commissioners

Labor month in review

STATISTICAL NEEDS. At the request of the U.S. Senate Subcommittee on Government Information and Regulation, the Congressional Office of Technology Assessment examined the Nation's statistical system and pointed to ways better data can improve economic policy analysis. The OTA report examines eight "basic questions" about the structure and operation of the economy which, it argues, should be documented by statistical data, and evaluates the capability of the Nation's statistical system to provide such data. Some excerpts from the report:

Measurement difficulty. U.S. national statistics are acknowledged to be among the best in the world. But the U.S. economy is changing in ways that make documenting economic performance much more difficult. Business success today rests heavily on efficient management of new technologies and a grasp of the international marketplace. Competitiveness relies on quality, timeliness, and sensitivity to diverse markets. The most important inputs purchased by a business may be research and engineering information and the skills and education of its employees. Many of these factors are difficult to measure.

The new dimensions of growth and change have also challenged traditional approaches to economc growth policy. Policies that may have effectively encouraged growth in an era of little international trade may be ineffective or even counterproductive in today's global economy. Economic policy will require the best possible measurement of the factors critical for growth and awareness of areas where uncertainty prevails. Serving the new needs of policymakers in a time of change will require a coordinated response of the Nation's statistical agencies. The present management of the statistical agencies makes such a response difficult.

The fault does not lie primarily in the management of individual statistical agencies. These organizations are painfully aware of the problems. The greatest problem appears to be the absence of any central place in government where basic questions about priorities in statistics are being asked, and the lack of effective coordinating among statistical agencies.

Coordination needed. Greater effort needs to be made in coordinating statistical work describing changes in the goods and services available to individual households with the rest of national economic accounting. The Bureau of Economic Analysis does a heroic job in collecting and coordinating statistics from the many agencies with data relevant to the standard national accounting framework. But no group is asked to coordinate statistics in a way that provides an integrated look at the way economic change affects different types of households. Many statistics are available on changes in the quality of health care, access to transportation, and quality in education. The statistical system lacks an organization which is charged with ensuring that a complete and balanced picture is available from this data and that links can be drawn between changes in aggregate levels of spending, changes in household spending, and changes in the quality of such things as health care, education, and transportation available to households. Without such a coordinated effort, it proves very difficult to provide a balanced view of the way economic change has, and may, affect the welfare of different American households.

Resource management. Better management of existing resources could undoubtedly improve the quality of and usefulness of U.S. statistics. But there is a limit to the efficiency gains possible— even with improvements in technology; data collection and compilation is an extremely labor-intensive task. Given the challenges presented by the transformation underway in the Nation's economy, more resources may well be needed simply to maintain the quality of existing statistical series. Saving money by reducing statistical budgets can be shortsighted if inadequate data lead to poor management of public programs or private investments. Important opportunities for growth may be missed and important dangers overlooked. The cost of a poorly run government program may be many times higher than the cost of improvements to statistical agencies. Unlike other government purchases that can be postponed, statistics cannot be turned off and on—once a gap is created, it cannot be easily eliminated.

The 40-page OTA study, *Statistical Needs for a Changing U.S. Economy*, is available for $2.50 from the Superintendent of Documents, Government Printing Office, Washington, DC 20402-9325. □

Three new tables

Three new tables appear in the Current Labor Statistics section of this issue of the *Review*. Table 24 presents changes in employer costs for employee benefits in the private sector, as developed by the Bureau's Employment Cost Index program; Table 36 contains Producer Price Indexes by Standard Industrial Classification (SIC); and Table 47 presents annual productivity indexes for selected industries. For descriptions of the series in the new tables, see "Notes on Current Labor Statistics," pp. 48-57. The tables were extracted by Mary K. Rieg of the *Review* staff, using Bureau-developed Table Producing Language and Print Control Language.

A profile of the working poor

*More than 6 million persons who spent
at least half of 1987 in the labor force
were poor; among families with workers,
those headed by unmarried women with children
have the highest poverty rates*

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and
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Policymakers and researchers have been interested for a long time in the link between the labor market problems of workers and the economic status of their families. When workers are either unemployed or limited to part-time work, or when they have to work at very low wages, their personal finances suffer. But the impact on their families varies. In many cases, it may not be severe. At the extreme, however, several million families live below the official poverty level, even when some of their members are active in the work force. This situation is most common when only one family member works and earns low wages.

This article focuses on persons who are labor force participants but live in poor families. The labor market experiences and family circumstances of these persons are contrasted with those of persons in the work force who are not poor. Some general findings are as follows:

- The *working poor* made up about one-third of all persons age 16 and over who were in poverty. These are the more than 6 million persons whose family income was below the official poverty level in 1987, even though they worked or looked for work at least half of the year.
- Labor market problems such as unemployment or the inability to find full-time work are most likely to cause poverty when they occur in conjunction with low wages. Two-thirds of

the working poor who usually work full time have weekly earnings that are below a "low-earnings" threshold used in this analysis.
- The presence of more than one worker in a family dramatically lowers the probability of poverty. In particular, poverty is rare in husband-and-wife families where both are employed.
- Unmarried women maintaining families are the workers with the greatest risk of living in poverty. Their earnings are rarely supplemented by those of other family members, and their wages, like those of women in general, are substantially lower than men's. Almost one-fourth of single-earner families maintained by women are poor.
- Because education has a strong influence on earnings, individuals with low levels of schooling are overrepresented among the working poor. Most at risk are black workers and women, because, at every level of education, they have lower earnings than white men.

Background and definitions

A number of substantial efforts have been made to study issues which have been broadly labeled "economic hardship."[1] The Bureau of Labor Statistics issued annual reports between 1982 and 1987 entitled *Linking Employment Problems to Economic Status*. In these reports, Cur-

rent Population Survey (CPS) data were used to provide estimates of the number of workers who had encountered any of a list of labor market problems during a given year, however slight they might have been. The number of such persons totaled 33 million in 1985.[2]

This article focuses on a much smaller universe. It first identifies *families* living in poverty and then examines the labor market characteristics and problems of the *workers* in these families.[3] The approach emphasizes the "working poor," a term often used, although with a wide range of meanings. Here, the working poor are defined as *persons who have devoted at least half the year to labor market efforts, being either employed or in search of a job during that period, but who still lived in poor families.* While the 6-month cutoff is somewhat arbitrary, it is meant to exclude not only nonparticipants in the labor force, but also marginal participants. Such persons may also live in poverty, but their economic problems are not likely to have stemmed primarily from their failures in the workplace, or the failure of the workplace to provide jobs. Among those falling into this category are students who look for work for 1 or 2 weeks before finding summer employment and persons who are ill or disabled most of the year.

The most complicated aspect of the analysis presented here is that the working poor, as a group, owe their poverty status to two sets of circumstances: (1) low earnings, resulting from a range of labor market problems, including unemployment, inability to find full-time work, and low wage rates; and (2) a family structure that is conducive to poverty, such as the presence of dependent children and only one earner. Because the poverty threshold—that is, the amount of money needed to stay out of poverty—is a function of family size, it is actually possible for a "poor" worker to have earned much more than a worker who, because of different family circumstances, is classified as nonpoor. The following are some hypothetical examples of persons whose employment and family characteristics leave them in poverty:

- Bob is married, is the father of two children, worked as a construction laborer, and earned $5.25 an hour. His wife did not work. Bob usually worked full time, but because of bad weather and temporary layoffs, he lost several weeks of work. He earned $9,555 in 1987, before taxes.
- Barbara is a single mother with two children, worked in a cleaning store, and earned $3.35 an hour, the minimum wage. She worked all year, except for 2 weeks when the children were sick, and earned $6,700.
- Jane lives alone, worked in a cafeteria 4 hours a day, and earned $3.75 an hour. She would

Blacks and women are at higher risk of poverty because they have lower earnings than white men at all levels of education.

have preferred to work full time, but was unable to find another job. In 1987, she earned $3,750 before taxes.

Families of four, like Bob's, required at least $11,611 in 1987 to be considered above poverty by the Federal Government's definition. Families of three, like Barbara's, required at least $9,056 to be considered out of poverty, while a person living alone, such as Jane, needed an annual income of $5,909 or more. Thus, assuming that their families had no other sources of income, Bob, Barbara, and Jane would each have been a member of the "working poor."

The working poor

Of the 112 million persons who spent at least half a year in the labor force in 1987, 6.4 million were members of poor families. Thus, the poverty rate among workers was 5.6 percent. Exhibit 1 profiles poor and nonpoor workers, comparing their personal traits, labor market performances, and family situations. Table 1 provides additional detail on the demographic and personal characteristics of workers who are poor and those who are not.

While persons from every age, race, sex, and educational group are found among the working poor, the key variables that relate to poverty among workers are family relationship and education. Family structure largely determines the number of potential wage earners, and education is the best predictor of earnings.

Despite the fact that men's earnings are generally much higher than women's, a working husband had a higher probability of his family's being poor in 1987 (4.2 percent) than did a working wife (2.5 percent). The reason is that husbands are more likely than wives to be the sole support of their families. Black workers have very high poverty rates (13.2 percent, compared to 4.7 percent for whites), largely because they tend to live in family arrangements that are most conducive to poverty. Black men are disproportionately in the group of unrelated individuals (those not living with other relatives), and black women are far more likely than women of other racial or ethnic groups to maintain families themselves. Women who maintain families had the highest poverty rates of any of the major groups shown in table 1—nearly 18 percent. The poverty situation for black workers is exacerbated by their relatively low levels of educational attainment (employed blacks are almost 50 percent more likely than whites not to have completed high school) and the resultant low earnings.

Nonagricultural wage and salary workers made up the bulk of the working poor, although 10 percent had been employed in agriculture, an industry with a poverty rate four times that of

the nonagricultural sector. Twelve percent were self-employed, possibly reflecting work in some very small-scale enterprises.[4]

The labor market problems that poor workers experience are quite different from those of non-poor workers. Nearly half of the working poor experienced unemployment at some time during 1987, while only 1 in 8 of the nonpoor did so. (See table 2.) And the median number of weeks of unemployment was much higher for the poor than the nonpoor workers—26 versus 13 weeks. Also, relative to nonpoor workers, poor workers were nearly four times as likely to have been limited, for at least part of the year, to working part time when they would have preferred full-time work.

Nevertheless, these labor market problems, by themselves, generally did not make workers poor. Among both the unemployed and involuntary part-time workers, nonpoor persons outnumbered poor persons by $4\frac{1}{2}$ to 1. In fact, the nonpoor even predominate among those unemployed for half a year or more.

Aside from experiencing unemployment or being limited to involuntary part-time work, the working poor have a strong tendency to work in jobs that pay low wages. Previous research supports the contention that low pay may be the primary cause of poverty among workers. In a 1976 study, Frank Levy addressed the effect of unemployment, measured in terms of work-hour losses, on the earning levels and poverty status of workers.[5] Levy found that merely increasing the number of hours for which poor workers were paid (at their usual wage rate) would have removed few of their families from poverty status. Many of the workers who had lost work due to unemployment or were unable to get full-time work were in poverty primarily because their jobs paid low wage rates.

The situation reflects the workings of low-wage labor markets. Unemployment and involuntary part-time work do not occur randomly across the earnings spectrum. Unemployment, particularly, is most common among workers who have low-wage jobs, as is evident from data on the rates of joblessness in individual occupations.

The significance of low earnings

Determining the prevalence of low earnings among poor and nonpoor workers involves defining exactly what is meant by low earnings, establishing a cutoff line, and then applying the cutoff to the available data on earnings. Information is collected in the March CPS supplement on annual earnings in the prior calendar year, along with weeks worked and usual hours worked. Using these data, past BLS analyses on labor market hardship have focused on the earn-

Table 1. **Characteristics of poor and nonpoor workers, 1987**

[Numbers in thousands]

Characteristic	Poor workers		Nonpoor workers		Poverty rate[1]
	Number	Percent	Number	Percent	
Age, sex, and race					
Total, 16 years and over	6,400	100.0	107,089	100.0	5.6
16 to 19 years	494	7.7	4,275	4.0	10.4
20 to 24 years	1,175	18.4	11,837	11.1	9.0
25 to 54 years	4,163	65.0	76,490	71.4	5.2
55 years and over	568	8.9	14,487	13.5	3.8
Men	3,346	52.3	60,022	56.0	5.3
Women	3,054	47.7	47,067	44.0	6.1
White	4,647	72.6	93,649	87.4	4.7
Black	1,567	24.5	10,269	9.6	13.2
Family relationship					
Husbands	1,669	26.1	38,088	35.6	4.2
Wives	685	10.7	27,114	25.3	2.5
Women who maintain families	1,091	17.0	5,074	4.7	17.7
Men who maintain families	158	2.5	1,857	1.7	7.8
Others in families	860	13.4	17,071	15.9	4.8
Unrelated individuals	1,937	30.3	17,886	16.7	9.8
Education					
Fewer than 4 years of high school ..	2,466	38.5	16,051	15.0	13.3
4 years of high school	2,620	40.9	43,355	40.5	5.7
1 to 3 years of college	867	13.5	22,215	20.7	3.8
4 years of college or more	447	7.0	25,468	23.8	1.7

[1] The number of poor workers as a percent of all workers who spent 27 weeks or more in the labor force in 1987.

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

ings of full-time, year-round workers, identifying them as "low-wage" workers if their yearly earnings fell below the Federal minimum hourly wage multiplied by 2,000.

The methodology was changed for this article for two reasons. First, we wanted to examine the earnings of workers who worked less than year round, particularly because so many of the working poor experienced unemployment. Second, the number of workers employed at the Federal minimum wage, set at $3.35 since 1981, has been gradually declining as nominal wages have increased. The resulting drop in the number and proportion of minimum-wage workers does not necessarily mean that low earnings are any less of an issue as an employment problem.

The major goal in defining a more relevant low-earnings level was to choose a method that accepted the minimum wage as an important indicator of society's view of low wages, but also allowed analytically meaningful comparisons to be made over time. There is no one method which lends itself to this end, and, certainly, the choice of methodologies largely determines the number of low earners that the analysis will identify. (See the appendix for a discussion of the sensitivity of the number of low earners to several low-wage options.)

The low-wage level chosen for this analysis is an average of the minimum-wage levels in effect from 1967 to 1987, calculated from each year's value, *expressed in 1987 dollars.*[6] The average minimum-wage value for the entire 21-year period, in 1987 dollars, was $4.18 per hour. Assuming a 40-hour week, this would translate to weekly earnings of $167.20. This figure was then compared with the weekly earnings for each full-time wage and salary worker to determine whether actual 1987 earnings were above or below the "low-earnings" threshold.

About 2.1 million poor full-time wage and salary workers who were in the labor force at least half the year earned the low-earnings level of $167.20 per week or less. To place this measure in perspective, 1.6 million earned the prevailing minimum wage of $3.35 or less, while 2.6 million earned 150 percent of the minimum or less ($5.03). (See the appendix for details on determining the low-earnings figure.)

The data for 1987 indicate that fully two-thirds of the poor who usually worked in full-time wage and salary jobs had earnings at or below the low-earnings threshold. Three-quarters of these low earners had average weekly earnings of $134 or less, which would be the equivalent of earning the minimum wage of $3.35 for a 40-hour week.

Analysis shows that there is considerable evidence that a strong relationship exists between low earnings and poverty status. Two-thirds of poor full-time workers experienced low earnings. Furthermore, even among the poor full-time wage and salary workers who also experienced either unemployment or involuntary part-time work, most had low earnings. (See table 3.) By contrast, the poverty rate was quite low—only 7 percent—

Exhibit 1. Comparing poor with nonpoor workers

Dimension	Poor workers	Nonpoor workers
Definition	Persons who worked or sought work for 27 weeks or more during the year and lived below the poverty level	Those who worked or sought work for 27 weeks or more during the year and lived at or above the poverty level
Industry and class of worker	About 10 percent were agricultural workers; 12 percent were nonagricultural self-employed; and 78 percent were nonagricultural wage and salary workers	Only 3 percent worked in agriculture; 9 percent were nonagricultural self-employed; and 88 percent were nonagricultural wage and salary workers
Work schedules	Of the 6.4 million working poor, 1.9 million (29 percent) worked full time, year round	Of the 107 million nonpoor workers, 75 million (70 percent) worked full time, year round
Location	Three in 10 lived in nonmetropolitan areas	Two in 10 lived in nonmetropolitan areas
Family relationship	26 percent were husbands; 11 percent were wives; 17 percent were women who maintained families; and 30 percent were persons living outside of families	36 percent were husbands; 25 percent were wives; 5 percent were women who maintained families; and 17 percent were persons living outside of families
Race	73 percent were white; 24 percent were black	87 percent were white; 10 percent were black
Education	About 40 percent were dropouts; 40 percent had completed high school; only 20 percent had attended college	15 percent were dropouts; 40 percent were high school graduates; 45 percent had attended college

among those who had been unemployed but did not also experience low earnings. For those unemployed persons who also had low earnings, the rate was dramatically higher—37 percent. Similarly, those who were forced to work part time at least some of the year even though they would have preferred full-time work had only about a 2-percent chance of being poor if they experienced no other labor market problem. Those who also had low earnings, though, had a poverty rate of 26 percent. Thus, among full-time workers, low earnings alone are an important contributor to poverty, and they greatly increase the probability of poverty among those with other labor market problems.

While low weekly earnings (stemming from low hourly wage rates) were the most common problem for those working poor who usually worked full time, it should be noted that, as with the unemployed, most low-wage earners were not in poverty. In fact, for each low-wage worker in a poor family, three were in families that were not poor. The poor families were most often those in which no one other than the low earner had worked.

As an illustration, table 4 indicates that, among persons earning low wages, husbands in married-couple families, persons who maintain families without a spouse, and unrelated individuals had the highest probability of being poor. These individuals are more likely than others to be the sole support of their families or households. In contrast, when wives or other persons related to a householder work for low pay, their earnings are generally supplemented by others. Hence, their poverty rates are relatively low.

Overall, a full-time wage and salary worker with low earnings had a 25-percent probability of being poor. By comparison, full-time workers who earned more than the low-earnings level had only a 2-percent chance of being below the poverty level.

Low-earning levels were only estimated for full-time workers because past research has found that weekly earnings calculated from annual data for part-time workers are quite unreliable.[7] Although part-time workers work fewer hours, the *hourly* wages of poor part-time workers, could, in theory, be higher than those earned by full-time workers. Still, given the relatively low wages paid part-time workers in general, it is reasonable to infer that a large proportion of poor part-time workers also earned wage rates below the $4.18 "low-wage" level.

The group most affected by low wages was women heading families containing children (not shown in table 4). Three-fourths of these women who worked full time at low wages were living below the poverty level. More will be

said about these workers later.

Of all readily observable personal characteristics, researchers have repeatedly found education to have the most consistently powerful effect on earnings. Aside from education, only one's family background seems to influence earnings and poverty to a large extent, and it does so primarily indirectly, through its influence on education. Other factors, such as years of work experience and test scores, have been found to have less impact in and of themselves.[8] The following tabulation demonstrates the marked difference in the poverty profiles of workers in 1987 in terms of their levels of education:

	Numbers (in millions)	Percent poor
Total, in the labor force 27 weeks or more	113.5	5.6
Fewer than 4 years of high school	18.5	13.3
4 years of high school only	46.0	5.7
1–3 years of college	23.1	3.8
4 years of college or more	25.9	1.7

Numerous explanations are available for the relatively low earnings profiles of blacks and women. To begin with, blacks have lower educational levels than whites. This, by itself, tends to lower blacks' earnings (relative to white men's) and, hence, raise their poverty rates. In addition, both blacks and women have

Table 2. **Incidence of labor market problems among poor and nonpoor workers in the labor force 27 weeks or more in 1987**

[Numbers in thousands]

Labor market problem	Poor workers		Nonpoor workers		Poverty rate[2]
	Number	Percent[1]	Number	Percent	
Total	6,400	....	107,089	....	5.6
Unemployment	2,861	44.7	12,743	11.9	18.3
1 to 26 weeks	1,539	24.0	10,425	9.7	12.9
27 weeks or more	1,322	20.7	2,318	2.2	36.3
Involuntary part-time work	1,795	28.0	8,393	7.8	17.6
1 to 26 weeks	1,228	19.2	6,302	5.9	16.3
27 weeks or more	567	8.9	2,091	2.0	21.3
Full-time wage and salary workers	3,161	....	83,428	....	....
Low earnings[3]	2,127	67.3	6,550	7.9	24.5

[1] Individuals can have more than one labor market problem. The percent shown for low earners applies only to those persons who usually worked in full-time wage and salary jobs.

[2] Percent of workers with each labor market problem who are poor. Percent poor among those with low earnings uses full-time wage and salary workers as the denominator.

[3] Low earnings are equal to or less than $167.20 per full-time workweek. See "Appendix: Measurement of low earnings."

lower earnings than white men at all levels of educational attainment, which also contributes to the relatively high poverty rates of blacks, as shown in table 5. (Women's rates are not affected as much as blacks' because women's earnings are so often supplemented by those of a working husband.) The earning differentials between white men and blacks and women have often been attributed to discrimination, and a variety of theories have been proposed by economists and sociologists which seek to explain the effect of discrimination on differences in earnings.[9]

One factor explaining why blacks and women have lower earnings is that they tend to be in jobs that provide less on-the-job training. Saul Hoffman, in a 1981 article entitled "On-the-job training: difference by race and sex," suggests that this is one reason why blacks and women have lower earnings than white men even when educational levels are similar.[10] Hoffman found that blacks and women were seldom in jobs in which they were currently receiving training. Similarly, jobs held by blacks and women required a relatively short period before workers felt that they were "fully trained and qualified," the assumption being that such time is spent acquiring skills. By virtue of their increased skills over time, which are generally associated with job or career advancement, the earnings of

white men tend to rise at a faster rate than the earnings of blacks and women. Hence, Hoffman concludes that white men are less likely to be trapped at very low wages.

Meeting family needs with earnings

As noted earlier, poverty is a condition closely tied to one's family situation, that is, to the amount of family resources and to the number of people who need to share those resources. For example, the family of a worker with minimum-wage earnings and extensive unemployment will not be poor if another member earns enough to keep the family's income above the poverty threshold. Indeed, most individuals who experienced the labor market problems identified in this analysis were not members of poor families in 1987.

Researchers have also noted how closely a family's economic status is linked to the size or composition of the family. Divorce, the death of a spouse, marriage, birth, or the departure of a child from the home can radically alter both family composition and earnings and thus have as profound an effect on poverty status as unemployment or a decline in wage rates.[11]

Families of the working poor. Of the 7 million families that were in poverty in 1987, 3.4 million were there despite the fact that at least one member was in the labor force most of the year. This represents about 6 percent of all families with a working member. The median income of these families that were below the poverty level was $6,805, compared with $36,716 for nonpoor families with workers. The fact that 83 percent of the families of the working poor had children, compared with only 55 percent of nonpoor families, shows the strong impact of family composition on poverty.

The most dramatic difference between poor and nonpoor families is the percent with only one earner. As shown in the following tabulation, 76 percent of poor families had only one working member, while the majority of nonpoor families had two or more earners.

	Nonpoor families	Poor families
All families with a member in the labor force 27 weeks or more (thousands)	50,012	3,382
Percent with:		
One member in the labor force 27 weeks or more ..	39.3	75.9
Two or more members in the labor force 27 weeks or more	60.7	24.1

Table 3. Number of full-time wage and salary workers with selected labor market problems living below the poverty level, 1987

[Numbers in thousands]

Labor market problems	Number poor	Percent distribution	Poverty rate[1]
Total, 16 years and over	[2]3,161	....	3.7
With at least one labor market problem	2,727	....	14.4
Low earnings, total	2,126	100.0	24.5
Low earnings only	961	45.2	18.1
Low earnings and unemployment only	683	32.1	36.5
Low earnings and involuntary part time[3] only	206	9.7	26.3
All three problems	276	13.0	38.9
Unemployment, total	1,527	100.0	14.2
Unemployment only	440	28.8	6.5
Unemployment and low earnings only	683	44.7	36.5
Unemployment and involuntary part time only	128	8.4	8.9
All three problems	276	18.1	38.9
Involuntary part time, total	642	100.0	12.7
Involuntary part time only	32	5.0	1.5
Involuntary part time and low earnings only	206	32.1	26.3
Involuntary part time and unemployment only	128	19.9	8.9
All three problems	276	43.0	38.9

[1] Percent of workers with each set of labor market problems who are poor.

[2] Includes 434,000 poor full-time wage and salary workers who did not experience any of the three labor market problems listed.

[3] Persons who usually work full time are included in the category of working part time for economic reasons (involuntary part-time workers) if they worked less than 35 hours at least one week when they would have preferred full-time work.

Almost 40 percent of poor families were maintained by women, compared with just 12 percent of nonpoor families. The fact that so many poor families are maintained by women reflects several of the influences on poverty already discussed: these women's relatively low level of education and their resultant low wages; less career advancement among both women and blacks (female family heads are disproportionately black); the lack of other earners in those families; and the interrelationship between family size and the poverty threshold. As the next tabulation shows, when only the family head worked, the poverty rate in such families was 24 percent. Among married-couple families, in contrast, even when only one spouse worked, the poverty rate was only 8 percent. This is because, in the latter case, the one earner is most often a man, and few married men earn the low wages that result in poverty.

<div align="right">Percent
below the
poverty level</div>

All families with at least one
person in the labor force 27 weeks
or more 6.3

Married-couple families, total 4.4
  Only one member in the labor
  force 27 weeks or more 8.2
  Two or more members in the
  labor force 27 weeks or more 2.3

Families maintained by
women, total 17.2
  Householder is the only person
  in the labor force 27 weeks
  or more 24.2

Families maintained by men, total 7.8
  Householder is the only person
  in the labor force 27 weeks
  or more 11.6

When a woman maintains a family and her earning potential is at or near the minimum wage, she generally cannot keep out of poverty. Researchers have found that, to many in this circumstance, welfare, generally in the form of Aid to Families with Dependent Children (AFDC), becomes a more attractive alternative.[12] Even when the welfare benefit is less than the potential earnings, receiving welfare may still be attractive because it does not involve such employment-related costs as child care, transportation, clothing, taxes, and Social Security withholding.

In the study mentioned earlier, Levy found that poverty among working women was not primarily a function of unemployment, or of voluntarily working less than year-round, full-

Table 4. **Poverty rates and percent distribution of poor full-time wage and salary workers who earn less than the low-earnings level, by family type and relationship, 1987**

Family type and relationship	Full-time wage and salary workers earning less than low-earnings level		Percent distribution of poor low-wage earners
	Number (thousands)	Poverty rate[1]	
Total, 16 years and over	[2]8,676	24.5	100.0
In married-couple families	4,914	13.6	31.5
Husbands	1,116	35.5	18.6
Wives	2,193	8.8	9.1
Other	1,604	4.9	3.7
In families maintained by women	1,517	36.3	25.9
Householder	699	58.9	19.4
Other	818	16.9	6.5
In families maintained by men	388	17.8	3.2
Householder	115	38.3	2.1
Other	274	9.1	1.2
Unrelated individuals	1,758	44.4	36.7

[1] Percent of workers in each category who are poor.

[2] Total includes 99,000 persons who are members of unrelated subfamilies which are not shown elsewhere in the table.

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

time hours, or even of earning lower wage rates than other women.[13] In fact, even if poor female heads of household earned a "normal" wage— that is, a wage equal to that of nonpoor women with similar characteristics, such as age and education—for a full-time work year, few would rise above poverty. This reflects the concentration of women, both poor and nonpoor, at low wage rates relative to men and underscores the fact that those women who are the sole earners in their families often have a difficult time staying out of poverty.

Women who maintain families actually have median average weekly earnings for full-time work that are nearly identical to those of married women. The latter, however, almost always have a working husband. Another, perhaps more meaningful, comparison is that families maintained by women have only half the median earnings of married-couple families.[14] Yet their financial requirements are not much less, because their average family size is little different from that of married-couple families.[15]

Families headed by black women are over-represented among the poor, not because black women's earnings are that much lower than white women's (they are not), but because such a large proportion of these women are the sole earners in their families. The proportion of all black families headed by women (no spouse

present) has risen dramatically over the past several decades—from less than 20 percent in 1950 to more than 40 percent in the 1980's.[16] Part of the rise stems from a dramatic increase over this period in the proportion of never-married black women who head families. Also, black women have much higher separation and divorce rates than white women, and the differences are exaggerated by the very low remarriage rates among blacks.[17]

Much of the literature related to the increase in the proportion of black female-headed families focuses on the role of various welfare programs, particularly AFDC, in encouraging such a family structure. In particular, William Julius Wilson and Kathryn M. Neckerman have suggested that the relatively poor economic status of young black men, as evidenced by their low labor force participation rates, has reduced the pool of "marriageable" black men.[18]

Poverty is also relatively common among workers living alone or with unrelated individuals. Three out of 10 poor workers fall into this category. They are younger than most workers, a large proportion being 16 to 24 years of age. They generally work at low wages, and, while they have no family to support, neither can they depend on the earnings of other family members to keep them out of poverty. Of course, many such persons live with others and may share housing costs and possibly other expenses. If their household units were treated as families, it is possible that the combined financial contributions of all members would result in higher-than-poverty incomes. But regardless of living arrangement, each unrelated individual is held to a poverty standard for a one-person economic unit.

The dynamics of poverty

The view presented here, which also appears in many earlier reports on economic hardship, relies primarily on cross-sectional data that provide a snapshot of the working poor. This type of data, however, cannot be used to study the long-term status of the working poor. Most importantly, it cannot be used to determine the extent to which families with workers are persistently poor or the extent to which their poverty is transitory.

Longitudinal surveys, that is, those which interview the same people over a period of years, are the best source of information on the dynamics of poverty. Some research using data from the Panel Survey of Income Dynamics (PSID), a study of 5,000 households which began in 1968, has been conducted on issues related to labor market problems and poverty. For exam-

Almost 40 percent of poor families were maintained by women as the sole earners.

Table 5. Poverty rates of workers in the labor force 27 weeks or more, by educational attainment, sex, and race, 1987

Educational attainment	Poverty rates			
	Men		Women	
	White	Black	White	Black
Total	4.7	10.5	4.8	16.0
Fewer than 4 years of high school	11.7	17.4	11.8	28.7
4 years of high school only	4.4	9.6	5.0	17.8
1 to 3 years of college	3.0	7.4	3.4	8.6
4 years of college or more	1.6	3.5	1.3	3.2

NOTE: Poverty rates are the percent of persons in the labor force 27 weeks or more who are poor.

ple, in addition to Levy's study mentioned earlier, Mary Corcoran and Martha S. Hill have investigated the effect of unemployment on poverty status.[19] These researchers' findings indicate that 10 percent fewer persons would be living in "poor" families if family householders had experienced no unemployment. In their study, they defined poverty as the condition of having an average income, during the 9-year period 1967–75, below 125 percent of the average poverty level. Their findings might have been quite different using cross-sectional data; perhaps unemployment has a greater influence on a family's income and poverty status in any given year than it does over an extended period of time. While the Corcoran and Hill study had a narrow focus—unemployment—it does demonstrate the different view that longitudinal data provide when examining poverty issues.

Research on the *entire* poverty population using data from the PSID indicates that poverty is rarely a permanent state for a family over a long period of time. Many individuals enter poverty because of a major change in their circumstances, such as divorce, the death of a spouse, illness, or unemployment. The PSID results show that, while fully a quarter of all U.S. families (including families with and without workers) spent at least 1 year in poverty between 1969 and 1978, fewer than 3 percent were "persistently poor"—that is, below the poverty level in at least 8 of the 10 years studied.[20] Those who were poor only temporarily had characteristics quite similar to those of the general population, supporting the notion that poverty was the tem-

porary result of sudden changes in family or economic status. The persistently poor were even more concentrated in two overlapping groups—blacks and women who head families—than they are found to be in the annual CPS-derived poverty data. While blacks made up only 12 percent of the U.S. population, they were found to constitute 62 percent of the persons who were persistently poor, a far larger proportion than are poor in any one year. Black women made up a third of the total.

Whether poverty among families with workers is in fact mostly transitory is difficult to infer from these data representing all poor families. Perhaps poverty is more permanent among families of the working poor, because this group is less affected by events such as divorce or death than are the nonworking poor. On the other hand, some poor workers may have enough upward mobility in their jobs or careers that they are able to earn their way out of poverty, an option that is unlikely for a poor disabled person or an elderly woman living alone. In any event, it is fairly clear that, as in all poor families, the persistently poor among families with workers are overrepresented by blacks and, particularly, black women.

The policy implications of the differences between the persistently poor and the temporarily poor are important, because measures to deal with temporary poverty would necessarily be quite different from those designed to deal with long-term poverty.

Conclusion

While unfortunate circumstances can leave many families temporarily below poverty, among workers poverty is chiefly a feature of those with a particular profile. This article suggests that 6.4 million persons in 3.4 million poor families were either employed or in search of a job during at least half of 1987. Poor workers tend to have low levels of education and, often as a result, to be employed at very low wages. Workers most likely to be poor are those who have children and are the only earners in their families. Thus, among workers, women who head families are in the greatest jeopardy of living in poverty.   □

Footnotes

[1] For studies on labor market-related hardship, see: U.S. Department of Labor, *Manpower Report of the President, 1967,* pp. 74–76; William Spring, Bennett Harrison, and Thomas Vietorisz, "Crisis of the Underemployed," *The New York Times Magazine,* Nov. 5, 1972; Herman P. Miller, "Subemployment in poverty areas of large U.S. cities," *Monthly Labor Review,* October 1973, pp. 10–17; Sar A. Levitan and Robert Taggart, *Employment and Earnings Inadequacy: A New Social Indicator* (Baltimore, The Johns Hopkins University Press, 1974); Thomas Vietorisz, Robert Mier, and John Giblin, "Subemployment: exclusion and inadequacy indexes," *Monthly Labor Review,* May 1975, pp. 3–12; Francis Horvath and Janet Scholl, "Measurement of Labor Market Related Economic Hardship," unpublished paper prepared for the National Commission on Employment and Unemployment Statistics, 1977; National Commission on Employment and Unemployment Statistics, *Counting the Labor Force* (Washington, U.S. Government Printing Office, 1979), pp. 57–81; Bruce W. Klein, "The Adequacy of the Earnings Capacity of the Subemployed and Its Policy Implications," Ph.D. diss., The George Washington University, 1981; Robert Taggart, *Hardship—The Welfare Consequences of Labor Market Problems: A Policy Discussion Paper* (Kalamazoo, MI, The W.E. Upjohn Institute for Employment Research, 1982); and Bruce W. Klein, "Measuring Labor Market Related Hardship Using SIPP Data," *American Statistical Association: 1986 Proceedings of the Social Statistics Section* (Washington, American Statistical Association, 1986).

[2] Updated tables 1–19 from the aforementioned reports are available upon request from the Bureau of Labor Statistics, Office of Employment and Unemployment Statistics, Division of Labor Force Statistics, Washington, DC 20212.

[3] Like past BLS efforts, this one utilizes the March work experience and income supplements to the Current Population Survey. These supplements have questions on individuals' work activity during the entire previous calendar year, such as weeks worked, weeks spent in search of a job, and weeks spent out of the labor force, and about income and earnings over the period. The data reported were collected in March 1988 and refer to calendar year 1987.

[4] Data on the self-employed relate to nonagricultural workers only. For this article, we did not investigate the characteristics of the poor self-employed, although an analysis of their detailed occupational characteristics would probably help to understand the group.

[5] See Frank Levy, "How Big Is the American Underclass?" Working Paper 0090–01 (Washington, The Urban Institute, 1977).

[6] This measure is meant for research use only and is in no way intended as an endorsement for indexing of the minimum wage.

[7] Shirley J. Smith and Nancy F. Rytina, "Testing a New Measure of Annual Hours of Work," presented at the annual meeting of the American Statistical Association, Toronto, Canada, August 1983, p. 12.

[8] Christopher Jenks and others, *Who Gets Ahead?* (New York, Basic Books, Inc., 1979), pp. 229–30; and Greg J. Duncan and others, *Years of Poverty, Years of Plenty* (Ann Arbor, MI, Institute for Social Research, University of Michigan, 1984), pp. 111–14.

[9] See, for example, Glen G. Cain, "The Economic Analysis of Labor Market Discrimination: A Survey," in Orley Ashenfelter and Richard Layard, eds., *Handbook of Labor Economics, Volume I* (New York, North–Holland, 1986); and the classic work by Gary S. Becker, *The Economics of Discrimination* (Chicago, Chicago University Press, 1957).

[10] Saul D. Hoffman, "On-the-job training: difference by race and sex," *Monthly Labor Review,* July 1981, p. 34.

[11] Duncan and others, *Years of Poverty, Years of Plenty,* p. 10.

[12] Rosemary Kern and Jack A. Meyer, "Reforming Wel-

fare: Basic Tenets and Fundamental Choices," in Jack A. Meyer, ed., *Ladders out of Poverty* (Washington, American Horizon Foundation, 1986), p. 15. Aid to Families with Dependent Children is the cash assistance program for children with no father, or a disabled or unemployed father, in their home.

[13] Levy, "How Big Is the American Underclass?" Although the earnings of women have increased relative to men's since this study was conducted, the basic finding that full-time low-wage workers cannot escape poverty by increasing their hours worked seems to remain valid.

[14] Bureau of Labor Statistics, *Employment and Earnings,* January 1988, p. 214.

[15] *Household and Family Characteristics: Current Population Reports,* Series P–20, No. 419 (Bureau of the Census, March 1986), p. 13.

[16] William Julius Wilson and Kathryn M. Neckerman, "Poverty and Family Structure: The Widening Gap between Evidence and Public Policy Issues," in Sheldon H. Danziger and Daniel H. Weinberg, eds., *Fighting Poverty: What Works and What Doesn't* (Cambridge, MA, Harvard University Press, 1986), p. 235.

[17] Wilson and Neckerman, in Danziger and Weinberg, eds., *Fighting Poverty,* p. 237.

[18] *Ibid.,* pp. 244–45 and p. 259.

[19] Mary Corcoran and Martha S. Hill, "Unemployment and Poverty," *Social Service Review,* September 1980, pp. 407–13.

[20] Duncan and others, *Years of Poverty, Years of Plenty,* p. 41.

APPENDIX: Measurement of low earnings

Past analyses of economic hardship focused on those workers whose hourly wage rates were at or below the Federal minimum wage. However, because, as of this writing, the legislated minimum wage has not been changed since 1981, its real value declines every year, making comparisons over time of limited analytical value. If the actual minimum is used as a demarcation line, the number of low-wage workers would decline almost every year, as nominal wages rise. For that reason, we have drawn a "low-earnings" line that controls for changes in the real value of the Federal minimum wage. Our low-wage

Table A–1. Nominal, real, and average value of the minimum wage, 1967–87

Year	Legislated minimum wage (nominal dollars)	Real value of legislated minimum wage (1987 dollars)
1967	$1.40	$4.43
1968	1.60	4.88
1969	1.60	4.67
1970	1.60	4.45
1971	1.60	4.27
1972	1.60	4.14
1973	1.60	3.90
1974	2.00	4.43
1975	2.10	4.29
1976	2.30	4.45
1977	2.30	4.18
1978	2.65	4.51
1979	2.90	4.51
1980	3.10	4.33
1981	3.35	4.27
1982	3.35	4.03
1983	3.35	3.87
1984	3.35	3.71
1985	3.35	3.58
1986	3.35	3.51
1987	3.35	3.35
Average, 1967–87	2.47	4.18

Table A–2. Estimates derived from alternative low-earnings levels

Item	1987 minimum wage	1967–87 average minimum wage deflated by:		150 percent of minimum wage
		Research CPI	Official CPI	
Low-earnings level	$134.00	$167.20	$173.20	$201.20
Hourly equivalent	$3.35	$4.18	$4.33	$5.03
Total full-time workers at or below low-earnings level (thousands)	4,654	8,676	9,732	13,855
Number poor (thousands)	1,606	2,127	2,210	2,580
Percent poor	34.5	24.5	22.7	18.6

measure is equivalent to the average minimum wage during the period 1967–87, *expressed in 1987 dollars.* (See table A–1.) That wage came out to be $4.18 an hour.

The Consumer Price Index for All Urban Consumers, Experimental Measure 1 (REBASED)—referred to as CPI-U-X1—was used to convert minimum wages prior to 1983 to the 1987 dollar level. Before 1983, the measurement of homeownership costs in the official CPI included changes based on the asset value of homes. Recognizing that this method failed to distinguish between the investment and consumption aspects of homeownership, the BLS began a program of research in the early 1970's, and the rental equivalence method was introduced in 1983. The BLS also developed, for research purposes, an index which links the rental equivalence method to years before 1983 and provides a series which treats homeownership consistently over time.[1]

The calculation begins with the year 1967 because that was the first year in which those covered under minimum-wage legislation comprised the same broad group of workers that are currently covered.[2] This low-earnings measure, updated each year, will permit more meaningful year-to-year comparisons than would be possible using the actual minimum-wage level in effect at any particular time.

A weekly "low-earnings" value was determined by multiplying $4.18 by 40 hours, yielding $167.20. This figure was then compared with the average weekly earnings for full-time wage and salary workers, which was obtained by dividing annual earnings by the number of weeks worked.[3] The minimum-wage level and 150 percent of this level, used to demonstrate the sensitivity of the number of low-wage workers to the choice of wage level used, were determined in a similar way. The minimum wage of $3.35 was multiplied by 40 hours (= $134.00) and

150 percent of the minimum ($5.03) by 40 hours (= $201.20). These levels were then compared with the computed average weekly earnings of the full-time wage and salary workers. Alternatively, the estimated low-earnings level using the official CPI is $4.33 times 40 (= $173.20). A comparison of these four estimates is presented in table A–2. No values are given for part-time workers, because past research has shown the unreliability of weekly earnings estimates for that group. (See text footnote 6.)

The low-wage level of $4.18 was not applied to hourly earnings directly, because (1) many workers are not paid at hourly rates; (2) earnings such as tips and commissions are generally not reported as part of the worker's hourly rate; and most importantly, (3) the reference period for the other data used in this analysis is a year. No hourly wage data are collected that would apply to such a reference period.

Footnotes to the appendix

[1] For more information on price indexes using a rental equivalence approach, see the following *Monthly Labor Review* articles: Janet L. Norwood, "Two Consumer Price Index issues: weighting and homeownership," March 1981, pp. 58–59; "Indexing Federal programs: the CPI and other indexes," March 1981, pp. 60–65; and "The effect of rental equivalence on the Consumer Price Index, 1967–82," February 1985, pp. 53–55. See also "Changing the Home-ownership Component of the Consumer Price Index to Rental Equivalence," CPI *Detailed Report,* January 1983, pp. 7–13. For a prior use of the CPI–U–X1, see Michael W. Horrigan and Steven E. Haugen, "The declining middle-class thesis: a sensitivity analysis," *Monthly Labor Review,*

May 1988, pp. 3–13.

[2] The 1966 Amendments to the Fair Labor Standards Act extended private employee coverage to about the level which currently exists. Government employees became covered in 1985 as the result of a court decision which rescinded their previous exclusion.

[3] The technique implicitly assumes that full-time work occurred in each week, although it is applied to individuals who *usually* worked full time. Such workers may have worked less than a full-time workweek during some of their weeks of employment.

Developing statistics to meet society's needs

*Three historical illustrations
show how Government agencies adapt
to changing social and economic needs
by developing new concepts and methods*

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is drawn from "The
Changing Focus of
Government Statistics: A
Historical Perspective," an
invited paper prepared by
the authors for the
Sesquicentennial Program
of the American Statistical
Association. Summaries of
other BLS papers presented
at the 1989 ASA conference
appear on pages 29–33.

The development of statistics in the United States has been very much stimulated by the country's need for knowledge about its people, its economy, and the conditions of life. Beginning with the counting of the population as required by the Constitution, government data collection has expanded to cover employment, agriculture, industrial production, prices, earnings, consumption, health conditions, and a variety of other important areas. As the statistical system developed, data collection techniques became standardized and scientific sampling and estimation procedures were developed.

Although the history of this methodological progress is well known, it is surprising that so little attention has been paid to the development of the concepts and definitions that frame the issues and give substance to the results of statistical series. This is especially true when social and economic phenomena are measured, because definitions in these areas tend to change with society's view of the issue.

A statistical system, if it is to remain relevant, must build on the past but also must be prepared for change. Of course, there also must be order in the system for useful statistics to be developed; without consensus on what to measure and on the definitions and classifications involved, statistical knowledge cannot be developed.

Imagine the confusion if analysts were to compare statistics on the textile industry and some surveys included knitting mills while others restricted the information to weaving mills; or, if it had not been decided whether trucking firms that deliver textiles were part of the industry or separate from it, or whether the manufacture of machinery for textile production should be included as part of the industry. Ambiguities such as these led to the establishment of the Standard Industrial Classification system.

Even what would appear to be the simple counting of the people in the country has required the development of definitions and categories that are accepted as relevant to the characteristics of the population at the time of data collection. The earliest U.S. censuses enumerated slaves and free men. Slavery was abolished, but concerns about racial characteristics continued, and the categories for which counts would be made reflected those concerns. Later, the large waves of immigration that took place in the 19th and 20th centuries highlighted the need for additional racial and ethnic classifications.

As congressional legislation required the collection of information on conditions of work, and more particularly on the earnings of working men and women in the United States, further refinement of concepts occurred in that area. The point is that the phenomena underlying

government statistics keep changing, the country's view of the concepts underlying data also changes, and those responsible for the measurement of these phenomena in official statistical series need to take account of the changes in the definitions used in the conduct of surveys.

As conditions in society have changed, new information needs have emerged, and new classification schemes and innovative approaches to the conceptual framework and the definitions within it have been developed and modified to meet those needs. This article discusses three examples of the conceptual contributions of Federal agencies to statistical development.

Employment by industry

National information on employment by detailed industry dates back to the 1899 Census of Manufactures, although the Bureau of Labor Statistics had conducted a number of special surveys in particular areas and industries in the 1880's. Earlier population censuses, such as the one in 1810, made broad distinctions among agriculture, commerce, and manufacturing. By 1910, the population census obtained information on the occupation and industry of every working person. The instructions to the enumerators noted that "the occupation, if any, followed by a child of any age, or by a woman is just as important for census purposes as the occupation followed by a man." The interviewers were further instructed to "describe the branch of industry, the kind of business or establishment, line of work or place in which this person works, as cotton mill, general farm, dry goods store, insurance office, bank."[1]

Some individual States began compiling intercensal employment estimates early in the 20th century, but these data were largely restricted to those industries dominant in each State's economy.[2]

The Bureau of Labor Statistics introduced publication of the *Monthly Labor Review* in 1915 and included employment statistics for about a dozen countries in the statistical section. Recognizing that the information for Great Britain, Germany, and France was superior to that for the United States, BLS began a program to collect and publish industry employment data. Beginning with four industries—boots and shoes, cotton goods, cotton finishing, and hosiery and underwear—the program was the forerunner of today's Current Employment Statistics Program, a Federal–State cooperative venture that covers all nonfarm establishments.

The depression of 1920–21 focused attention on the need for timely industry employment data, and funds were provided by the Congress to expand the survey. By 1923, the survey covered 52 industries grouped into 12 major categories, one of the first examples of industry classification.[3]

In the 1930's, several Federal agencies had their own systems of industrial classification, including the Bureau of the Census, the Internal Revenue Service, and the Social Security Board and its affiliated State Employment Security Agencies. However, the data system was fragmented and comparisons were difficult. Recognizing the need to develop a general industrial classification system for all Federal statistical agencies, developmental work was begun under the auspices of the U.S. Central Statistical Board, the predecessor of the Statistical Policy Office of the Office of Management and Budget (OMB). The first *Standard Industrial Classification (SIC) Manual* was issued in 1939.

The SIC manual has been revised several times, to reflect changes in the economy and in the consensus of how best to organize the information. For example, views have changed back and forth on the proper classification of government activities—either according to the particular function, such as education or health services, or separately as its own industry. Other issues have included the treatment of separate administrative offices, the type of organization (corporate, sole proprietor, for profit/not for profit), character of the work force, and use of technology.

The basic principle of the SIC system is that establishments are classified by type of economic activity. But under that umbrella come several different approaches. In most cases, the dominating factor is product or activity, but, in some instances, end use, nature of raw materials, or market structure may play a role. Thus, one can have the anomaly of one industry producing what seems to be several different products, while what appears to be a single product may be produced in several different industries. For example, SIC 3651—Household Audio and Video Equipment—consists of establishments that manufacture not only VCR's and clock radios for consumer use, but also juke boxes and loud speakers for public address systems. On the other hand, a simple product, chairs, may be produced in one of six different industries depending on whether the chair is wood or metal, upholstered or not, produced for home or for office use. Establishments that produce chairs that convert into beds would be classified in still another industry.

The latest SIC manual, the 1987 revision, is just now being introduced into the Federal statistical system, but discussions continue on many issues. Is the establishment still the best

As conditions in society have changed, new information needs have emerged.

unit of measurement? Should the process of production carry more weight than the output? How do you best classify firms with many products or services? What is the nature of output in the service sector?

It is important to recognize, of course, that once a classification system has been set in place, change is often difficult to achieve. A tradeoff must be made between relevance to new conditions and continuity of time series analysis. Furthermore, the development of historical revisions or overlapping series can be very costly. The SIC has, over the years, provided the consistency and uniformity required for an organized system of Federal statistics. Nonetheless, as the statistical system comes to grips with changes in the economic system that have caused the bulk of its employment and a large part of its output to move to the service-producing sector, the need for a thorough review of the basic theory of the SIC and of the concepts underlying it has become increasingly apparent, and some work has begun in this direction.

Race and ethnicity

One important classification with a long history revolves around race and ethnicity. The subject is also one of considerable sensitivity because the availability of data for a particular demographic group may determine fund allocation or program development.

While at least a partial identification of whites and blacks goes back to the first population census, the underlying concepts and the salient aspects have changed markedly. For example, in the 1890 census, separate information for quadroons and octoroons—persons with one-quarter or one-eighth black parentage—was collected, while in 1930, any mixture of white and some other race was to be reported according to the race of the parent who was not white.

We often behave as though there were a uniform scientific basis for the racial definitions, yet the categories have changed markedly over the years, as has our understanding of them. In 1870, the census form instructed, "Be particularly careful in reporting the class Mulatto. The word here is generic, and includes quadroons, octoroons, and all persons having any perceptible trace of African blood. Important scientific results depend on the correct determination of this class . . . ." A hundred years later, the Statistical Policy Division of OMB, in issuing *Race and Ethnic Standards for Federal Statistics and Administrative Reporting*, noted that "these classifications should not be interpreted as being scientific or anthropological in nature."[4] Similarly, a BLS-prepared *Directory of*

Data Sources on Racial and Ethnic Minorities noted that "the concept of race as used in these data sources does not denote clear-cut scientific definitions of biological stock. Rather it reflects self-identification by respondents or determination of race by an interviewer."[5]

The issue of self-determination versus interviewer determination is an interesting one. In the early years of the census, the determination was always by observation. In the biographical novel, *Sally Hemings*, Barbara Chase-Riboud describes the 1830 visit of a census enumerator to the home of Sally Hemings, a former slave, widely believed to have been the mistress of Thomas Jefferson. The census taker "opened to a new page in his ledger. If Sally Hemings was who and what people said she was, then Thomas Jefferson had broken the law of Virginia . . . . He hesitated for a moment and then wrote: Sally Hemings, Female, between 50 and 60, Without occupation, Race: White."

The practice of racial classification by the interviewer rather than the respondent was carried over into the Current Population Survey (CPS) both for operational and conceptual reasons. Operationally, the fear was that in some face-to-face situations the asking of a person's race might be considered so offensive as to damage further respondent cooperation in the survey. Also, because a major objective was to obtain information on the number of persons in the study population who might be subject to discrimination because of the community's perception of their racial or ethnic heritage, the observation of the interviewer was thought to be a good proxy for community opinion. In the 1970 population census, data collection changed from being done exclusively or largely by personal visit to mail. This, of course, precluded determination by observation, and questions for self-identification were developed.[6] At the same time, rising consciousness among various segments of our society led to a strong demand for statistics based on self-identification. Thus, in 1978, the collection procedures in the CPS were officially changed to self-identification.

In the CPS, tabulation and publication of information separately for whites and all others began in 1948 but, without separate monthly population estimates, only rates and percentages were shown. In 1954, with the introduction of procedures to make monthly population estimates by race, absolute numbers were published for the first time. The nonwhite category—including blacks and other minorities—was used as a proxy for the labor market situation for what were then called Negroes. In the 1960's, it became clear that significant differences existed in labor market experiences within the overall

A tradeoff must be made between relevance to new conditions and continuity of time series.

nonwhite category, and the possibility of tabulating data separately for "Negroes" was explored. Procedures were developed to do this, and, beginning in 1972, data became available monthly for blacks as a separate group.

In the last two decades, rising interest in the extent of Hispanic immigration and the socioeconomic conditions of this group has led to a desire for separate data on persons of Hispanic origin. Yet, there was considerable difficulty in developing an appropriate method of classification. The ethnic identifier with the longest history of use in household surveys is the birthplace of the individual or his or her parents. Obviously, this only identifies first- and second-generation Americans.

Other identifiers that have been used are Spanish surname, mother tongue, and Hispanic origin. A list of Spanish surnames was developed for use in the five Southwestern States with large concentrations of Mexican-Americans, many of whose ancestors had settled in the area centuries earlier and could not be identified by country of birth. The list of surnames was not useful elsewhere in the country because many of the names on the list are also common among persons of Italian, Portuguese, and other Latin but non-Hispanic origin.

Mother tongue—the language spoken at home during childhood—has also been used as an identifier. It also tends to be most successful for first- and second-generation Americans.

For the 1970 population census, a "Spanish heritage" definition was adapted which combined these various identifiers:

(1) Spanish surname or Spanish mother tongue for the five Southwestern States (Arizona, California, Colorado, New Mexico, and Texas);

(2) Puerto Rican birth or parentage in New York, New Jersey, and Pennsylvania; and

(3) Spanish mother tongue in the remaining States.

The confusion and difficulty of using such mixed procedures led to efforts to develop a single, specific question to obtain Hispanic origin. This approach is now used in both the population census and the Current Population Survey. In the CPS, the respondent is asked the origin or descent of each member of the household while being shown a flashcard with such entries as German, Irish, Polish, Mexican, Puerto Rican, Cuban. The CPS interviewers' manual states that "origin or descent refers to the national or cultural group from which a person is descended and is determined by the nationality or lineage of a person's ancestors. There is no set rule as to how many generations

are to be taken into account in determining origin."

Some of the issues we have faced in trying to develop appropriate classifications for race and ethnicity have also been faced in other countries. For example, in Great Britain where the evolution into a multiracial society is relatively recent, and historically there had been little large-scale immigration, the measurement of race and ethnicity has been problematic. In the 1950's and 1960's, questions on country of birth could be used to infer race/ethnicity, and a question on parents' country of birth was added in 1971 to identify the second generation. With recognition that this approach would not last another generation, work was begun on the development of a question on national or ethnic origin. The 1991 British census will probably have such a question—most likely with seven categories: white, black, Indian, Pakistani, Bangladeshi, Chinese, and other. But, there is concern about possible respondent objection, and discussion about the appropriate groups to identify continues.[7]

Wages

In the first 50 years after the American Statistical Association was established, occasional attempts were made to develop statistics on the social and economic status of American workers through wage surveys. Then, as now, however, the underlying concepts, purposes, and definitions were complex and sometimes difficult to understand. Even a century ago, survey programs had to meet more than one objective. In fact, about 100 years ago, a State Commissioner of Labor Statistics, in the first annual report of his agency, wrote:

> Investigations about wages may have several distinct objects. One is, to find the rate of money wages actually paid. Another is, to compare it with the necessary expenses of living. A third is, to compare the laborer's share of the product with that of the capitalist's. A fourth question, perhaps most important of all, is to find in what direction things are moving.[8]

The early attempts collected information on wage rates—either per hour or per year—for different demographic groups—men, women, and children. As early as 1875, the collection of wage statistics was attempted in a State population census. Interestingly, in the State of Massachusetts, experiments were tried to collect wages from two different sources: from employers and from the workers themselves. Data collected from employers—$580 a year on average for males—was considerably higher than the data collected directly from workers—only $482.[9]

It became clear that significant differences existed in labor market experiences within the nonwhite category.

The feeling at the time was that these two sources of reports might contain bias. The employer paying high wages is proud of that fact, it was thought, and would be happy to report this good treatment, whereas the low-wage employer would prefer to conceal the facts from the data collectors. On the other side, the bias could be upward or downward. A worker willing to report was generally thought to be a person of greater than average intelligence—and, therefore, someone likely to be earning a higher salary. On the other hand, a worker reporting his earnings never believes that they are adequate and might well under report them.[10]

A way had to be found to separate wages by occupation and by hours of work if the data were to be meaningful.

While modern society requires that employers maintain accurate records, our efforts to collect data directly from individuals still may suffer from some of these conditions. Studies have found that earnings collected from CPS households, for example, generally are slightly lower than those collected from business records. In addition, definitions have become more complex, and recall more difficult. Many people remember take-home pay—not the overall rate of pay before deductions for Social Security and income taxes, health insurance, and the employee's share of the cost of employer-provided benefits. The statistical community is making efforts to improve the questions asked in household surveys because this source is essential for understanding individual earnings in a family context.

The problem of developing averages and interpreting their meaning was also an issue that was discussed a century ago. Carroll Wright, the first Commissioner of BLS, wrote in the first report of his new Federal bureau in 1886: "A casual examination of these summaries will show that any attempt to prove an American rate of wages must necessarily result in failure. There is no such thing as an American rate of wages."[11]

Even then, it was clear that a way had to be found to separate wages by occupation and by hours of work if the data were to be meaningful for analytical purposes. In those early days, the Nation's railroads hired temporary workers, many of whom did not work full time. In discussing the question of the meaning of aggregate wages with his State colleagues, Mr. Wright expressed the view that it was very easy to collect two simple facts from the railroads— the aggregate wages paid and the total number of workers employed at a given time. Division of one number by the other produced, according to Wright, "a vicious quotient" to represent the average earnings of all railroad workers. This general average could be quite misleading, he maintained, and he insisted that those involved

with data collection must find a way to "individualize" the account so that the actual earnings of each worker would be properly reported.[12]

From these beginnings, two types of wage and earnings statistics have evolved. The effort has involved both the collection of average earnings for business establishments and the study of occupational wages by industry and by geographic area.

The early requests for data often involved "rate of wages paid in different States of the Union . . . for instance, for puddlers in New York or carpenters in Ohio."[13] These surveys, generally of straight-time hourly wage rates, have been collected for a changing group of occupations and industries ever since. Over the years, the surveys have been expanded to cover salary rates as well as wage rates of pay and to provide information on the structure of rates by region and locality, industry, union status, and sex.

The other early source of earnings statistics was from the monthly survey of establishments' employment and payroll. While this survey began in 1915, only payroll totals were available until 1933, when average hourly earnings and average weekly earnings were published for the first time. At about the same time, legislation was passed to establish the payroll survey as a Federal–State Cooperative program, enabling it to expand in size to its current position as the largest monthly establishment survey. This survey was an excellent vehicle for collection of aggregate wage data as well as payroll employment information at the detailed industry level, making its average hourly and weekly earnings series quite popular for general analytical purposes.

These data have been especially useful during recent decades, which have included periods of recession and expansion as well as years of very high inflation and concerns about the trend of unit labor costs. The average earnings series, while affected by problems of shifting mix—of changes in full-time and part-time workers as well as shifts in occupations and earnings— proved useful in gauging overall trends in the economy.

During the early 1970's, Federal Government efforts at wage and price controls highlighted the need for a general wage index based on occupational wage surveys of employers that would include the increasingly important supplements to wages, cover the entire economy, and be free from shifts of employment among occupations and industries. The Employment Cost Index (ECI), currently the best indicator of wage trends, was designed to cover all costs of

workers' compensation—wages, salaries, and employer costs for workers' benefits. The ECI, like the Consumer Price Index, has a market basket with base-period weights; the ECI uses fixed employment weights by occupation and by industry. It has developed in stages to its current profile of more than 100 published series, including occupations, industries, geographic regions, and union status.

Discussion continues on such issues as the treatment of lump-sum and other nonrecurring payments, and the value of noncash payments such as health insurance, retirement contributions, and child care benefits. It is clear that the classification system in the wage area will continue to undergo further development.

Where we are

This article has focused on three examples which illustrate different aspects of the evolution of content in Federal statistics. The first, the system of industry classification, introduced order and relationship into survey design so that statistical data could be defined more precisely, presented more intelligently, and analyzed in a more meaningful fashion. Although a number of revisions and additions to the Standard Industrial Classification system have taken place, the system has promoted stability in data relationships over a long period of time. The industrial restructuring that has taken place, especially over the last few decades, and the challenges of new technology suggest that it may be time for a comprehensive reexamination of the concepts underlying the SIC structure and a modernization of the entire system.

The review of the definitions of race and ethnicity shows the evolution that occurred in collecting and processing these demographic data; it also demonstrates the use of innovative approaches to deal with societal change within the survey process. These issues remain with us. As the country's ethnic composition and the situation of our minority citizens change, our information data base must be kept relevant.

The final example deals with the historical development of an economic concept, clearly one of the most difficult of all the issues with which the survey statistician must deal. Compensation, which can be looked at as a cost to the employer as well as a benefit to the worker, has been measured in one form or another for more than a century, and studies on the issues are still going on. This example is intended to show how a clear understanding of the underlying concept is essential for the collection of meaningful data. The statistical system will need to give far more attention in the future than it has in the past to the identification and delineation of the concepts which underlie our data collection. Indeed, this area is one of the most important elements of nonsampling error that must be dealt with by the statistical system.

As we look to the future, we see emerging issues of economic growth, income distribution, potential labor shortages, illness, pollution, and a whole host of other important topics. Will the progress made in the three areas discussed here be sufficient to carry us into the year 2000 and beyond? Probably not. But we have seen from this brief review that the changing views of society force changes in survey concepts and definitions so that the Nation's data base can keep up with society's needs. We know that changes will occur in the future, and we believe that the statistical community will continue to be responsive to the need of our country for information that remains relevant to the critical issues of our time.   □

The changing views of society force changes in survey concepts and definitions.

Footnotes

[1] Bureau of the Census, *Twenty Censuses: Population and Housing Questions, 1790–1980* (Washington, Government Printing Office, 1979), pp. 43–44.

[2] "Thumbnail Sketches of BLS Statistical Series," Bureau of Labor Statistics, unpublished, Apr. 2, 1964.

[3] *Ibid.*

[4] Katherine K. Wallman and John Hodgdon, "Race and Ethnic Standards for Federal Statistics and Administrative Reporting," *Statistical Reporter*, 1977, pp. 450–54.

[5] Bureau of Labor Statistics, *Directory of Data Sources on Racial and Ethnic Minorities*, Bulletin 1879 (Washington, Government Printing Office, 1975).

[6] For an excellent discussion of the development of these questions, see Elizabeth Martin, Theresa DeMaio, and Pamela Campanelli, "Context Effects for Census Measures on Race and Hispanic Origin," *Proceedings of the American Statistical Association Annual Meetings*, 1988.

[7] Martin Bulmer, "A Controversial Census Topic: Race and Ethnicity in the British Census," *Journal of Official Statistics*, Vol. 2, No. 4, 1986, pp. 471–80.

[8] Connecticut Bureau of Labor Statistics, *First Annual Report* (Hartford, CT, Case, Lockwood & Brainard Co., 1885).

[9] *Ibid.*

[10] *Ibid.*

[11] U.S. Commissioner of Labor, *First Annual Report, Industrial Depressions* (Washington, Government Printing Office, 1886), p. 142.

[12] National Convention of Chiefs and Commissioners of the Various Bureaus of Statistics of Labor in the United States, *Proceedings*, 1889, p. 20.

[13] "Thumbnail Sketches."

Employer provisions for parental leave

*Slightly more than one-third
of full-time employees in medium and large firms
in private industry were covered
by maternity or paternity leave policies;
days off were usually without pay*

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Growth in the number of two-earner families and in the number of working women of childbearing age has stimulated interest in leave arrangements for working parents. But what arrangements are available for new parents who need time off from work to care for infants? A recent Bureau of Labor Statistics survey found that while parental leave may provoke much discussion, it is not widely available to employees. For example, in 1988, only 36 percent of the full-time employees in medium and large firms in private industry were covered by maternity or paternity leave policies—2 percent of them were under policies providing for paid leave.

The Bureau of Labor Statistics' 1988 Employee Benefits Survey provides representative data for approximately 31 million full-time employees of establishments employing 100 workers or more.[1] This article analyzes survey data on the incidence and the provisions of employers' parental leave policies. In addition, legislative developments in this country and abroad are summarized.

Changing demographics

Data from the Current Population Survey[2] document the increasing labor force participation of women. In 1988, 57 percent of all women were in the labor force, as were 71 percent of women between the childbearing ages of 16 and 44 years, up from 42 percent and 47 percent, respectively, in 1968. Further, three-fourths of the working women held full-time jobs in 1988.[3]

The increased labor force participation of women has shifted the balance between working and raising a family. Women are less likely to leave the labor force to raise families today than they were during the post-World War II baby boom. Rather, many women now maintain careers and raise families simultaneously.

For example, in the 1950's, the labor force participation rate of women in the prime childbearing age group (25 to 34 years) was much lower than that of women in the 20-to-24 and 35-to-44 age groups. Today, however, labor force participation of women no longer drops significantly during these prime childbearing years. In 1988, 73 percent of women in the 25-to-34 age group participated in the labor force, approximately the same percentage as those in the 20-to-24 and 35-to-44 age groups.[4]

These demographic changes have sparked interest in the work-family relationship. Such issues as employer-sponsored dependent care, flexible work arrangements, and, in particular, parental leave are of interest to all workers, especially parents.

Incidence and provisions

The Employee Benefits Survey defines parental leave as an employer policy allowing a father or mother to take time off from work to care for a newborn child. (See box below.) Because such policies may differ for mothers and fathers, the Bureau collected data separately on maternity and paternity leave provisions.

Maternity leave was available more frequently than was paternity leave. Thirty-six percent of full-time employees of medium and large private firms (11 million men and women) were covered by maternity leave policies, and 17 percent of employees (5 million) by paternity leave policies. Both types of leave were almost always without pay; nearly nine-tenths of the employees under each type of policy could receive only unpaid days off. (See table 1.)

Maximum durations of unpaid maternity and paternity leave varied, but commonly were between 6 and 26 weeks. The most common maximum duration of unpaid maternity leave was 6 weeks, covering 19 percent of the employees. (See table 2.) Other common maximum durations were 13, 26, and 52 weeks. Employees rarely could receive more than 52 weeks of unpaid maternity leave. The maximum durations of unpaid paternity leave were similar to those of unpaid maternity leave. The average maximum duration was 19.1 weeks for unpaid maternity leave and 18.3 weeks for unpaid paternity leave.[5]

Paid parental leave was rare in medium and large firms in private industry. Only 2 percent of full-time employees were covered by paid ma-

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Defining and measuring parental leave

Parental leave is an employer policy allowing a father or mother to take time off from work to care for a newborn child. A parent must reasonably expect to have his or her job or a similar job available upon returning to work, and cannot be penalized by the employer for taking parental leave.

The benefit is separate and in addition to other established leave plans available both to new parents and other employees, such as vacations, sick leave, and personal leave. According to the 1988 Employee Benefits Survey, nearly all employees in medium and large firms in private industry received paid vacations, and almost one-quarter received paid personal leave. Although an employee might be permitted to use these leave benefits to care for a newborn child, such benefits were excluded from the definition of parental leave used in this analysis. Thus, the data in this article may understate the availability of leave benefits for new parents.

However, the survey's definition of parental leave is not restricted to policies specifically limited to maternity and paternity leave. It also includes general leave-of-absence plans—covering such situations as extended training or military leave—under which employees can reasonably expect an opportunity to take time off after the birth of a child. In fact, benefits were usually provided through these general leave-of-absence policies, rather than through specific parental leave plans.

Only nondisability parental leave benefits are considered in this analysis. Replacement income for disability associated with maternity is provided under an employer's short-term disability program, as required by the Pregnancy Discrimination Act of 1978. (The act prohibits employers from discriminating against female employees on the basis of pregnancy, childbirth, or related medical conditions.) In 1988, 89 percent of full-time workers in medium and large firms in private industry had short-term disability benefit plans.

The data in this article refer to potential rather than actual beneficiaries. The Employee Benefits Survey did not obtain information on the number of workers actually taking parental leave. Therefore, data on the incidence of leave policies may reflect the composition of a company's work force. Employers may offer parental leave benefits more frequently when employees are expected to need such benefits.

Also, the data show the percent of workers covered by parental leave policies without regard to gender, age, or family status. For example, suppose an establishment with 100 employees (50 men and 50 women) had a maternity leave policy applicable to all workers. In this case, the survey would count all 100 employees as covered by the maternity leave policy, even though many were not women of childbearing age.

Employees who were required to work a minimum period, such as 6 months or 1 year, before they qualified for parental leave were considered covered by the policy, even if they had not yet fulfilled the service requirement.

ternity leave, and only 1 percent by paid paternity leave. Both types of leave, usually provided at full pay, generally were limited to 1 or 3 days. Workers who received paid parental leave sometimes received unpaid parental leave as well; in these instances, they would be paid for a short time at the beginning of the leave period with the remainder of the period being unpaid.

The survey reported separate data for employees in three broad occupational groups: professional and administrative, technical and clerical, and production and service. The professional and administrative and technical and clerical groups (white-collar workers) were more likely to have parental leave than were the production and service group (blue-collar workers). (See table 1.) Maternity leave policies covered 40 percent of professional and administrative employees and 36 percent of technical and clerical employees, compared with 33 percent of production and service employees. Paternity leave benefits were available to 20 percent of professional and administrative workers, 18 percent of technical and clerical

workers, and 14 percent of production and service workers.

White-collar workers also had a longer average duration of parental leave benefits than did blue-collar workers. The maximum duration of unpaid maternity leave averaged 20.8 weeks for professional and administrative employees and 19.5 weeks for technical and clerical workers, compared with 17.6 weeks for production and service workers. For paternity leave, maximum duration averaged 20.7 weeks for professional and administrative employees, 18.8 weeks for technical and clerical employees, and 16.0 weeks for production and service workers.

Parental leave policies differ in their provisions for continuing health care and life insurance coverage during periods of leave, the amount employees must pay to continue these benefits, and the accrual of seniority and pension plan credits. However, these items were not studied in the 1988 survey.[6]

The Employee Benefits Survey of State and local government employees in 1987 shows that more than half of these government workers were covered by policies providing unpaid maternity leave, and one-third by policies for unpaid paternity leave. As is the case in private industry, paid maternity and paternity leave coverage was rare in the public sector.[7]

Mandated parental leave

United States. In addition to policies established by individual firms, laws in six States call for nondisability parental leave benefits. Maine, Minnesota, Oregon, Rhode Island, Wisconsin, and Vermont require employers to provide a specified duration of unpaid parental leave for male and female private sector employees.[8] Duration of the mandated leave ranges from 6 to 13 weeks. These States have laws requiring that an employee receive his or her job or a similar job upon returning from parental leave. The laws also prohibit employers from reducing the compensation or seniority of an employee who returns from leave within the legally required time.

In the Employee Benefits Survey, workers in States mandating parental leave benefits were counted as receiving the mandated level of benefits. If the employer offered more generous benefits than legally required, then the workers were counted as receiving the higher level.

The issue of parental leave has also received congressional attention. The U.S. Congress, over the last several years, has debated bills that would require employers to grant employees unpaid leave to care for a newborn, newly adopted, or seriously ill child.[9]

Table 1. Percent of full-time employees covered by parental leave policies, medium and large firms in private industry, 1988

Type of policy	All employees	Professional and administrative employees	Technical and clerical employees	Production and service employees
All full-time employees	100	100	100	100
Employees covered by parental leave[1]	36	40	37	33
Maternity leave	36	40	36	33
Unpaid days only	30	34	31	28
Paid days only	1	2	1	1
Both unpaid and paid days	1	1	1	1
Information not available on type of days	3	3	3	3
No maternity leave	(2)	1	(2)	(2)
Employees not covered by parental leave	64	60	63	67
All full-time employees	100	100	100	100
Employees covered by parental leave[1]	36	40	37	33
Paternity leave	17	20	18	14
Unpaid days only	14	17	15	12
Paid days only	1	1	1	1
Both unpaid and paid days	(2)	(2)	(2)	(2)
Information not available on type of days	1	2	2	1
No paternity leave	19	20	19	19
Employees not covered by parental leave[1]	64	60	63	67

[1] Parental leave refers to nondisability maternity leave or paternity leave. Both male and female employees were counted as being covered by maternity or paternity leave if the benefit was available. (See box, p. 21, for detail on defining and tabulating parental leave.)

[2] Less than 0.5 percent.

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

Other countries. While the United States thus far has emphasized parental leave policies developed by employers alone or through collective bargaining, such benefits in other countries are frequently government-mandated. Statutes in Sweden, Canada, and the United Kingdom provide pertinent information for the current debate in the United States over a national parental leave policy.

Sweden has perhaps the most comprehensive parental leave policy in the world. The Child Care Leave Act of 1978 permits Swedish employees to take up to 12 months of leave to care for their children. The leave can be divided between both parents and can be taken in full days or in partial-day increments until the child reaches age 8. While on parental leave, employees are paid 90 percent of pay for 9 months and a flat rate for the remaining 3 months. The payments are from a national insurance fund, financed by a tax on employers and through general government revenues.

Canada has a decentralized parental leave policy. Its only nationwide parental leave policy applies to Federal Public Service employees.[10] All but one of the provincial and territorial governments (the Northwest Territories) mandate unpaid maternity leave benefits for public and private sector workers in their jurisdictions. A minority of jurisdictions also mandate unpaid paternity leave. In most jurisdictions, the duration of leave is 17 or 18 weeks.[11]

In the United Kingdom, the Employment Protection Act of 1975 mandates parental leave benefits for female employees. Qualifying women can receive post-disability maternity leave with pay equal to 90 percent of salary for up to 6 weeks. The benefit is paid from a Maternity Pay Fund, which is financed by payroll taxes on employers and employees. In addition to paid leave, women can receive unpaid leave for up to 29 weeks after the birth of a child. Women who work for employers with more than six workers are guaranteed reinstatement after maternity leave. Male employees receive no statutory parental leave benefits.

LEAVE BENEFITS FOR NEW PARENTS have become more important as the demographic composition

of the work force has changed. The Bureau of Labor Statistics projects that women will account for 64 percent of U.S. labor force growth to the year 2000, suggesting that interest in parental leave is not likely to subside.[12] Employers and governments are beginning to address the parental leave issue, and the debate can be expected to continue. □

Table 2. Percent distribution of full-time employees covered by unpaid maternity and paternity leave policies, by maximum duration of leave, medium and large firms in private industry, 1988

Maximum duration[1]	All employees	Professional and administrative employees	Technical and clerical employees	Production and service employees
All full-time employees covered by unpaid maternity leave policies[2] ...	100	100	100	100
Under 6 weeks	2	3	3	2
6 weeks	19	13	14	25
Over 6 but under 8 weeks	(3)	(3)	(3)	(3)
8 weeks	4	4	3	5
Over 8 but under 13 weeks	11	11	11	12
13 weeks	10	11	12	8
Over 13 but under 26 weeks	23	25	24	22
26 weeks	17	17	20	14
Over 26 but under 52 weeks	4	4	4	4
52 weeks	9	11	8	7
Over 52 weeks	(3)	1	(3)	(3)
Average duration (weeks)	19.1	20.8	19.5	17.6
All full-time employees covered by unpaid paternity leave policies[2] ...	100	100	100	100
Under 6 weeks	4	4	4	5
6 weeks	22	16	19	30
Over 6 but under 8 weeks	(3)	1	1	(3)
8 weeks	2	2	3	1
Over 8 but under 13 weeks	12	11	10	14
13 weeks	14	16	15	12
Over 13 but under 26 weeks	16	15	15	19
26 weeks	17	19	22	12
Over 26 but under 52 weeks	1	1	1	2
52 weeks	11	16	10	7
Average duration (weeks)	18.3	20.7	18.8	16.0

[1] Data include policies that provide a maximum number of unpaid days off; paid days off are not included.

[2] Data are for male and female employees. See box, p. 21, for detail on defining and tabulating parental leave.

[3] Less than 0.5 percent.

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

Footnotes

[1] The 1988 Employee Benefits Survey is a sample survey of approximately 2,500 private sector establishments in the District of Columbia and all States, except Alaska and Hawaii. The survey provides data on a variety of employee benefits, such as leave benefits, short- and long-term disability coverage, health benefits, life insurance, retirement and capital accumulation plans, child care, employee assistance programs, and educational assistance. Survey data are

published in a Department of Labor news release, in Bulletin 2336, *Employee Benefits in Medium and Large Firms, 1988* (Bureau of Labor Statistics, 1989), and in articles in the *Monthly Labor Review.*

[2] The Current Population Survey, a monthly survey of about 55,800 households, provides information on the labor force, employment, and unemployment by demographic and economic characteristics.

[3] *Employment and Earnings*, Bureau of Labor Statistics, January 1989.

[4] Susan E. Shank, "Women and the labor market: the link grows stronger," *Monthly Labor Review*, March 1988, pp. 3–8; and *Employment and Earnings*, Bureau of Labor Statistics, January 1989.

[5] Computation of the average maximum durations excludes workers not under maternity or paternity leave policies.

[6] For further data, see "Family Leave Policies of U.S. Employers Reviewed," *Spencer Research Reports*, April 1988, pp. 323.11.01–5.

[7] Data on benefits for State and local government employees can be found in *Employee Benefits in State and Local Governments, 1987*, Bulletin 2309 (Bureau of Labor Statistics, 1988).

[8] A number of States mandate unpaid leave for the period of disability associated with maternity. This analysis deals solely with nondisability parental leave to be used by a working parent to care for a newborn child. At the time of the survey, Tennessee mandated nondisability leave for working mothers, but that statute has since been amended to require only disability maternity leave. The Maine and Vermont laws were not effective until after collection of the 1988 survey data. Therefore, these statutes did not affect the parental leave data in this article.

[9] As of the summer of 1989, the Family and Medical Leave Act (Senate Bill 345, House of Representatives Bill 770) was being considered by the Congress. These bills would guarantee an employee's right to reinstatement following parental leave and would require the continuation of such employee benefits as health insurance during the leave. Employers with fewer than a specified number of workers would be exempt from the proposed legislation.

[10] Time off, generally unpaid, may be granted to both male and female employees. Unemployment insurance payments may be received during these periods.

[11] Laurie Schwartz, *Parental and Maternity Leave Policies in Canada and Sweden* (Kingston, Ontario, Industrial Relations Center, Queens University, 1988), pp. 53–60.

[12] *Projections 2000*, Bulletin 2302 (Bureau of Labor Statistics, 1988), p. 22.

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 life insurance: a new look

*For the first time, the Bureau
of Labor Statistics derives average amounts
of life insurance coverage for full-time employees
of medium-sized and large private firms*

Adam Z. Bellet

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Employer-sponsored life insurance is an important source of survivor protection for working men and women. Benefits are available both to assist with immediate expenses and to make up for the loss of family income. Amounts of life insurance benefits can vary widely. As one example, white-collar workers more commonly receive benefits based on their salary, while blue-collar workers are more likely to receive a fixed-dollar benefit. This difference is pointed up in a new analysis, which looks at average life insurance amounts derived from all benefit formulas.

In 1988, 92 percent of full-time employees of medium-sized and large private firms participated in life insurance plans financed wholly or partly by their employers. Insurance protection at 10 years of service ranged from an average of $20,020 if earnings were $15,000 a year to $54,440 if earnings were $55,000. On average, amounts of insurance rose only slightly with length of service. Thus, at 30 years' seniority, benefits averaged $20,161 and $54,581 at the aforementioned earnings levels.

These findings are from an analysis of insurance plan provisions obtained through the Bureau of Labor Statistics' 1988 Employee Benefits Survey. Data were collected from U.S. private firms employing at least 100 workers. The survey, which did not include Alaska and Hawaii, used a sample of 2,493 establishments that represented almost 107,000 firms with more than 31 million full-time employees. Data are presented for all types of workers combined and separately for three broad occupational groups: professional and administrative, technical and clerical, and production and service workers. The first two groups together are often labeled white-collar workers, in contrast to the blue-collar production and service workers.[1]

The Bureau has been reporting on the incidence and characteristics of employer-sponsored life insurance plans since the inception of the Employee Benefits Survey in 1979. Included in its reports are tabulations on methods of determining basic life insurance (for example, percent of participants covered by earnings-based versus flat-dollar-amount benefit formulas) and on amounts of insurance available under various plans (such as the percent of workers covered by

plans providing $5,000 or $10,000 of coverage).

This article reports on the first effort to utilize the data on plan provisions to derive information on *average amounts* of life insurance available to full-time employees, regardless of the formula used to compute benefits. Given the specific ages, salaries, and lengths of service incorporated in the analysis, the results provide a comprehensive measure of the life insurance protection provided by medium-sized and large private firms.

Type of analysis

To conduct the analysis, a computer model was developed that takes account of the variables that influence benefits under individual life insurance plans, such as salary and, in some instances, length of service. In addition, the model applies provisions for minimum and maximum benefits and rounds protection amounts as specified by the plan.[2] The model also factors in age-related benefit reductions, allowing review of the insurance available to older workers.

In performing the analysis, life insurance benefits were projected under the provisions of each insurance plan for employees at various assumed annual salary levels and lengths of service. Benefits were computed for an employee in mid-career (for example, age 40) and for older employees.

The same assumptions were applied to all three occupational groups studied, even though some of the salary levels would not be widely applicable in each group. That is, it is not likely that many production and service workers had a salary as high as $55,000, nor is it likely that many professional and administrative workers had a salary as low as $15,000 or $20,000, in 1988. Because benefit formulas may be designed for a specific group of workers having a known range of earnings, benefits shown at these unlikely earnings levels may not be meaningful. Hence, in examining the results of this analysis, one should focus on benefits at earnings levels that are appropriate for a particular occupational group.

Benefit levels

Table 1 shows the average life insurance amounts at the length-of-service and salary levels studied. In each occupational group, the benefit amount increased only slightly with service, yet rose significantly as salary increased. This is expected, as plans frequently base benefits on earnings and rarely on length of service.[3] White-collar workers had the greater average benefit available at all salary levels, with the disparity widening with increasing annual salary. Thus, at $15,000, white-collar benefits were 44 percent higher than blue-collar benefits, while at $35,000, they were 55 percent higher.

Average life insurance amounts for white-collar workers were more sensitive to salary changes than were those for blue-collar workers. For example, when salaries of white-collar workers increased 80 percent, from $25,000 to $45,000, average insurance benefits increased 60 percent. For blue-collar workers, the increase was 50 percent over the same salary range. The analysis for blue-collar workers in the upper salary ranges, though, may be skewed due to the aforementioned assumptions regarding the inapplicability of higher earnings to this occupational group. Over the lower applicable salary range of $15,000 to $25,000, when salary increased 67 percent, insurance increased 44 percent.[4] In any event, one would expect greater sensitivity of white-collar workers' in-

Table 1. Average life insurance coverage for full-time plan participants by annual salary and length of service, medium-sized and large private firms, 1988

Years of service	Annual salary					
	$15,000	$20,000	$25,000	$35,000	$45,000	$55,000
All participants						
3 years	$19,735	$24,656	$29,430	$37,635	$46,028	$54,156
5 years	19,820	24,741	29,515	37,720	46,113	54,241
10 years	20,020	24,940	29,714	37,919	46,312	54,440
20 years	20,127	25,048	29,822	38,027	46,420	54,548
30 years	20,161	25,082	29,855	38,061	46,453	54,581
Professional and administrative participants						
3 years	23,579	29,617	35,518	45,870	56,785	67,536
5 years	23,599	29,637	35,538	45,891	56,806	67,556
10 years	23,927	29,965	35,866	46,218	57,133	67,884
20 years	24,122	30,160	36,061	46,413	57,329	68,079
30 years	24,185	30,223	36,123	46,476	57,391	68,142
Technical and clerical participants						
3 years	21,609	27,659	33,243	43,217	53,702	63,662
5 years	21,646	27,696	33,280	43,255	53,739	63,700
10 years	21,820	27,870	33,454	43,428	53,913	63,873
20 years	21,901	27,951	33,535	43,509	53,994	63,954
30 years	21,927	27,976	33,560	43,535	54,020	63,980
Production and service participants						
3 years	16,317	19,935	23,569	29,482	35,176	40,678
5 years	16,468	20,086	23,720	29,633	35,327	40,829
10 years	16,601	20,218	23,852	29,766	35,459	40,962
20 years	16,667	20,285	23,918	29,832	35,526	41,028
30 years	16,687	20,304	23,938	29,852	35,545	41,048

NOTE: Life insurance figures are average amounts prior to any age-related reductions in benefits.

surance to salary changes because in 1988 nearly 80 percent of the white-collar participants in medium-sized and large firms had life insurance tied to earnings, compared with 50 percent of the blue-collar participants.

With life insurance benefits expressed as a percent of employees' annual salaries, average benefits for white-collar participants were always greater than annual salary, while for blue-collar participants that was true only at the lower salary levels. The following tabulation presents projected life insurance benefits as a percent of annual salary at 10 years of service:

| | Annual salary | | |
Participants	$15,000	$25,000	$55,000
All plans	133	119	99
Professional and administrative	160	143	123
Technical and clerical .	145	134	116
Production and service	111	95	74

As shown in table 2, dollar amounts of protection at any one salary level varied widely among the individual life insurance plans in the survey. Nevertheless, clusterings are apparent, reflecting the prominence of plans paying benefits equal to the annual salary or flat amounts such as $5,000, $10,000, and $20,000.

Life insurance for older workers

The Age Discrimination in Employment Act prohibits employers from discriminating against any person with respect to hiring, compensation, or privileges of employment based on the person's age. Originally, the Act protected individuals between ages 40 and 65, but as amended, it now applies to all employees 40 years of age or older.

One effect of the Age Discrimination in Employment Act is to ban mandatory retirement. Because of this, employees may choose to continue working past typical retirement age. For such employees, the cost of employer-sponsored life insurance may continue to increase, as the life expectancy of older workers declines. To compensate for this added cost, many employers have reduced the amount of life insurance protection afforded these workers.[5]

Life insurance provisions for older workers varied widely in medium-sized and large private firms. In 1988, plans covering 56 percent of full-time participants imposed benefit reductions for older workers. The amount of insurance was first reduced at age 65 in plans covering 57 percent of those participants with age-related reductions, at age 70 for 32 percent,

Table 2. Percent of full-time life insurance participants by amounts of coverage at 10 years of service and selected annual salaries, medium-sized and large private firms, 1988

Coverage	Annual salary					
	$15,000	$20,000	$25,000	$35,000	$45,000	$55,000
Total	100	100	100	100	100	100
Less than $5,000	4	4	4	4	4	4
$5,000–$9,999	11	9	9	9	9	9
$10,000–$19,999	49	20	19	18	17	17
$20,000–$29,999	11	35	33	5	6	6
$30,000–$39,999	22	8	9	32	4	4
$40,000–$49,999	3	19	2	2	28	1
$50,000–$59,999	1	3	20	7	5	37
$60,000–$69,999	(1)	2	2	1	4	1
$70,000–$79,999	(1)	(1)	2	17	1	1
$80,000–$89,999	—	(1)	—	1	(1)	3
$90,000–$99,999	(1)	(1)	(1)	(1)	17	1
$100,000–$109,999	—	(1)	(1)	2	1	2
$110,000–$119,999	—	—	—	—	1	15
$120,000 or more	(1)	(1)	1	1	1	5

1 Less than 0.5 percent.

NOTE: Percentages are for life insurance amounts prior to any age-related reductions in benefits. Dash indicates no employees in the given category. Because of rounding, sums of individual items may not equal totals.

Table 3. Average life insurance coverage for older full-time workers by age, length of service, and annual salary, medium-sized and large private firms, 1988

Age and years of service	Annual salary					
	$15,000	$20,000	$25,000	$35,000	$45,000	$55,000
Age 65						
10 years' service	$17,355	$21,697	$25,884	$33,121	$40,516	$47,749
30 years' service	17,361	21,703	25,891	33,127	40,523	47,755
Age 70						
10 years' service	13,588	16,829	19,949	24,965	30,499	35,923
30 years' service	13,594	16,835	19,955	24,971	30,506	35,929
Age 75						
10 years' service	12,866	15,931	18,854	23,366	28,529	33,579
30 years' service	12,872	15,938	18,860	23,372	28,535	33,585

NOTE: Life insurance figures reflect policies in force prior to June 1989 Supreme Court decision; see note 5 in text.

and at other ages for the remaining 11 percent. A slight majority of the participants in plans specifying age-based benefit reductions could expect a single reduction in insurance; the remainder could expect more than one benefit decrease. A common arrangement in plans with multiple reductions was to lower benefits to 65 percent of prior coverage at age 65 and to 50 percent at age 70. White-collar participants more commonly were in plans with age-based reductions than were blue-collar workers.[6]

Coverage for employees ages 65, 70, and 75 with 10 and 30 years of service is shown in table 3. As in table 1, there is little variation in benefit amounts based on length of service, and benefits still increase as salary increases. More significant is a 12- to 14-percent drop in protection at age 65 from comparable pay and service amounts unreduced by age provisions.[7]

As table 3 shows, the decline in benefits was most prominent after age 65, particularly between ages 65 and 70. Over this 5-year span, insurance amounts dropped 22 to 25 percent, depending on length of service and salary; between ages 70 and 75, the decline was 5 to 7 percent.

Table 4 presents the distribution of life insurance benefit amounts for older workers at the $15,000 and $35,000 salary levels. Prior to age-based reductions in coverage, 15 percent of participants at the $15,000 salary level had life insurance coverage of less than $10,000 (table 2). At age 65, however, 25 percent of plan participants had coverage of less than $10,000. The percent of employees who had less than $10,000 coverage continued to increase to 43 percent at age 70 and 48 percent at age 75.

At the $35,000 salary level, the percent of plan participants with less than $10,000 of coverage is lower than at the $15,000 level and does not rise as sharply as age increases. Only 13 percent of employees received these low benefits prior to age-related reductions, the figure

increasing to 20 percent at age 65, 26 percent at age 70, and 30 percent at age 75. For purposes of comparison, the percent of employees earning $35,000 and having life insurance benefits of $70,000 or more fell from 22 percent prior to reductions to 6 percent at age 75. □

Table 4. Percent of full-time life insurance participants by amounts of coverage at 10 years of service and selected ages and annual salaries, medium-sized and large private firms, 1988

Coverage	Age and annual salary					
	Age 65		Age 70		Age 75	
	$15,000	$35,000	$15,000	$35,000	$15,000	$35,000
Total	100	100	100	100	100	100
Less than $5,000	11	10	17	15	22	18
$5,000–$9,999	14	10	26	11	26	12
$10,000–$19,999	46	17	40	25	37	27
$20,000–$29,999	12	10	8	12	7	10
$30,000–$39,999	15	27	7	20	6	20
$40,000–$49,999	1	5	1	4	1	3
$50,000–$59,999	(1)	5	(1)	4	(1)	3
$60,000–$69,999	(1)	2	—	1	—	1
$70,000–$79,999	(1)	13	(1)	6	(1)	5
$80,000 or more	(1)	3	(1)	1	(1)	1

[1] Less than 0.5 percent.

NOTE: Percentages shown reflect policies in force prior to June 1989 Supreme Court decision; see note 5 in text. Dash indicates no employees in the given category. Because of rounding, sums of individual items may not equal totals.

Footnotes

[1] Excluded from coverage in the survey are benefits for executive management, part-time, seasonal, and temporary employees, as well as for employees who are on regular travel assignments (such as airplane crews and long-distance truckdrivers). In addition to life insurance, the survey examines the incidence and detailed characteristics of health care, short- and long-term disability insurance, retirement, and capital accumulation plans, and a number of paid and unpaid time-off items. It also reports on eligibility for a variety of other benefits. Key findings of the 1988 survey are in *Employee Benefits in Medium and Large Firms, 1988*, Bulletin 2336 (Bureau of Labor Statistics, 1989).

[2] Provisions for maximum amounts of insurance, designed to limit benefits that are tied to earnings, are more common than provisions for minimums. Formulas providing benefits expressed as multiples of earnings (such as one or two times annual salary) commonly stipulate rounding rules; insurance amounts are most often rounded to the next higher thousand dollars.

[3] In 1988, 58 percent of life insurance participants in medium-sized and large firms were provided with a basic benefit expressed as a multiple of their earnings, and an additional 7 percent derived their benefit from a graduated schedule based on earnings. Of the remaining participants, 31 percent were provided with a flat benefit amount and 3 percent with a flat benefit based on service.

[4] Data from the Bureau's Employment Cost Index show average hourly wages and salaries of $11.84 for white-collar occupations in 1988, compared with $9.59 for blue-collar occupations. See *Employment Cost Indexes and Levels, 1975–1988*, Bulletin 2319 (Bureau of Labor Statistics, 1988), p. 48.

[5] Prior to June 23, 1989, reductions in life insurance benefits for older workers were governed by guidelines established in the U.S. Department of Labor's 1979 interpretive bulletin (29 CFR 860.120). These guidelines allowed benefit reductions if justified by increased costs. On June 23, 1989, the Supreme Court, in *Public Employees Retirement System of Ohio* v. *Betts*, ruled that the Department of Labor's cost-justification guidelines were invalid. Data in this article reflect life insurance plan provisions in effect prior to this ruling.

[6] For further information on age-related reductions in life insurance, see Michael A. Miller, "Age-related reductions in workers' life insurance," *Monthly Labor Review*, September 1985, pp. 29–34.

[7] Table 3 includes all plans in the survey. For those without age-based insurance reductions, the inputs are the same as those for table 1. The differences between the two tables would be greater if each were restricted to plans calling for age-related reductions in life insurance benefits.

Conference papers
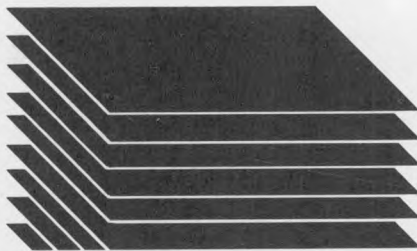
Twenty-two BLS analysts presented papers at the Sesquicentennial Program of the American Statistical Association, August 6–10, 1989, in Washington, DC. The paper by Commissioner of Labor Statistics Janet L. Norwood and Deborah P. Klein is presented in full on pp. 14–19 of this issue. Summaries of the presentations of other BLS participants appear below.

Abstracts of the papers have been published by the American Statistical Association in *1989 Program and Abstracts—Joint Statistical Meetings*. For copies of individual papers, write to the author, Bureau of Labor Statistics, 441 G Street N.W., Washington, DC 20212.

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Thomas J. Plewes, "Pointing the Way: Data, Analysis, and Decision-making."

The role that statistics play in allocation of Federal funding for transfer payments to other units of government, in escalation of tax rates and payments to individuals, and in determining the distribution of seats in the House of Representatives is well known. Less well understood is the role that statistics play in the process of formulating decisions and evaluating results.

As the statistical arm of the Department of Labor, the Bureau of Labor Statistics attempts to direct its program to support understanding of issues of current importance. Plewes discusses the relationship between statistics and decisionmaking, examining the changing role of the Bureau in collecting, analyzing, and publicizing data of importance in policy formulation. The challenges posed by the impact of new technology and the increasing sophistication of policy analysis are explored.

Plewes details the linkage between data and policy in three special data collections on issues of national impor-

tance—dislocated workers, day care, and drug testing in industry. He points out that the statistical agency is emerging as an honest-broker, causing a tension between the need for objectivity and policy relevance that agencies must confront on a daily basis.

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Penny L. Asbury, "A Survey on the Temporary Help Supply Industry."

The Bureau of Labor Statistics has been conducting and publishing wage surveys of specific industries since the first annual report of the Commissioner of Labor in 1886. In a continuing effort to cover emerging industries, the Bureau conducted its first occupational wage survey of the temporary help supply industry in 1987. The decision to undertake this study was influenced by the rapid growth of the industry in recent years.

One of the many challenges of this survey was to develop a sample design that balanced the need for national and locality data within extreme budget constraints. Federal policymakers required national data to assess the impact that the industry's growth has had on the total economy. Other data users needed statistics that reflected the industry's locality-based wage structure. To yield results that met the needs of both types of data users, a sample design was developed that allowed the data to be published nationally, for 26 localities, and also, in combination, for large metropolitan areas.

The results of the survey showed that hourly wages in this industry are variable and locality based. The large metropolitan areas, which employed 61 percent of the industry's workers, consistently had higher pay levels than the industry's national averages. However, even among the individual metropolitan areas, some differences were large for the same occupations.

For other occupations, area differences were not as great, depending on the number of employees in the occupation and on the specificity of the occupational definitions.

The sample design very effectively uncovered the high variability among the areas in the locality data and provided a basis for understanding the national averages. As expected, the wage structure for the temporary help supply industry proved to be locality based, but due to the broad interest in temporary help supply workers and their wages, any future survey of this industry must also develop national statistics.

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Terry M. Burdette, Steve Cohen, and C. Joseph Cooper, "Recent Changes in the White-Collar Pay Survey."

Since 1959, the Bureau of Labor Statistics has conducted an annual pay survey in selected professional, administrative, technical, and clerical occupations (the PATC survey). Since its inception, the survey has been related to the paysetting process for white-collar employees of the Federal Government. Over time, this survey has gradually expanded in geographic and industrial coverage, and in the number of occupations studied. It is currently the only probability based source of white-collar salary data by occupational work level.

Since 1985, the survey scope has been expanded from 45,000 establishments to more than 285,000 establishments. This increase was accomplished by lowering the minimum employment size of the establishments to be surveyed to a uniform 50 employees for all industries, and by adding the private service industries not previously studied.

These expansions were carried out by surveying segments of the goods-producing and service-producing sectors in alternate years. This paper describes the resulting changes in the sample design, the estimation process used to combine the separate segments into all-economy data, and the effects that the expansion had on survey estimates.

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Jaqueline A. Richter, "Integrating the Employment Cost Index and the Employee Benefits Survey."

In response to a request from Congress to improve statistics for white-collar pay and benefits, the Bureau of Labor Statistics will integrate the Employment Cost Index (ECI) and the Employee Benefits Survey (EBS), with common data collection beginning in 1990. The quarterly ECI focuses on the employer cost of wages and benefits. The EBS focuses on benefit plan provisions, with data for half its scope being published each year.

Integrating the two surveys will permit associations between many benefits and costs, elimination of duplicate data collection, and publication of benefit provisions in small establishments. Suitable common definitions, scopes, and data collection methods are needed. The reliability of the estimates should be maintained or improved.

The ECI program will continue to collect all data during an initiation personal visit to a sample establishment and then update these data quarterly for 4 years. The EBS will remain an annual survey, with all data collected during the initiation and updated in the appropriate survey year.

The EBS will adopt the ECI method of selecting a sample of occupations within an establishment, with probability proportionate to occupational employment. Simulations on data from the 1986 EBS indicate that the quality of the published data will not change.

A successful small firms test collected EBS data from establishments with fewer than 50 employees. Another test collected EBS data by telephone, with no difficulty, for the 75 percent of ECI establishments which will already be in the sample at the time joint collection starts. The results of a data collection test currently in the field will help determine the most efficient way to collect the joint data.

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Charles C. Mason, Mary Lynn Schmidt, Robin Duncan, and Nathan Amble, "A Comparative Analysis of Price Indexes Produced by National Governments for Older Consumers."

The United States currently does not produce a price index based solely on the price and expenditure experience of older citizens. However, the United Kingdom, Canada, and Japan do produce such indexes. The Bureau of Labor Statistics has calculated an experimental price index for older consumers for the period January 1983 through March 1988. In this paper, the results of the experimental index are presented and compared to the price index behavior reported by those countries producing similar statistics.

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Judith Hellerstein, "The Effects of Sample Size on Variances of the Producer Price Index."

This paper describes a simulation study which was conducted to examine the variances of the Producer Price Index (PPI). In the study, price data from six lowest-level publication cells in six different industries were examined. Price indexes and variances for each cell were computed for 13 months of data (January 1987–January 1988). Subsampling using various subsample sizes was conducted for each cell. The variances computed from the indexes of each subsample size were then compared to the variance computed for the full PPI sample of each cell.

The results in each cell indicated that, in all cases, sample size reductions led to increased variance levels. This is consistent with statistical theory. However, there was no constant proportionality between sample sizes and variances. The existing relationships are examined and discussed in detail as they related to differences in the underlying economic characteristics of each cell.

The results of this study illustrate the importance of sample size to PPI data. The number of price quotes used in the estimation of price change in an industry can have dramatic effects on variances and the quality of published indexes. Future research will focus on developing industry-specific models for predicting variances based on the inherent economic characteristics of each particular industry. These models will then be used to better distribute PPI sample allocations across industries and to predict the gradual deterioration of samples to ensure that timely resampling takes place.

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Chester H. Ponikowski and Sue A. Meily, "Controlling Response Error in an Establishment Survey."

Response error may be defined as the difference between the value obtained from the survey and the desired or true value.[1] Frequently, business establishment records used for responding are not consistent with specific survey definitions. At the Bureau of Labor Statistics, a record check technique has been used in the Current Employment Statistics (CES) survey to identify and control response errors resulting from records used for responding.

The CES record check instrument compares the survey definitions to the establishment's recordkeeping system. The objectives are to identify definitional differences in recordkeeping and to request that deviations be corrected in future reports. To prolong correct reporting, a form is sent to the respondent listing adjustments to the reported data which the respondent agreed to make. The interviews are conducted by telephone using Computer Assisted Telephone Interviewing (CATI), which is less expensive than personal visits.

The results obtained from the CES CATI record check survey provide information on the percentage of reports needing adjustments and the percentage of reporters agreeing to adjust.[2] Errors which occur most frequently within each data item are identified. These percentages provide an indirect measure of the response error in the survey. Overall, a substantial percentage of respondents require some ad-

justment to their reported employment; two-thirds of these respondents agreed to make the adjustments. However, many of the errors occur infrequently or affect only a small percentage of the employees at an establishment. Also, there is a canceling effect at the aggregate because some of the error sources produce a positive bias, while others result in a negative bias. A direct measure of response error computed from a previously conducted record check survey indicates that reporting errors would result in less than one percent bias in total employment estimates.[3]

The quality of the Current Employment Statistics survey is reflected in its total survey error: annual revisions to total employment estimates have averaged 0.2 percent over the last five years. The continued focus on controlling response error will further reduce the magnitude of annual revisions. Beginning in 1990, a modified record check survey will be conducted for all CES reporters with 250 or more employees.

[1] M. H. Hansen, W. N. Hurwitz, and M. A. Bershad, "Measurement Errors in Censuses and Surveys," *Bulletin of International Statistical Institute,* no. 38, 1961, pp. 359–74.

[2] Chester H. Ponikowski and Sue A. Meily, "Controlling Response Error in an Establishment Survey," *ASA Proceedings of the Section on Survey Research Methods,* forthcoming.

[3] G. S. Werking, A. R. Tupek, and R. L. Clayton, "CATI and Touchtone Self-Response Applications for Establishment Surveys," *Proceedings of the U.S. Bureau of the Census Annual Research Conference.*

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Lawrence Boehm, "Reliability of Proxy Response in the Current Population Survey."

Self-other differences in knowledge and cognitive processing are of practical importance to survey researchers because a number of national surveys allow "any responsible" adult member of a household to respond for all the members of that household. Such proxy responses are permitted in the Current Population Survey (CPS) and account for approximately 50 percent of the interviews conducted. The CPS is a monthly survey of approximately 59,000 households in the United States, from which monthly estimates of labor force status (employed, unemployed, and not in the labor force) and related characteristics are developed.

A laboratory study evaluating the reliability of proxy responses in the CPS has been conducted. The study involved interviewing two members of household using the CPS questionnaire. Subjects answered questions for themselves (self response) and for the other family member (proxy response). Thus, it was possible to compare the proxy response to the self response for each person. Respondents also provided a confidence rating of their ability to report acceptable answers and a rating of their knowledge of the other person's job or job search.

Responses from self and proxy respondents were generally correlated, yet proxy respondents disagreed with self respondents on 30 percent of the CPS questions. Further, it was not uncommon for proxy respondents to provide data that resulted in different labor force classifications, especially when responding for those not in the labor force and the unemployed. Although the study found that proxies' knowledge and confidence ratings were generally high, the ratings were unrelated to performance, suggesting that screening proxy respondents on the basis of self-rated confidence or knowledge would not be useful.

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Maria P. Fracasso, "Reliability and Validity of Response Categories for Open-Ended Questions in the Current Population Survey."

For open-ended questions, the interviewer is the interpreter of information, and hence frequently must classify respondent answers to fit into response categories. However, when interpretation takes place, errors may occur. The labor force section of the Current Population Survey (CPS) contains several open-ended questions.

The present research has focused on the reliability and validity of the current categories as well as CPS interviewers' interpretation and categorization of respondents' answers to these open-ended questions. Based on the apparent underuse of some present CPS category choices and overuse of the "other" category, an alternative set of category choices was designed. Actual CPS interviewers and expert CPS analysts used a sorting technique to classify responses into either the present or an alternative set of category choices for each of the open-ended questions.

This paper discusses the usefulness of alternative versus present category choices in facilitating use of all category choices and eliminating the potential for misclassification of individual responses. In addition, it examines the consistency with which interviewers and experts categorize responses for the open-ended CPS questions.

*   *   *   *

Mark Palmisano, "Respondent Understanding of Key Labor Force Concepts Used in the CPS."

This paper discusses research identifying conceptual and wording difficulties in the Current Population Survey (CPS) questionnaire which may influence the classification of an individual's labor force status. The purpose of this research has been to determine whether the same operational definitions of the phrases and words used in the CPS labor force classification questions are shared among individual respondents and between respondents and the survey designers. Focus groups have been conducted using paraphrasing and probing techniques to evaluate respondents' interpretation of CPS questions.

Analyses of the results have verified the presence of at least one particularly ambiguous concept—"on layoff." Alternative questions have been developed based on results obtained thus far. A method to evaluate the relative data quality of these alternative questions also has been developed, and further laboratory tests and field tests are planned to confirm these results.

*   *   *   *

Leslie A. Miller, "Improving Comprehension and Recall in the Consumer Expenditure Interview Survey."

Survey research often involves written questionnaires administered by personal interviews. Literature documents the care that must be taken in designing

such interviews to minimize reporting errors. Two concerns of the present work on the Health and Medical Expenditure section of the Consumer Expenditure Interview Survey were possible lack of comprehension and the inability to stimulate recall when lengthy recall periods are involved.

The research reported here extends the recent integration of survey methodology and cognitive psychology by attempting to increase comprehension and recall abilities through the use of investigative laboratory techniques. Preliminary methodology included: focus groups, probing, paraphrasing, protocol analysis, and questionnaire revisions. Matching of written versus oral responses was used to obtain response reliability. Current feasibility field testing of the revised forms will indicate whether the procedures used to increase comprehension and to improve recall will be replicated and expanded to the rest of the questionnaire.

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Arthur L. Hughes and Flora K. Peitzmeier, "Weighting and Imputation Methods for Nonresponse in CPS Gross Flows Estimation."

Estimates of month-to-month gross flows in the Current Population Survey (CPS) can provide insight into the movements underlying the month-to-month net change in the cross-sectional (stock) data. However, the usefulness of gross flows data is substantially weakened because of significant errors such as bias due to nonresponse. Also, gross flows data are inconsistent with the monthly stock data. The current gross flows nonresponse adjustment methodology consists of revising the tabulated data so that agreement with the current month's independently derived male and female population estimates is achieved.

In this paper, the current nonresponse adjustment procedure and several alternative procedures were evaluated based on a simulation study. Gross flows data are based on CPS sample persons who match in two consecutive months. In the simulation study, some of the respondents were designated as partial nonrespondents

(individuals with a response in one month but not the other), and each adjustment procedure was applied.

Results of the simulation study indicate that multiple imputation is superior to the other procedures, producing a nonresponse bias that is one-fourth as large as the bias from the current method. The multiple imputation procedure "fills in" the nonrespondents' missing values with two or more values from a pool of respondents. A weighting procedure was second best, producing a nonresponse bias that is one-half as large as the bias from the current method. In this method, the sampling weights of the respondents were adjusted to account for partial nonrespondents within specified labor force and age categories.

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Richard Clayton and Louis Harrell, "Developing a Cost Model for Alternative Collection Methods: Mail, CATI, and TDE."

The publication of high quality economic data begins with collecting accurate data on a timely basis from our respondents. As a part of ongoing improvement efforts, research began at BLS in 1984 to investigate methods of improving the timeliness and accuracy of collection in the Current Employment Statistics (CES) program. The CES is a monthly survey of establishments providing some of the earliest information on the health of the U.S. economy. There is a growing array of data collection methods available through advances in technology, each with differing characteristics affecting the cost and error structure of survey operations.

Computer Assisted Telephone Interviewing (CATI) involves interviewers calling respondents and directly entering answers in a computer which instantly edits the data and provides other improvements. Thus, CATI combines the power of inexpensive computers and the strengths of direct telephone contact with respondents to collect accurate data in a short, controllable timeframe. This powerful tool dramatically improves the collection of time-critical information, but may be more expensive than the mail question-

naire process currently used. Under Touchtone Data Entry (TDE), the respondent calls a computer which uses digitized phrases to ask the survey questions. The respondent enters data and answers other questions by pushing the appropriate pads of a touchtone telephone. TDE maintains the high response rates available under CATI, and eliminates many of the costly, labor intensive activities of both mail data collection and CATI.

In providing a generalized approach to evaluating alternatives, this paper discusses each method, its costs and performance measures, as well as other implications of employing automated collection methods. Current cost and performance measures are combined into a single overall yardstick for comparison, and future costs are estimated to provide additional insight to survey planners considering alternative collection methods.

*   *   *   *

Clyde Tucker, "Characteristics of Commercial Residential Telephone Lists and Dual Frame Designs."

A particularly attractive type of telephone survey design combines information from a sample drawn from a directory of residential numbers and a supplementary sample selected through Random Digit Dialing (RDD). Use of the list can not only save time and money but also increase response rates if the list sample residences are contacted by mail prior to the survey. The RDD supplement is needed to provide coverage for numbers not on the list. Unfortunately, the effectiveness of this design depends upon characteristics of the list which often are not available to the user.

This paper addresses the problem by examining the characteristics of lists for four sample areas in the Bureau of Labor Statistics Current Point-of-Purchase Survey. These sample areas vary by size and geography. Among the issues considered are the cost of the lists, how they are constructed, their accuracy, and their usefulness for improving survey efficiency.

Carol Spease, "Comparison of Variance Estimators for Producer Price Index Data."

In an effort to measure sample variability in the Producer Price Index (PPI), the Bureau of Labor Statistics is evaluating variance estimators based on a sample replication method. The method, called balanced half-sample replication, is commonly used in surveys that have a complex sample design and in which a ratio, such as the PPI, is estimated.

In this paper, a simulation study is described. Three estimators of variance of the long-term index using the balanced half-sample method were computed and compared to determine which form of the estimator is most appropriate for PPI data. The comparison of the estimators was based on three criteria that measure the accuracy of the estimators.

In the study, 19 months of actual price data from three manufacturing industries were used. Original sample units (companies) formed finite populations for sampling in the simulation study. Repeated samples were drawn from the populations, and indexes, variances, and comparison statistics were computed and averaged over all samples drawn.

As a result of the study, one of the estimators was found to perform best on the PPI data. The observed variance estimates of the best variance estimator were closer to the true population variance than the other two variance estimators, which at times severely underestimated the true population variance. Also, when confidence intervals were formed around each of the sample indexes based on the size of the corresponding sample variances, the intervals formed using the best variance estimator contained the true population index more often than the intervals formed using the other two variance estimators.

The estimator found in the study to be the best estimator of the variance of the long-term index will be incorporated into the Bureau's index estimation system and variances of the estimates will be computed on a routine basis. Eventually, the index variances will be published along with the index values.

*   *   *   *

Richard Tiller, "A Kalman Filter Approach to Labor Force Estimation Using Survey Data."

A new approach to estimating Statewide employment and unemployment in 39 States and the District of Columbia was introduced by the Bureau of Labor Statistics in 1989. It is based on a time series model that treats the observed monthly labor force estimate from the Current Population Survey (CPS) as the sum of an unobserved true labor force value plus an error arising from sampling only a portion of the population. The true values are represented by a dynamic regression equation that uses data on the insured unemployed and payroll employment as explanatory variables with time varying coefficients.

Each month, as new CPS sample data become available, an algorithm known as the Kalman filter is used to estimate the true labor force by combining current and past sample data with data on the explanatory variables. The purpose of this approach is to reduce the effect of high variance in the Statewide CPS estimates due to small sample sizes.

*   *   *   *

John T. McCracken, "The International System of Labor Statistics."

The International Labor Organization (ILO) is a constituent body of the United Nations with 154 member countries. Its mission is to establish and improve standards of work and living conditions throughout the world. Labor statistics are essential to this mission. The ILO publishes data on the economically active population of nations, including estimates of the employed and unemployed, hours of work and wages, costs, consumer price indexes, occupational injuries and diseases, strikes, and lockouts. Many countries lack a complete range of labor statistics, while others seek to overcome problems of poor data quality.

To achieve universal availability and quality of data, the ILO develops standards for labor statistics and assists developing nations in instituting statistical systems through recommendations and technical aid. ILO Conferences of Labor Statisticians develop standard concepts, definitions, methodology, and publication criteria to promote high quality and to facilitate international comparisons and analysis. The standard-setting decisions of the ILO take the form of Conventions or of Recommendations. From a constitutional and legal standpoint, there is a fundamental difference between the two types of decisions. Conventions are designed as obligation-creating instruments. On the other hand, Recommendations are designed as guidance-providing instruments.

In 1985, the ILO adopted Convention 160 concerning labor statistics. Ratifying countries will be obligated to produce labor statistics in nine program areas using internationally adopted standards. The required statistics cover the economically active, the employed and unemployed, earnings and hours, wages, labor costs, consumer prices, household expenditures, occupational injuries and diseases, and industrial disputes. The Convention provides guidance for concepts and definitions, and for collecting, compiling, and publishing data.

The U.S Senate is expected to ratify this Convention in the late fall of 1989. The Convention is an essential tool in establishing a universal system of high quality labor statistics. The BLS international comparisons program measuring how the United States is faring in relation to other countries will be greatly enhanced by the adoption of Convention 160 by the nations of the world.   □

Convention report
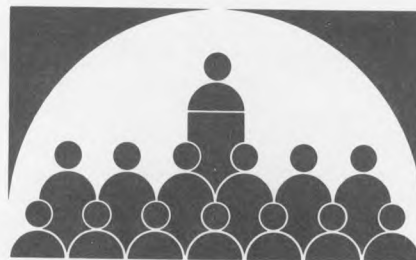
United Auto Workers 29th constitutional convention

Henry P. Guzda

Democracy—economic, social, and political—was the dominant theme of the 29th constitutional convention of the United Auto Workers (UAW). It was a gathering that could have been confrontational and divisive, particularly because of a well-organized and growing dissident faction within the union. Yet, when the proceedings ended, it was clear that the philosophy of the majority prevailed, while the rights of the dissidents were honored and their protests heard. In addition, the delegates passed a host of resolutions pledging to support trade unionism and solidarity on a global scale, and to organize foreign-owned auto production facilities in the United States. The attendees also pondered the future of the trade union movement, while remembering the struggles for economic and social justice that have continued for more than 50 years.

New directions or old?

Observers of auto industry labor relations have noted the emergence of dissidence in the UAW over the past decade. A group calling themselves the "New Directions" movement and led by Jerry Tucker, director of region 5, argue that the union's leaders have coopted members' rights by cooperating with employers in joint labor-

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management programs. They contend that auto manufacturers have used joint programs (for example, team concept production and Japanese style management) to erode seniority provisions, reduce wage rates, and jeopardize other collective bargaining benefits by pitting local unions against each other during contract negotiations and in plant closing situations—a process they call "whipsawing." New Directions members, paradoxically, want union leaders to abandon labor-management cooperation and revert to the philosophy of adversarial labor-management relations prevalent in the postwar era of the 1950's. New Directions candidates have challenged incumbent leaders for local and national offices, and have even used the judicial process to win some contested elections.

Proponents of New Directions and the incumbent UAW leaders have debated the philosophy of the union. Donald Douglas, president of local 594 in Pontiac, MI, claims "the whipsawing is just tearing us [the UAW] apart and eroding our solidarity." UAW president Owen Bieber, however, contends that "critics insult the intelligence of UAW members by suggesting that participation in joint programs will compromise or contaminate the values of union workers or subvert the union's independence." He further explained, "just because we use the vehicle of joint activities to pursue some of our objectives, does not mean that we plan to surrender any of the other tools and resources that are available to help us achieve our goals."

Bieber took issue with charges that the union's executive leadership failed to protect worker rights and challenge antiunion onslaughts in a corporate "age of greed." He retorted that the UAW authorized 817 strikes over the

past 3 years, and that 81,721 UAW members marched on picket lines. He reminded the delegates that at a time when many workers have suffered economic hardships, the UAW accomplished several goals, including:

- Job bank programs benefiting nearly 40,000 members and their families.
- Winning Trade Adjustment Assistance for 677,000 members.
- Obtaining $200 million in Job Training Partnership Act funds.
- Protection for more than 100,000 jobs through job security provisions in pattern-bargaining contracts.

Speeches from invited guests also reflected a commitment to new innovations in the workplace. California Attorney General John Van de Kamp focused on the industrial patterns of work at the New United Motors Manufacturing plant in Fremont, CA, where employee involvement has produced high quality products. Maine Senator George Mitchell spoke about new workplace partnerships and New York Governor Mario Cuomo echoed a similar theme.

Undaunted by such claims, New Direction's leaders attempted to challenge the incumbents through procedural means. But, on the convention's first day, they lost all appeals contesting the outcome of delegate elections. On the second day, they called for constitutional revision of the election process so that all top union officials, including 850 international representatives currently appointed by the incumbent president, would be elected by the rank-and-file. The dissidents argued that direct elections would make leaders more responsive to members' needs, while opponents claimed direct elections would allow interference from outside interests and encourage

expensive election campaigns. A show-of-hands vote overwhelmingly upheld the delegate system. Following that loss, New Directions failed to generate support for a constitutional amendment prohibiting locals from bargaining supplemental concessionary contracts. Instead, the delegates upheld existing constitutional language prohibiting locals from bargaining substandard contracts.

The inability of the dissident faction to accomplish their goals was further reflected in union elections. President Bieber and his so-called "Bieber team" won all national offices in uncontested elections. This included William Casstevens (secretary–treasurer), Stephen Yokich, Odessa Komer, Ernest Lofton, Stan Marshall (vice presidents), and Tony DeJesus (trustee). Don Douglas, New Directions' candidate for director of the Detroit area—region 1–18, lost by a wide margin in his race against the administration-backed Bob Lent. Jerry Tucker lost the directorship of region 5, which includes several Southwestern States, to challenger Roy Wyse. Tucker had ascended to the director position by appealing the results of a 1986 election, and winning a Labor Department-administered election in 1987.

International directions

While the concept of internal democracy dominated the proceedings, it was not the only item on the convention agenda. Global economics, with all the problems for organized labor (for example, substandard wage rates, multinational corporate structures, and antiunion governments), attracted considerable attention as well. Resolutions commending the progress and political victories of the Solidarnosc union in Poland and condemning the brutal repression of students and trade unionists in China passed without dissent. Guest speaker Antonia Hernandez, president of the Mexican American Legal Defense and Education Fund, addressed the issue of Mexican labor migration to the United States and its implications for American trade unions. In a very emotional address and equally moving delegate ovation, Moses Mayekiso, general secretary of the National Union

of Metalworkers of South Africa, thanked the UAW for its efforts leading to his release after 901 days in jail for trade union activities. The UAW and other American unions, he said, showed the apartheid regime in South Africa that there is international solidarity among unions in the free world.

Other speakers also focused on the effects of international trade and the globalization of trade unionism. Msgr. George Higgins, chairman of the UAW Public Review Board, commended the union's struggle for fair treatment of workers in countries which trade with the United States, and urged U.S. officials to act against antiunion repression by developing nations. House Majority Leader Richard Gephardt and New York Governor Mario Cuomo each discussed fair trade and the demands of the new global economy, addressing the issue of labor-management cooperation to meet international challenges.

The convention also promoted the expansion of domestic trade unionism. The delegates gave unanimous approval of resolutions to support the United Mine Workers union in their struggle against Pittston Coal Co. and workers striking against Eastern Air Lines. One resolution, calling for increased organizing activities by the UAW, cited the difficulties facing organizers despite recent successes at Mazda Motors, Diamond–Star (a joint venture of Chrysler and Mitsubishi), and Mack Trucks. Bieber warned the delegates that representation elections may not be successful on the first try, but the union would eventually succeed.

In reference to future organizing, the delegates passed a resolution supporting the union's report, *A Strong Union in a Changing World*, which comments on the changing workplace and UAW's reactions to those phenomena. The report covers a variety of topics such as changes in jobs and workplace design, changing industrial structures, political conditions, the union image, communications, organizing, education, training programs, and union empowerment.

Social justice

The promotion of civil rights and social justice in society has been part of

the UAW convention agenda dating to the administration of Walter Reuther in the 1940's. This convention featured Benjamin Hooks, president of the NAACP, Massachusetts Senator Edward Kennedy, Joseph Lowery of the Southern Christian Leadership Conference, and former Congresswoman Barbara Jordan. Hooks drew analogies to the 1937 Flint sitdown strikers and Rosa Parks sitting down to spark the 1955 Montgomery bus boycott. Kennedy exalted the UAW for its vanguard role in the promotion of health care, civil rights, parental leave, and minimum wage issues. Jordan reminisced about the assistance she received from the union over the years in legislative struggles for civil rights. The delegates unanimously adopted a resolution calling for the elimination of "discrimination, racism, and sexism" in the United States.

Employment security

Employment security has become a crucial negotiating point in auto worker contracts and has spilled over to other industries. The convention delegates paid particular attention to resolutions dealing with plant closings and labor law reform that specifically addressed employment problems. After a demonstration against plant closings by delegates from the UAW's Independents, Parts, and Suppliers division, a resolution was passed which encourages legislative action to protect workers against shutdowns and job losses; the resolution called for a 1-year advance notice before plant shutdowns and public input into shutdown decisions. Guest speaker Tom Donahue, AFL–CIO secretary-treasurer, noted that the UAW need not be reminded of plant relocations and job security. He congratulated the union for its organizing victory at Mack Trucks in South Carolina following the closing of Mack facilities in Pennsylvania and Maryland. Employment security, he added, meant wholesale revision of the National Labor Relations Act. The convention agreed, and passed a resolution calling for legislative enactment of a series of fundamental and procedural changes in labor law. The resolution contains lan-

guage specifically calling for prohibition of both lockouts and the hiring of replacement workers during disputes.

THE 29TH UNITED AUTO WORKERS convention was held June 18–23 in Anaheim, CA. Appropriately, it ended by marking a milestone in the careers of two UAW officials who served as catalysts of confrontation and change. The union honored retiring vice presidents Marc Stepp and Donald Ephlin.

Stepp was a key figure in the implementation of modern operating agreements at Chrysler Corp. which call for many new workplace innovations (for example, team concept, pay for knowledge). Ephlin, head of the union's General Motors Department, avidly supported the promotion of labor-management cooperation and helped create many of the jointly administered programs (for instance, the GM–UAW Paid Educational Leave Program). Ephlin's vice presidency will

be filled by Stephen Yokich, and Stan Marshall will succeed Stepp at Chrysler. Ernest Lofton will replace Yokich at Ford.

And, while preparing for the future, the convention delegates also made sure the past would not be forgotten. Delegates unanimously adopted a resolution authorizing the union to provide $3.4 million to construct the Leonard Woodcock Annex of the Reuther archives housed at Wayne State University. □

Juggling jobs and school

While public and research interest in student work is relatively recent, student work itself is prevalent and has been for at least three decades. Growth in student work appears to have halted in recent years, and percentages of students employed are still below the peaks reached in the late 1970's. The percentages of female students working have risen more rapidly than the percentages of males working. The employment ratio has also risen for black female students. However, we should be concerned that the trend in working among black male high-school students has been declining steadily since 1964 (when information by race/ethnicity was first collected), particularly if this trend reflects a decline in opportunity for those who want part-time work or suggests an increase in alienation from the workplace. While the percent of black and Hispanic students working is low, there is little difference overall in the rate of student work in families with different levels of parent education, which is one measure of socioeconomic level.

—Paul E. Barton
Earning and Learning: The Academic
Achievement of High-School Juniors With Jobs
(Princeton, NJ, Educational Testing Service,
1989), p. 13.

Research summaries
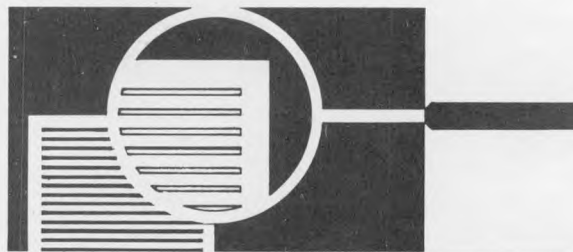
Disabling injuries in longshore operations

Amy Lettman

In colonial times, bells summoned men of varied trades to the hazardous task of manually unloading ships along the shore. Today, cargo handling on the waterfront is quite mechanized, but the risks of disabling injuries are still evident, even for the experienced dockworkers who dominate these jobs. The Bureau of Labor Statistics tracked the incidence of injuries and illnesses among longshore workers as part of its 1987 annual survey; it reported 10 cases in which worktime was lost for every 100 full-time workers in water transportation services, compared with about 4 per 100 in the total private sector. The severity of these disabling longshore cases, moreover, is also evident in the number of workdays lost: an average of 41 days per case, double the national average (18 days).[1]

The frequency and severity of injuries involving longshore operations prompted the Occupational Safety and Health Administration to request a special BLS study.[2] In response, a longshoring study was designed that, unlike the BLS annual survey, focused on the characteristics of workers and their injuries as well as the factors surrounding the incident, such as worksite conditions at the time of the accident and use of personal protective equipment. In addition to loading and unloading ships, this study included cases at shoreside operations of marine terminals and related areas where cargo is

handled and stored and where cargo handling and other equipment is maintained.

Four-fifths of the 582 cases included in this study were placed in seven distinct job categories. (See table 1.) The "holdman," who commonly works below the deck of a vessel where the cargo is stowed, was numerically the most important job title, accounting for three-tenths of the total cases. "Driver" (forklifts, tractors, and so forth) accounted for one-sixth, and "dockman"—who assists equipment operators to hook on cargo, for example—made up one-eighth of the injured. Other injured workers were either classified as checker, deckman, maintenance mechanic, or warehouse worker, or

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Table 1. **Injuries involving longshore operations, selected characteristics, 1985–86**

Characteristic	Percent of total cases	Characteristic	Percent of total cases
Job category at time of accident:		**Activity at time of accident—Continued**	
Clerk, checker	7	Climbing or coming down ladder, gangway, vehicle, and so forth	9
Deckman	5	Checking cargo	6
Dockman	12	Fixing or repairing gear, equipment, or container	6
Driver; forklift, tractor, and so forth	15	Other	15
Holdman	29		
Maintenance, mechanic, gearman	7	**Personal protective equipment worn:**[1]	
Warehouse or shedworker	6	Dust mask	3
Other	19	Gloves	59
		Hardhat	77
Nature of injury:[1]		Reflective vest or jacket	3
Cut, laceration, puncture	19	Safety goggles	5
Bruise or contusion	28	Steel-toed safety boots or shoes	61
Muscle sprain or strain, torn ligament	48	Other	4
Hernia	1	Not wearing any safety gear	9
Fracture	18		
Object in eye(s)	4	**Worksite conditions contributing to the accident:**[1]	
Other	9	Too noisy	2
		Poor weather conditions	6
Part of body affected:		Cluttered work area	8
Head, including neck	9	Slippery work surface	17
Upper extremities	19	Uneven work surface	19
Trunk	28	Equipment broke or did not work properly	16
Lower extremities	28	Working in too small or tight an area	13
Multiple parts[2]	14	Hard to see or bad lighting	9
		Work area not properly safeguarded	5
Activity at time of accident:		Other worksite condition	8
Handling cargo/equipment by hand	31	None	29
Helping crane or winch operator to load or unload cargo	19		
Driving yard tractor, lift truck, or other mobile equipment	10		
Using hand tools	3		

[1] Because more than one response is possible, the sum of the percentages exceeds 100.

[2] Applies when more than one major body part has been affected, such as an arm and a leg.

NOTE: Percentages are based on the total number of persons who answered the question.

were placed in the "other" category—a diverse group ranging from first-line supervisor to general laborer.

Youth and inexperience were not contributing factors to longshoring injuries: Three-fourths of those injured were 35 years or older, and four-fifths had been in their job category for at least 5 years. There were indications that the age-experience profile for injured workers mirrored that for all longshoring workers. Automation and foreign competition, for instance, have greatly reduced the amount of labor needed to handle cargo, thus limiting the entry of new workers into the industry.

The study reported on how longshore injuries occurred (accident type and source of injury) and described the injury (nature and part of body affected).[3] Most commonly, injuries were the result of being struck by or striking against crates, containers, and other cargo, or similar contact with cargo-handling equipment. Falls and overexertion (from lifting heavy objects) were also characteristics of longshoring accidents. Resulting injuries usually were muscle sprains and strains (especially to the back and lower extremities), serious cuts and bruises, and fractures.

About four-fifths of these longshoring cases resulted in lost worktime; not surprisingly, the most serious injuries, such as fractures and back sprains, usually required several weeks away from the physically demanding work of the docks. One-eighth of all cases resulted in hospitalization overnight; for these cases, hospital stays averaged 6 nights.

Besides recounting the characteristics of their cases, injured workers indicated that they were, with few exceptions, wearing personal protective equipment at the time of their accident. Not surprisingly, though, hardhats, gloves, and safety footwear often did not prevent the types of impact injuries associated with longshoring operations. Instead, workers felt that certain worksite conditions or factors, rather than inadequate safety gear, contributed to their accidents. Most often, they cited slippery or uneven work surfaces, faulty equipment, and confined space as problem conditions, and hurrying or

being rushed and being unaware of danger as accident-related factors.

Most injured workers lacked recent safety training in longshore operations, but few cited this omission as a contributing factor to their accident. Of those who had received training during the 3 years preceding their accident, the training commonly covered the operation of mobile equipment and handling cargo. Training aside, a clear majority of the injured workers believed that safety rules were usually enforced.

Almost four-fifths of the workers felt that their accident could have been avoided, citing a wide variety of preventive actions, methods, and procedures. These measures included having more people, more time, and better equipment to perform the task.

A COMPREHENSIVE REPORT, *Injuries Involving Longshore Operations*, Bulletin 2326, may be purchased ($1.50) from the Superintendent of Documents, Government Printing Office, Washington, DC 20402, or from the Bureau of Labor Statistics, Publication Sales Center, P.O. Box 2145, Chicago, IL 60690. The bulletin provides additional information on the characteristics associated with longshoring accidents. □

Footnotes

[1] Marine cargo handling accounts for a clear majority of the workers in water transportation services. The latter group includes substantial numbers of workers doing miscellaneous services incidental to water transportation, such as chartering commercial boats. See *Occupational Injuries and Illnesses in the United States by Industry, 1987*, Bulletin 2328 (Bureau of Labor Statistics, 1989).

[2] The study covers cases processed under the Federal Longshoremen's and Harbor Workers' Compensation Act during October 1985 in the New York Office of Workers' Compensation Programs and during April 1986 for the following other offices: Baltimore, Boston, Houston, Jacksonville, Long Beach, New Orleans, Norfolk, Philadelphia, San Francisco, and Seattle. Excluded were cases in which the employer was engaged in drydock and ship repair activities, cases that were 120 days old or more, and those that involved assaults or resulted in fatalities.

[3] The injury characteristics used in this study—type of accident, source of injury, nature of injury, and part of the body affected—were classified using the American National Standards

Institute Z16.2 (1962) *Method of Recording Basic Facts Relating to the Nature and Occurrence of Work Injuries*, as modified by BLS.

Federal agencies seek improvement in quality in establishment surveys

Quality in Establishment Surveys is a Federal report that examines the potential sources of error in Government surveys of business establishments. Not intended as either a springboard for defining standards or a means of evaluating current practices, the interagency report aims to provide survey practitioners with useful reference and guidance in designing and refining establishment surveys. Information for the report was garnered from a questionnaire concerning the survey design practices for 55 Federal establishment surveys from nine agencies.

Errors occur in surveys at two possible points: in the sample design and estimation (sampling error) and in the survey methods and operations (nonsampling error). Errors of either variety can be *variable*, that is, randomly introduced and distributed, or instances of *bias*, that is, nonrandom, systematic error. Control of both of these is important to establishing the quality of the survey.

Sampling error results from (1) the sample design itself and (2) the method of estimating the probability of occurrence in the entire population of a feature characterizing the sample population. The sample design may contribute to errors in a number of different ways. First, because establishment surveys are usually dominated by a select few units, differential sampling by establishment size is performed, often involving certainty selection for the larger units. In some cases, very small units may be given zero probability of selection and may thereby be altogether excluded from the target population. Second, conflicting design objectives may result in tradeoffs having to be made wherein reliability may be compromised, or at least not improved. For example, when detailed publication cells are required, the size of the sam-

ple must be increased, often without a concomitant increase in reliability in the aggregate cells. Finally, the requirement for revision and updating of the survey design may result in several kinds of error. Issues that must be faced during survey redesign involve the continuity, availability, and current analyzability of the data. In respect of the first of these, very often the usefulness of the data depends on longitudinal features as much as on current measurement.

Errors resulting from sampling estimation have two sources: the actual estimator used and the approach to the estimation of variance used. As regards the former, there are four commonly used estimators, each with its own peculiar advantages and disadvantages. The *direct expansion estimator*, given by

$$\hat{Y} = \sum_{i=1}^{n} W_i Y_i \ ,$$

where $\hat{Y}$ is the estimated total, W_i is the weight applied to sample unit i, and Y_i is the reported value of sample unit i, has the advantage of being operationally simple, unbiased, and linear in its variance estimator. Its chief disadvantage is that is it not very efficient. The *ratio estimator*,

$$\hat{Y}_R = \frac{\hat{Y}}{\hat{X}} X = \frac{\displaystyle\sum_{i=1}^{n} W_i Y_i}{\displaystyle\sum_{i=1}^{n} W_i X_i} X \ ,$$

where X and Y are at least moderately positively correlated features of the population of interest and X is the complete enumeration total of the X_i, is an improvement over the direct expansion estimator because of the existing correlation, but is biased due to its nonlinear form and confronts the researcher with the problem of deciding whether to use ratio estimates formed separately for each sampling stratum and then summed across all strata or formed for all the strata combined. The *link-relative estimator*, which is similar to the ratio estimator except that only reported values of X_i and Y_i are used and weights

may not be included, is considerably biased in practice because the units reporting are rarely representative of the universe in question. The *unweighted estimator* is severely biased, even as regards trends, but is sometimes employed because it is simple and inexpensive to use.

Estimating variance usually results in the computation of the mean squared error of an estimator. The mean squared error in turn is composed of two parts: the sampling variance and (the square of) a bias component. Although the latter may be the dominant part of the total mean squared error, it is very difficult and expensive to measure, so that in practice it is rarely reported on in establishment surveys. By contrast, sampling variance is often readily estimable from the data, although for one reason or another, by the time they go to print, only one-half of Federal establishment surveys actually include this statistic. The simplest approach to the calculation of sampling variance is to base the variance on the sampling design. When the design is linear, no problems ensue and the calculation is straightforward. However, more often than not, the estimator used is nonlinear, and then it is impossible to use a design-based variance. More complex calculations of variance bring higher level difficulties with them, and in the end it may be that the variance is not computed at all because of the cost of the computer time involved, or, if it is computed, it may not be published, again because of cost considerations. Finally, aside from monetary cost, the considerable delay needed to compute variances may be seen as too great a price to pay in time.

The second major category of establishment survey errors is the nonsampling errors that occur in the survey methods and operations. Generally speaking, there are five kinds of nonsampling error: specification error, coverage error, response error, nonresponse error, and processing error. *Specification error* is the error that arises during the planning stage of a survey because data specification is either inadequate or inconsistent. It can result from poorly worded questionnaires or instructions, or it may be a reflection of the difficulty of measur-

ing abstract concepts. Specification error is measured by performing record checks, cognitive or validation studies, pretests of questionnaires, and comparisons with independent estimates. It is controlled by requirement reviews, industry consultations, expert reviews, and, again, cognitive studies and questionnaire pretests.

Coverage error is the error that results from either (1) failure to include in the survey all of the units belonging to the defined population (undercoverage) or (2) failure to exclude from the survey some units that do not really belong in it (overcoverage). Coverage error may occur either because of defective sampling frames, that is, frames that are definitionally or intrinsically deficient in meeting the requirements of producing a representative, unbiased sample, or because of defective processes associated with an otherwise adequate sampling frame, for example, selecting samples that do not correctly represent the frame. Coverage error is measured by comparing current survey data with the results of earlier surveys or with data from external sources. Often such measures as the rate of unclassified units, rate of misclassified units, and rate of duplication are used. Control is achieved by identifying the areas where coverage error is most serious and assigning resources to reduce the error there. Among the techniques used are those which reduce miscoding, duplication, and omission of data, and those which get at the root of lack of timeliness and rectify it.

Response error may be thought of as the differences between the data values actually collected in the survey and the correct values. Response errors result from the failure of (1) the respondent to report the correct value, (2) the interviewer to record the value correctly, or (3) the survey instrument to measure the value correctly. Sometimes response error occurs because of subtle factors connected with the peculiarities of the situation, as, for example, when the interviewer inadvertently cues the respondent to a given answer. Measurement of response error requires a (usually complicated) mathematical model and is aimed at (1) estimating the precision of survey results, (2) identify-

ing specific survey problems, (3) identifying improvements to the survey methodology, or (4) monitoring the effects of changes in the survey methodology. Response error is controlled most commonly by identifying those areas and classes of respondents of a survey which are more susceptible to unreliability in reporting than others and then changing the survey methodology to deal with them.

Nonresponse error is the result of a failure to collect complete information on all units in the selected sample. Nonresponse produces error in two ways: (1) The decrease in sample size or amount of information collected produces larger standard errors, and (2) to the extent that nonrespondents differ from respondents in a selected sample, bias is introduced into the survey. Nonresponse error is measured either directly, through collecting data from nonrespondents by means of a followup survey or from a source external to the survey, or indirectly, by calculating unit response rates (weighted or unweighted), item response rates, and rates of refusal. Only the direct measures give accurate estimates of bias, although the indirect measures give an indication of how serious the bias may be. Nonresponse error is controlled by making a strong effort to produce successful first contacts and by initiating vigorous followup efforts in the event of initial failure. Periodic benchmark surveys and quality control procedures also aid in controlling nonresponse error.

Processing error is the error in the survey results that arises from faulty implementation of otherwise correct survey methods. Categorized generally, such tasks as preparation of the questionnaire, data collection, clerical handling of the forms, and processing of the data by clerks, analysts, or computers all may result in processing errors. Processing error is measured mostly indirectly, through the keeping of performance statistics; only rarely does the opportunity for direct measurement of processing error arise, usually because processing error is inseparably mixed in with response, nonresponse, and coverage errors. Processing error is controlled most commonly by instituting standard quality control procedures like acceptance sampling and process-control techniques. Concomitantly, many surveys are designed to allow later processing stages to correct errors made in earlier stages.

Quality in Establishment Surveys is prepared by the Subcommittee on Measurement of Quality in Establishment Surveys of the Federal Committee on Statistical Methodology, under the joint sponsorship of the Statistical Policy Office, Office of Information and Regulatory Affairs, and Office of Management and Budget. Thomas J. Plewes, Associate Commissioner, BLS Office of Employment and Unemployment Statistics, chaired the subcommittee. The report, priced at $21.95, is available from NTIS Document Sales, 5285 Port Royal Road, Springfield, VA 22161. □

Shiskin prize awarded to Frank de Leeuw

Frank de Leeuw, an economist with the Bureau of Economic Analysis, received the 10th annual Julius Shiskin Award for Economic Statistics. de Leeuw was honored for "his wide range of contributions to economic statistics that were characterized by the efficient use of statistical techniques and a practical analytical focus." The award was presented at the Washington Statistical Society's annual dinner in June, along with an honorarium of $500. The prize is named in honor of the ninth U.S. Commissioner of Labor Statistics.

The Shiskin award program is designed to honor unusually original and important contributions in the development of economic statistics or in interpreting the economy. Participating organizations in the program are the Bureau of Labor Statistics, Bureau of the Census, Bureau of Economic Analysis, Office of Management and Budget, National Bureau of Economic Research, National Association of Business Economists, and the Washington Statistical Society. The late Commissioner Shiskin was associated with all of these organizations during his long career.

Major agreements expiring next month
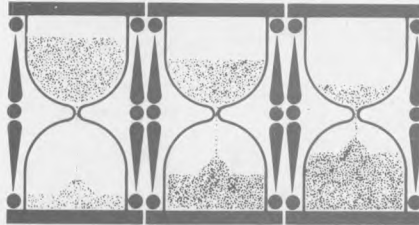
This list of selected collective bargaining agreements expiring in November is based on information collected by the Bureau's Office of Compensation and Working Conditions. The list includes agreements covering 1,000 workers or more. Private industry is arranged in order of Standard Industrial Classification. Labor organizations listed are affiliated with the AFL–CIO, except where noted as independent (Ind.).

Private industry

Construction
Construction Industry Council of Westchester and Hudson Valleys, New York; Laborers, 1,250 workers

Food products
Hershey Foods, Inc., Hershey, PA; Bakery, Confectionery and Tobacco Workers, 2,800 workers

Tropicana Products Inc., Bradenton, FL; Teamsters, 1,400 workers

Chemicals and allied products
Colgate–Palmolive Co., Interstate; Various unions, 2,000 workers

Fabricated metal products
Olin Corp., East Alton, IL; Machinists, 2,800 workers

Utilities
General Telephone Co. of Pennsylvania, Pennsylvania; Electrical Workers (IBEW), 1,700 workers

Louisville Gas and Electric Co., Louisville, KY; Electrical Workers (IBEW), 2,600 workers

Retail trade
Century Food Stores, Milwaukee, WI; Food and Commercial Workers, 1,000 workers

Services
Garage and parking lot agreement, San Francisco, CA; Teamsters, 1,000 workers

Textile Maintenance Institute of Chicagoland (laundry and dry cleaning), Chicago, IL; Textile Processors (Local 46 of the Teamsters), 3,900 workers

RCA Service Co., Interstate; Electrical Workers (IBEW), 21,000 workers

Health Services
Honolulu hospitals, Hawaii; Hawaii Nurses Association (Ind.), 1,800 workers

Kaiser Permanente, Northern California; Service Employees, 9,000 workers

League of Voluntary Hospitals, New York, NY; Service Employees, 4,500 workers

Public activity

Transportation
Chicago Transit Authority, Chicago, IL; Amalgamated Transit Union, 12,000 workers

Safety
Cook County corrections officers, Cook County, IL; Teamsters, 1,700 workers □

Developments in industrial relations
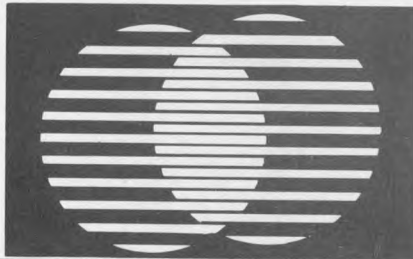
Magma, Asarco copper contracts

In the copper industry, new agreements between Magma Copper and Asarco, Inc. and Steelworkers and other unions provided for guaranteed compensation gains for employees. In contrast, the 1986 accords among the parties called for compensation cuts forced by worldwide depression in the industry. Since then, the industry has rebounded and employees at Magma have received quarterly payments under a formula in the 1986 contract linked to the price of copper. The distributions were calculated at 60 cents for each hour worked in the third quarter of 1987, and at $5.50 (the maximum under the formula), $5.25, and $5 in the following quarters. A possible payment for the fourth quarter of 1988 is in dispute.

Under the 1989 contract at Magma, each 5-cent-a-pound rise in the price of copper (up to $1.70) results in wage increases ranging from 3 or 4 cents an hour for lower rated employees to 9 or 10 cents for top-rated employees. Under the 1986 contract, each 1-cent rise in the price of copper from 71–90 cents resulted in a 10-cent pay increase, and each 1-cent rise from 91 cents to $1 resulted in a 25-cent pay increase.

The 3-year Magma contract, covering 3,100 employees in Arizona, also provides for average hourly wage increases of $1 immediately and 25 cents in the second and third years and increases in pensions.

At Asarco, Inc., the 1,600 workers

will receive wage increases totaling $1.85 an hour, improvements in health insurance totaling $1.85 an hour, and improved health insurance and safety provisions. The 1986 contract provided for an initial wage cut averaging about $3.50 an hour, of which $1.75 was later restored. At Magma, the 1986 cut was about $2.82, with no provision for restoration.

The 1986 contract at Kennecott Copper Co., the largest domestic copper producer, expires on June 30, 1990. It cut wages by about $3.22 an hour and benefits by about $2.18, with no provision for restoration.

Transit accords

In Minneapolis–St. Paul, MN, 2,000 employees accepted a 3-year contract proposal, averting a scheduled work stoppage that would have affected 250,000 commuters. The contract between the Metropolitan Transit Commission and the Amalgamated Transit Union provides for wage increases of 3.25 percent retroactive to May 1, 3.5 percent in May 1990, and 3.75 percent in May 1991. After the final increase, top-scale drivers' earnings will be $32,573 a year.

In a change in the pay progression schedule, new employees will be paid at 55 percent of the top rate during their first 12 months on the job, 60 percent during the next 12 months, and will move to the top rate after a total of 36 months. Previously, new workers were paid at 60 percent during the first 6 months, 70 percent for the next 12 months, and the top rate after 42 months.

Other terms included establishment of 5 minutes of paid time for drivers to prepare to take over bus routes on the street, and 6 weeks of paid vacation after 29 years of service (previously, 30 years).

In Boston, MA, 4,400 transit workers represented by Local 589 of the Amalgamated Transit Union were covered by a 3-year arbitration award. The award resulted from a provision of the Massachusetts Bay Transportation Authority's controlling statute calling for arbitration to end bargaining impasses. The award provides for wage increases of 6.6 percent retroactive to April 1, 1988, 6.3 percent retroactive to April 1, 1989, and 6 percent on April 1, 1990. Drivers at the top rate, who had been paid $14.63 an hour, will receive $17.57 after the 1990 wage increase.

Benefit changes include a 1-day cut in the 2-day waiting period for sick leave, 1 day of paid personal leave each year for employees using less than half their sick leave, a $240 annual payment to employees who choose to be covered by their spouses health insurance, and rewards to employees equal to 25 percent of savings resulting from their reporting of health care billing errors.

There also was a revamping of benefits for the 1,100 part-time workers covered by the award. Part-timers working at least 24 hours a week now receive 12 annual paid holidays (previously 6), sick leave and personal leave, $6,000 life insurance, and individual health insurance fully paid by the authority, which will pay a proportionate amount for employees working fewer than 24 hours a week.

Similar provisions were negotiated by 14 other unions in contracts for 2,800 employees.

AFSCME–Harvard University

After winning a May 1988 representation election in an organizing drive that traces back to 1972, the State, County and Municipal Employees in June 1989 negotiated an initial contract for

3,500 office, laboratory, and library employees of Harvard University.

According to the union, wages will increase an average of 32 percent over the 3-year term, a result of general increases, merit increases, and length-of-service increases.

Other provisions include:

- Improved family care benefits, such as a $40,000 a year scholarship fund, a new child care center, 8 weeks time off at 70 percent of salary for mothers after giving birth and 1 week at full salary for fathers and adoptive parents. (Eighty percent of the employees in the unit are women.)
- Union-management problem-solving and health and safety committees in each area of the university.
- Stronger affirmative action requirements.
- A joint committee to consider long-term needs.
- Improvements in pensions, including uncoupling the formula from Social Security benefits and providing cost-of-living adjustments for retirees.
- An increase in the university's financing of health insurance, to an average of about 85 percent of premium costs.

Representing the university in the talks was former Secretary of Labor and Harvard professor emeritus John T. Dunlop, who fostered a joint committee to determine the items to be covered by the agreement.

On the union side, AFL–CIO president Lane Kirkland and other federation officials joined with State, County and Municipal Employees in the organizing campaign leading to the representation election.

Public sector agreements

More than 25,000 employees of various agencies in the State of Oregon were covered by new contracts that incorporated the results of a 1987 legislated mandate to eliminate inequities in the pay classification system. Of the 17,000 workers in the largest bargaining unit, 85 percent will receive pay increases on April 1, 1990, a result of the reclassification study. Most of the

employees will receive at least a 5-percent increase, and they also will benefit from moving into pay grades with higher maximum levels. Pay rates for 7 percent of the employees will be reduced on the same date, but instead of receiving an actual cut in pay, these employees will be limited to cost-of-living lump-sum payments in each of the four succeeding years. Also, for a 3-year period, they will be given preferential promotion rights.

The 2-year accord, negotiated by the Oregon Public Employees Union (Local 503 of the Service Employees) also provides for a 3-percent pay raise effective immediately and a 4.5-percent increase effective January 1, 1991.

A major issue in the talks was the rising cost of health insurance. The final terms call for the State to increase its financing of benefits for full-time employees by 17 percent on November 1, 1989, to an average of $238 a month per worker and to an average of $261 a month a year later. Employees will now have the option to shift into insurance plans having premium costs fully met by the State obligation. Other changes include a cut in health benefits for part-time employees and termination of dental benefits.

Also in Oregon, the State, County and Municipal Employees broke with a tradition of 2-year agreements by agreeing to a 3-year contract for 5,700 employees involved in penal and medical activities. Union officials said the longer contract time will enable them to focus more attention on specific matters, such as job safety and work scheduling.

In another deviation from past practice, the contract calls for a July 1, 1991, wage increase equal to the average of increases for workers in 20 local government units in Oregon and Washington and State workers in Washington, California, Nevada, and Montana. The increase is subject to approval by the State legislature.

Set wage increases are 3 percent effective immediately and 4.5 percent effective January 1, 1991. Under the legislated pay appraisal, 80 percent of the employees will also receive average increases of about 4.75 percent in July 1990.

According to the union, the State agreed to increase its financing of health insurance by 16 percent in the first year, to an average of $234 per worker per month, and to $225 in the second year. In the final year, the State will finance whatever amount is necessary to maintain existing benefits.

Health care cost containment was a major issue in negotiations between the State of New Hampshire and the State Employees Association for 9,000 workers. An independent factfinder had earlier recommended that any possible rise in the State's financing of health insurance in excess of 20 percent during the second contract year be assumed by employees. Instead, the 2-year contract calls for reopening bargaining on the issue if a rise exceeds 20 percent.

The contract, succeeding one that expired on June 30, did not provide for an immediate pay increase. Instead, employees will receive 5-percent increases on December 28, 1989, and October 5, 1990.

The State of New Jersey settled with two unions for 19,000 employees; the Communications Workers refused to accept similar terms for its 40,000 workers, arguing that the wage increases were inadequate. The union also contended that the State had, in recent years, followed a strategy of first settling with the smaller unions to set a pattern of less costly settlements with all of the unions. Under State law, the bargaining stalemate was moved into a factfinding stage.

The two unions that settled were the State, County and Municipal Employees, representing 10,000 employees at 18 hospitals and rehabilitation centers, and the International Federation of Professional and Technical Engineers, representing 9,000 mechanics, maintenance and security personnel, and inspectors.

The 3-year agreements were effective July 1, 1989. They provided for similar terms, including a 4-percent wage increase on January 13, 1990, a 4.5-percent increase in October 1990, and a 5.5-percent increase in July 1991. These increases are in addition to existing contract provisions calling for annual increases of 3.6 percent to 5 percent (varying by performance) until

employees attain 10 years of service. Prior to the settlements, reported average annual pay was $15,000 for employees represented by the State, County and Municipal Employees, $21,000 for those represented by the Professional and Technical Engineers, and $25,000 for those represented by the Communications Workers.

The two settlements raised the $460 annual clothing allowance to $480 in July 1990 and to $500 in July 1991, and provided for a $200 payment in December 1991 to employees who worked the second and third shifts during the preceding 12 months.

In Pennsylvania, an arbitration panel awarded 3,600 State corrections officers and 400 psychiatric security aides six wage increases totaling about 16 percent over the 3-year contract period. According to a State government official, the increases, combined with annual length-of-service increases, will bring average annual pay to $28,911, from $22,672. The accord also eliminated the lower pay rate range that applied to the security aides. In the final contract year, the range will be $19,299 to $36,888 for all employees.

The parties adopted a "combined" leave plan, giving employees a set number of days—varying by seniority—each year, to be used for vacations, personal days off, or illness up to 5 days' duration. Up to 45 days of the leave can be carried over from year to year. Previously, the three types of time off accrued separately, and personal days could not be carried over. Illnesses lasting longer than 5 days will be covered by separate long-term leave, and employees with at least 20 years of service will be partly compensated at retirement for unused "combined" and long-term leave.

In New Jersey, the Turnpike Authority proposed that new employees begin paying part of health insurance premium costs. The final settlement

with the Federation of Professional and Technical Engineers did not include the two-tier approach, but the parties did agree to reopen negotiations after January 1991 if the authority's health insurance costs exceed $9.5 million during the preceding 18 months.

The 3-year accord calls for wage increases of 6 percent effective immediately and 5 percent in July of 1990 and 1991. After the final increase, hourly wage ranges will include $9.91–$16.75 for toll collectors and $10.67–$18.53 for maintenance workers. Annual salaries will range from $17,473–$32,208 for office and clerical employees and from $20,739–$44,935 for technical employees.

The State of Rhode Island and 26 locals of the State, County and Municipal Employees negotiated a 3-year contract calling for an immediate 4.4-percent wage increase, a 4.4-percent increase on July 1, 1990, and a 1-percent increase on January 1, 1991. Other terms include 5-cent-an-hour increases in night shift differentials in the second and third years and a requirement that employees receive second opinions prior to 15 categories of surgery.

The accord covers 7,700 workers in numerous occupations in a number of State agencies.

Onsite day care initiated in Texas

State-owned buildings in Texas will be housing day care facilities for the children of State employees as part of a bill signed by Governor Bill Clements. The bill mandates the building of onsite or nearby day care facilities at all State buildings. In addition, designers of new State buildings must consider inclusion of a day care facility.

The program will be financed by the Texas Capital Trust Fund, which collects money for capital improvements from the sale of State-owned land and

property. The law allocates up to $400,000 from the fund beginning with the 1990 fiscal year to provide renovations of State buildings for day care centers for the next two fiscal years. The money will first be used to start a pilot program for workers at agencies in Austin, the State's capital. The program is expected to be operating smoothly within a year, leading to adoption of programs in other cities with large numbers of State workers.

A child care development board, consisting of representatives from the offices of State administrators, will manage the program. The board will set the standards for child care services and select a licensed child care provider who will be responsible for all aspects of operating the facility.

Bereavement leave extended

Bereavement privileges for New York City municipal employees were extended to cover the death of a domestic partner regardless of marital status or sexual preference, under executive order of Mayor Edward Koch. The order applies to heterosexual, homosexual, and disabled couples 18 years and older. The new policy does not change the 4 days of bereavement leave to which most city employees are entitled following the death of a spouse, parent, sibling, child, or any relative living in the same household.

To be granted leave, the domestic partners have to be registered as such with the city's personnel department in accordance with established procedures, which will also include guidelines for terminating the partnership. The partners are required to have lived together for at least 1 year at the time of registration. They will be barred from registering if either member currently belongs to another domestic partnership or to one that was formally ended less than 1 year before the new registration. □

Book reviews
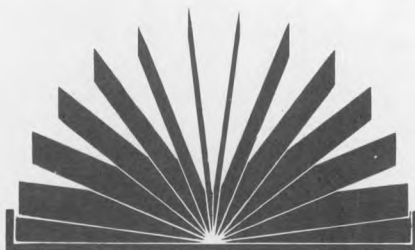
Duality of modern demography

Population in an Interacting World. Edited by William Alonso. Cambridge, MA, Harvard University Press, 1987. 260 pp., bibliography.

The emergence of two sharply contrasting, demographic "worlds" clearly ranks among the most far-reaching events of our times. In the industrialized world, births exceed deaths by a declining, and soon-to-vanish, margin. In the less-developed world, the population "explosion" is still only incompletely controlled, and the immense demographic momentum generated by a youthful age structure virtually guarantees that large increases in population size will persist far into the next century. This timely collection of essays examines the tensions created by these divergent paths. Reflecting current issues of public policy, the focus is on migration from the Third World to the industrialized market economies.

The first four essays supply historical and philosophical background. William McNeil contributes a highly compressed, but clear and consistently interesting, account of population movements in the premodern era. The ethnically homogeneous nation, he reminds us, is a relatively modern phenomenon.

Aristide Zolberg summarizes the little-known story of the inflows—both voluntary and enforced—of foreign labor into the Western nations, from the inception of plantation slavery to the present century. A portion of his title, "Wanted But Not Welcome . . . ," epitomizes his view of that process.

Hedley Bull's essay examines the divergent perspectives on population policy that often divide the Third World from the West, for example, the long-debated question of whether sus-

tained economic development must precede successful control of fertility.

The editor's own contribution explores the troublesome concept of national identity. In his view, citizenship—a *de jure* concept—is replacing identity based on race, language, and religion.

The second section of the book is focused on the causes and consequences of international migration. Juergen Donges' closely reasoned essay examines the cross-national movements of labor from the perspective of neoclassical economic theory. His conclusion: increased migration to the industrialized countries is no panacea for Third World problems; conversely, halting such immigration cannot cure chronic unemployment in developed countries. What is needed, he argues, is the liberalization of trade and investment policies, which will expand employment in developing countries by opening up markets for their exports and supplying capital for their industries. It is hard to argue with his prescription, other than to note that progress in this direction has been slow and uncertain.

Hans-Joachim Hoffman-Nowotny addresses the complex problem of cultural and political friction between Third World immigrants and their central and northern European hosts. The refugee problem—a continuing tragedy on the international scene—is the subject of Francis Sutton's essay. Unfortunately, his careful analysis yields little hope that the humane policies that he advocates will be implemented.

In a particularly informative essay, Myron Weiner assesses the economic benefits to the Third World from exporting labor to the industrialized nations. Surveying a wide range of empirical studies, he finds substantial benefits to the sending countries, and

firm grounds for rejecting the contrary view. In this reviewer's opinion, the collection suffers from the absence of an equally informed assessment of the economic effects of labor migration on the receiving countries of the West.

Another disappointment, to this reviewer, is Orlando Patterson's treatment of migration into the United States from Central America and the Caribbean. Patterson's approach is derived from the Neo-Marxist paradigm of an exploiting, capitalist "center" and an exploited, underdeveloped "periphery." He draws on a narrow range of sources to support his view that migration to the United States benefits only this country, while harming the sending countries. His essay is marred, moreover, by a strong anti-American tone.

These criticisms aside, the book is well-written, among its other virtues. Most notably, it utilizes the perspectives of several disciplines to make a wide range of specialized literature readily accessible to the general reader.

—C. R. Winegarden
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University of Toledo

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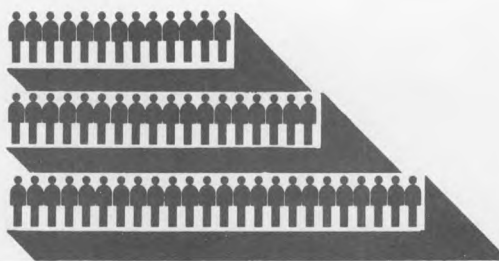
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Current labor statistics

Notes on Current Labor Statistics

This section of the *Review* presents the principal statistical series collected and calculated by the Bureau of Labor Statistics: 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, 13–15, 17–18, 44, and 48.) Seasonally adjusted labor force data in tables 12 and 4–10 were revised in the February 1989 issue of the *Review* and reflect the experience through 1988. Seasonally adjusted establishment survey data shown in tables 13–15 and 17–18 were revised in the July 1989 *Review* and reflect the experience through March 1989. A brief explanation of the seasonal adjustment methodology appears in "Notes on the data."

Revisions in the productivity data in table 44 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month-to-month and 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 "real" earnings shown in table 15—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 × 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

n.e.c. = not elsewhere classified.

n.e.s. = not elsewhere specified.

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.

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 unemployment 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 intercensal 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*.

Labor force data in tables 1 and 4–10 are seasonally adjusted based on the experience through December 1988. Since January 1980, national labor force data have been 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).

At the end of each calendar year, seasonally adjusted data for the previous 5 years are revised, and projected seasonal adjustment factors are calculated for use during the January–June period. In July, new seasonal adjustment factors, which incorporate the experience through June, are produced for the July–December period but no revisons are made in the historical data.

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 Databook,* 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).

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 represents the percent of industries in which employment was rising over the indicated period, plus one-half of the industries with unchanged employment; 50 percent indicates an equal balance between industries with increasing and decreasing employment. 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. Data are centered within the span. The March 1989 *Review* introduced an expanded index on private nonagricultural employment based on 349 industries, and a new manufacturing index based on 141 industries. These indexes are useful for measuring the dispersion of economic gains or losses and are also economic indicators.

Notes on the data

Establishment survey data are annually adjusted to comprehensive counts of employ-

ment (called "benchmarks"). The latest adjustment, which incorporated March 1988 benchmarks, was made with the release of May 1989 data, published in the July 1989 issue of the *Review*. Coincident with the benchmark adjustments, seasonally adjusted data were revised to reflect the experience through March 1989. Unadjusted data have been revised back to April 1987; seasonally adjusted data back to January 1984. These revisions were published in the *Supplement to Employment and Earnings* (Bureau of Labor Statistics, 1989). Unadjusted data from April 1988 forward and seasonally adjusted data from January 1985 forward are subject to revision in future benchmarks.

The BLS also uses the X–11 ARIMA methodology to seasonally adjust establishment survey data. Beginning in June 1989, projected seasonal adjustment factors are calculated only for the first 6 months after benchmarking, rather than for 12 months (April–March) as was previously done. A second set of projected factors, which incorporate the experience though October, will be produced for the subsequent period and introduced with the publication of data for October. The change makes the procedure used for the establishment survey data more parallel to that used in adjusting the household survey data. Revisions of historical data will continue to be made once a year coincident with the benchmark revisions.

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" (prior to any benchmark revisions) in the third month of their appearance. Thus, December data are published as preliminary in January and February and as final in March. For the same reasons, quarterly establishment data (table 1) are preliminary for the first 2 months of publication and final in the third month. Thus, fourth-quarter data are published as preliminary in January and February and final in March.

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 *Hand-*

book 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; 22–30)

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 4,200 private non-farm establishments providing about 22,000 occupational observations and 800 State and local government establishments providing 4,200 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 civilian and private indexes and the index for 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 bargain-

ing 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 of 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), *Employment Cost Indexes and Levels, 1975-88,* Bulletin 2319 (Bureau of Labor Statistics, 1988), and the following *Monthly Labor Review* articles: "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 adjustments (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, profes-

sional, 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; 31–43)

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 homeownership 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. The industry and product structure of PPI organizes data in accordance with the Standard Industrial Classification (SIC) and the product code extension of the SIC developed by the U.S. Bureau of the Census.

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 or special composite groups. 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; 44–47)

Business sector and major sectors

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 input 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 labor and capital inputs combined). 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 the ratio of output per unit of labor and capital inputs combined. 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 change in 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 at work 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

Output measures 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 estimates 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 44–47 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, cap-

ital, 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), chapter 11. Historical data are provided in *Handbook of Labor Statistics,* Bulletin 2217 (Bureau of Labor Statistics, 1985).

Industry productivity measures

Description of the series

The BLS industry productivity data supplement the measures for the business economy and major sectors with annual measures of labor productivity for selected industries at the 3- and 4-digit levels of the Standard Industrial Classification system. The industry measures differ in methodology and data sources from the productivity measures for the major sectors because the industry measures are developed independently of the National Income and Product Accounts framework used for the major sector measures.

Definitions

Output per employee hour is derived by dividing an index of industry output by an index of aggregate hours of all employees. Output indexes are based on quantifiable units of products or services, or both, combined with fixed-period weights. Whenever possible, physical quantities are used as the unit of measurement for output. If quantity data are not available for a given industry, data on the constant-dollar value of production are used.

The **labor input series** consist of the hours of all employees (production and nonproduction workers), the hours of all persons (paid employees, partners, proprietors, and unpaid family workers), or the number of employees, depending upon the industry.

Notes on the data

The industry measures are compiled from data produced by the Bureau of Labor Statistics, the Departments of Commerce, Interior, and Agriculture, the Federal Re-

serve Board, regulatory agencies, trade associations, and other sources.

For most industries, the productivity indexes refer to the output per hour of all employees. For some transportation industries, only indexes of output per employee are prepared. For some trade and service industries, indexes of output per hour of all persons (including the self-employed) are constructed.

Additional sources of information

For a complete listing of available industry productivity indexes and their components, see *Productivity Measures for Selected Industries and Government Services (1985),* Bulletin 2322 (Bureau of Labor Statistics, 1989). For additional information about the methodology for computing the industry productivity measures see *Handbook of Methods,* Bulletin 2285 (Bureau of Labor Statistics, 1988), chapter 11.

There are breaks in the data series for Germany (1983), Italy (1986), the Netherlands (1983), and Sweden (1987). 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 last 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 work-seeking was reduced from 60 days to 4 weeks. These changes result in lowering Sweden's unemployment rate by 0.5 percentage point.

International Comparisons
(Tables 48–50)

Labor force and unemployment

Description of the series

Tables 48 and 49 present comparative measures of the labor force, employment,

and unemployment—approximating U.S. concepts—for the United States, Canada, Australia, Japan, and several 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 AND UNEMPLOYMENT 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; 15 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 data series for Germany (1983 and 1987), Italy (1986), the Netherlands (1983), and Sweden

(1987). For both Germany and the Netherlands, the 1983 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. The 1987 break for Germany reflects the incorporation of employment statistics based on the 1987 Population Census, which indicated that the level of employment was about one million higher than previously estimated. The impact of this change was to lower the adjusted unemployment rate by 0.3 percentage point. When historical data benchmarked to the 1987 Census became available, BLS will revise its comparative measures for Germany.

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 last 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 work-seeking was reduced from 60 days to 4 weeks. These changes result in lowering Sweden's unemployment rate by 0.5 percent point.

Additional sources of information

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

Manufacturing productivity and labor costs

Description of the series

Table 50 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 June) and in a *Monthly Labor Review* article.

Occupational Injury and Illness Data

(Table 51)

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	1987	1988	1987		1988				1989	
			III	IV	I	II	III	IV	I	II
Employment data										
Employment status of the civilian noninstitutionalized population (household survey):[1]										
Labor force participation rate	65.6	65.9	65.6	65.7	65.8	65.8	65.9	66.1	66.4	66.5
Employment-population ratio	61.5	62.3	61.7	61.9	62.1	62.2	62.3	62.5	62.9	63.0
Unemployment rate	6.2	5.5	6.0	5.9	5.7	5.5	5.5	5.3	5.2	5.3
Men	6.2	5.5	6.0	5.8	5.6	5.4	5.4	5.4	5.2	5.1
16 to 24 years	12.6	11.4	12.2	11.9	11.8	11.2	11.4	11.3	11.2	11.1
25 years and over	4.8	4.2	4.6	4.4	4.3	4.2	4.1	4.1	4.0	3.9
Women	6.2	5.6	6.0	6.0	5.8	5.6	5.6	5.3	5.2	5.4
16 to 24 years	11.7	10.6	11.4	11.2	11.0	10.7	10.5	10.3	10.2	10.4
25 years and over	4.8	4.3	4.7	4.6	4.5	4.3	4.4	4.2	4.0	4.3
Unemployment rate, 15 weeks and over	1.7	1.3	1.6	1.5	1.4	1.3	1.3	1.2	1.1	1.1
Employment, nonagricultural (payroll data), in thousands:[1]										
Total	102,200	105,584	102,500	103,491	104,355	105,184	105,976	106,799	107,680	108,339
Private sector	85,190	88,212	85,481	86,336	87,111	87,851	88,577	89,288	90,104	90,661
Goods-producing	24,708	25,249	24,751	24,961	25,022	25,202	25,313	25,452	25,634	25,664
Manufacturing	19,024	19,403	19,061	19,199	19,271	19,360	19,435	19,550	19,659	19,663
Service-producing	77,492	80,335	77,749	78,530	79,333	79,983	80,663	81,346	82,047	82,676
Average hours:										
Private sector	34.8	34.7	34.8	34.8	34.7	34.7	34.7	34.7	34.7	34.7
Manufacturing	41.0	41.1	40.9	41.2	41.0	41.1	41.1	41.1	41.1	41.1
Overtime	3.7	3.9	3.8	3.9	3.8	3.9	3.9	3.9	3.9	3.8
Employment Cost Index										
Percent change in the ECI, compensation:										
All workers (excluding farm, household, and Federal workers)	3.6	5.0	1.2	.8	1.4	1.1	1.3	1.0	1.2	1.1
Private industry workers	3.3	4.9	1.0	.7	1.5	1.2	1.0	1.0	1.3	1.2
Goods-producing[2]	3.1	4.4	.8	1.0	1.8	1.1	.6	.8	1.0	1.1
Service-producing[2]	3.7	5.1	1.0	.5	1.3	1.4	1.2	1.2	1.5	1.2
State and local government workers	4.4	5.6	2.3	.9	1.3	.3	2.7	1.1	1.2	.6
Workers by bargaining status (private industry):										
Union	2.8	3.9	.6	1.1	1.6	1.0	.7	.5	.8	1.0
Nonunion	3.6	5.1	1.1	.6	1.5	1.3	1.1	1.2	1.5	1.2

[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	1987	1988	1987 III	1987 IV	1988 I	1988 II	1988 III	1988 IV	1989 I	1989 II
Compensation data [1], [2]										
Employment Cost Index--compensation (wages, salaries, benefits):										
Civilian nonfarm	3.6	5.0	1.2	0.8	1.4	1.1	1.3	1.0	1.2	1.1
Private nonfarm	3.3	4.9	1.0	.7	1.5	1.2	1.0	1.0	1.3	1.2
Employment Cost Index--wages and salaries										
Civilian nonfarm	3.5	4.3	1.3	.7	1.0	.9	1.3	1.0	1.1	.8
Private nonfarm	3.3	4.1	1.0	.6	1.0	1.1	1.0	1.0	1.1	1.0
Price data [1]										
Consumer Price Index (All urban consumers): All items	4.4	4.4	1.3	.3	1.0	1.3	1.5	.6	1.5	1.5
Producer Price Index:										
Finished goods	2.2	4.0	.2	.1	.5	1.3	.8	1.3	1.9	1.8
Finished consumer goods	2.6	4.0	.3	-.2	.4	1.4	1.0	1.1	2.2	2.2
Capital equipment	1.3	3.6	-.2	1.1	.7	.6	.4	1.8	.9	.9
Intermediate materials, supplies, components	5.4	5.6	1.2	.9	1.1	2.6	1.2	.6	1.9	1.0
Crude materials	8.9	3.1	.6	-1.4	-.3	4.0	-1.2	.6	6.1	.7
Productivity data [3]										
Output per hour of all persons:										
Business sector	1.2	1.8	3.9	2.9	2.7	-2.0	3.1	.2	1.0	1.3
Nonfarm business sector	1.1	2.1	3.6	2.7	3.0	-1.5	3.4	1.9	-1.3	.7
Nonfinancial corporations [4]	2.2	2.6	5.3	1.9	4.3	.6	1.4	-.4	-1.8	-.2

[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 1988 I	II	III	IV	1989 I	II	Four quarters ended-- 1988 I	II	III	IV	1989 I	II
Average hourly compensation: [1]												
All persons, business sector	2.8	5.9	5.8	5.2	4.8	6.8	4.4	5.2	5.4	4.9	5.4	5.7
All persons, nonfarm business sector	2.7	5.5	5.5	5.9	4.8	5.6	4.3	5.1	5.2	4.9	5.4	5.5
Employment Cost Index--compensation:												
Civilian nonfarm [2]	1.4	1.1	1.3	1.0	1.2	1.1	4.1	4.6	4.7	5.0	4.8	4.8
Private nonfarm	1.5	1.2	1.0	1.0	1.3	1.2	3.9	4.5	4.5	4.9	4.6	4.5
Union	1.6	1.0	.7	.5	.8	1.0	3.9	4.3	4.5	3.9	3.0	3.1
Nonunion	1.5	1.3	1.1	1.2	1.5	1.2	4.0	4.5	4.5	5.1	5.1	5.0
State and local governments	1.3	.3	2.7	1.1	1.2	.6	4.9	5.0	5.4	5.6	5.5	5.8
Employment Cost Index--wages and salaries:												
Civilian nonfarm [2]	1.0	.9	1.3	1.0	1.1	.8	3.5	3.9	3.9	4.3	4.4	4.3
Private nonfarm	1.0	1.1	1.0	1.0	1.1	1.0	3.3	3.7	3.7	4.1	4.2	4.1
Union	.4	.8	.7	.4	.7	.8	2.6	2.9	2.9	2.2	2.5	2.6
Nonunion	1.0	1.2	1.0	1.1	1.3	1.0	3.5	4.0	3.9	4.5	4.8	4.6
State and local governments	.9	.3	2.6	1.0	.8	.5	4.4	4.4	4.7	4.8	4.8	5.0
Total effective wage adjustments [3]	.4	.9	.8	.5	.5	1.0	3.2	3.0	2.9	2.6	2.7	2.8
From current settlements	.1	.3	.2	.1	.1	.3	.8	1.0	1.0	.7	.7	.7
From prior settlements	.3	.5	.4	.2	.3	.5	1.8	1.6	1.4	1.3	1.3	1.3
From cost-of-living provision	.1	.1	.2	.2	.1	.2	.5	.5	.5	.6	.6	.8
Negotiated wage adjustments from settlements: [3]												
First-year adjustments	2.1	2.6	2.7	2.6	3.2	3.9	2.4	2.4	2.5	2.5	2.7	3.2
Annual rate over life of contract	2.3	2.2	2.8	2.2	3.1	3.3	2.2	2.0	2.2	2.4	2.5	2.9
Negotiated wage and benefit adjustments from settlements: [4]												
First-year adjustment	1.8	3.1	3.4	3.5	3.2	5.0	3.1	3.0	3.1	3.1	3.3	3.8
Annual rate over life of contract	1.8	2.4	3.2	2.1	3.4	3.4	2.5	2.3	2.5	2.5	2.6	3.0

[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] 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		1988					1989							
	1987	1988	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
TOTAL															
Noninstitutional population [1], [2]	184,490	186,322	186,522	186,666	186,801	186,949	187,098	187,340	187,461	187,581	187,708	187,854	187,995	188,149	188,286
Labor force[2]	121,602	123,378	123,692	123,688	123,778	124,215	124,259	125,124	124,865	124,948	125,343	125,283	125,768	125,622	125,706
Participation rate [3]	65.9	66.2	66.3	66.3	66.3	66.4	66.4	66.8	66.6	66.6	66.8	66.7	66.9	66.8	66.8
Total employed [2]	114,177	116,677	116,895	117,074	117,260	117,652	117,705	118,407	118,537	118,820	118,797	118,888	119,207	119,125	119,285
Employment-population ratio [4]	61.9	62.6	62.7	62.7	62.8	62.9	62.9	63.2	63.2	63.3	63.3	63.3	63.4	63.3	63.4
Resident Armed Forces [1]	1,737	1,709	1,692	1,704	1,687	1,705	1,696	1,696	1,684	1,684	1,684	1,673	1,666	1,666	1,688
Civilian employed	112,440	114,968	115,203	115,370	115,573	115,947	116,009	116,711	116,853	117,136	117,113	117,215	117,541	117,459	117,597
Agriculture	3,208	3,169	3,142	3,176	3,238	3,238	3,193	3,300	3,223	3,206	3,104	3,112	3,096	3,219	3,307
Nonagricultural industries	109,232	111,800	112,061	112,194	112,335	112,709	112,816	113,411	113,630	113,930	114,009	114,102	114,445	114,240	114,290
Unemployed	7,425	6,701	6,797	6,614	6,518	6,563	6,554	6,716	6,328	6,128	6,546	6,395	6,561	6,497	6,421
Unemployment rate [5]	6.1	5.4	5.5	5.3	5.3	5.3	5.3	5.4	5.1	4.9	5.2	5.1	5.2	5.2	5.1
Not in labor force	62,888	62,944	62,830	62,978	63,023	62,734	62,839	62,216	62,596	62,633	62,365	62,571	62,228	62,527	62,580
Men, 16 years and over															
Noninstitutional population [1], [2]	88,476	89,404	89,504	89,577	89,637	89,716	89,792	89,914	89,973	90,032	90,094	90,167	90,237	90,315	90,384
Labor force[2]	67,784	68,474	68,685	68,604	68,569	68,686	68,638	69,032	69,113	69,190	69,360	69,114	69,507	69,245	69,337
Participation rate [3]	76.6	76.6	76.7	76.6	76.5	76.6	76.4	76.8	76.8	76.9	77.0	76.7	77.0	76.7	76.7
Total employed [2]	63,684	64,820	64,931	65,015	64,976	65,074	65,055	65,322	65,572	65,920	65,767	65,713	66,110	65,961	65,934
Employment-population ratio [4]	72.0	72.5	72.5	72.6	72.5	72.5	72.5	72.6	72.9	73.2	73.0	72.9	73.3	73.0	72.9
Resident Armed Forces [1]	1,577	1,547	1,529	1,540	1,526	1,542	1,534	1,532	1,521	1,521	1,521	1,511	1,501	1,499	1,519
Civilian employed	62,107	63,273	63,402	63,475	63,450	63,532	63,521	63,790	64,051	64,399	64,246	64,202	64,609	64,462	64,415
Unemployed	4,101	3,655	3,754	3,589	3,593	3,612	3,583	3,710	3,540	3,270	3,593	3,401	3,397	3,284	3,403
Unemployment rate [5]	6.1	5.3	5.5	5.2	5.2	5.3	5.2	5.4	5.1	4.7	5.2	4.9	4.9	4.7	4.9
Women, 16 years and over															
Noninstitutional population [1], [2]	96,013	96,918	97,018	97,089	97,164	97,234	97,306	97,427	97,488	97,550	97,614	97,687	97,758	97,834	97,902
Labor force[2]	53,818	54,904	55,007	55,084	55,209	55,529	55,621	56,091	55,752	55,758	55,983	56,169	56,261	56,377	56,370
Participation rate [3]	56.1	56.6	56.7	56.7	56.8	57.1	57.2	57.6	57.2	57.2	57.4	57.5	57.6	57.6	57.6
Total employed[2]	50,494	51,858	51,964	52,059	52,284	52,578	52,650	53,085	52,965	52,900	53,029	53,175	53,097	53,164	53,352
Employment-population ratio [4]	52.6	53.5	53.6	53.6	53.8	54.1	54.1	54.5	54.3	54.2	54.3	54.4	54.3	54.3	54.5
Resident Armed Forces [1]	160	162	163	164	161	163	162	164	163	163	163	162	165	167	169
Civilian employed	50,334	51,696	51,801	51,895	52,123	52,415	52,488	52,921	52,802	52,737	52,866	53,013	52,932	52,997	53,183
Unemployed	3,324	3,046	3,043	3,025	2,925	2,951	2,971	3,006	2,787	2,858	2,953	2,994	3,164	3,213	3,018
Unemployment rate [5]	6.2	5.5	5.5	5.5	5.3	5.3	5.3	5.4	5.0	5.1	5.3	5.3	5.6	5.7	5.4

[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		1988					1989							
	1987	1988	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
TOTAL															
Civilian noninstitutional population[1]	182,753	184,613	184,830	184,962	185,114	185,244	185,402	185,644	185,777	185,897	186,024	186,181	186,329	186,483	186,598
Civilian labor force	119,865	121,669	122,000	121,984	122,091	122,510	122,563	123,428	123,181	123,264	123,659	123,610	124,102	123,956	124,018
Participation rate	65.6	65.9	66.0	66.0	66.0	66.1	66.1	66.5	66.3	66.3	66.5	66.4	66.6	66.5	66.5
Employed	112,440	114,968	115,203	115,370	115,573	115,947	116,009	116,711	116,853	117,136	117,113	117,215	117,541	117,459	117,597
Employment-population ratio[2]	61.5	62.3	62.3	62.4	62.4	62.6	62.6	62.9	62.9	63.0	63.0	63.0	63.1	63.0	63.0
Unemployed	7,425	6,701	6,797	6,614	6,518	6,563	6,554	6,716	6,328	6,128	6,546	6,395	6,561	6,497	6,421
Unemployment rate	6.2	5.5	5.6	5.4	5.3	5.4	5.3	5.4	5.1	5.0	5.3	5.2	5.3	5.2	5.2
Not in labor force	62,888	62,944	62,830	62,978	63,023	62,734	62,839	62,216	62,596	62,633	62,365	62,571	62,228	62,527	62,580
Men, 20 years and over															
Civilian noninstitutional population[1]	79,565	80,553	80,669	80,751	80,851	80,924	81,001	81,162	81,256	81,333	81,413	81,524	81,592	81,679	81,754
Civilian labor force	62,095	62,768	62,916	62,884	62,915	62,995	63,002	63,358	63,490	63,557	63,709	63,503	63,831	63,656	63,643
Participation rate	78.0	77.9	78.0	77.9	77.8	77.8	77.8	78.1	78.1	78.1	78.3	77.9	78.2	77.9	77.8
Employed	58,726	59,781	59,839	59,979	60,004	59,999	60,049	60,420	60,636	60,869	60,757	60,798	61,093	60,921	60,853
Employment-population ratio[2]	73.8	74.2	74.2	74.3	74.2	74.1	74.1	74.4	74.6	74.8	74.6	74.6	74.9	74.6	74.4
Agriculture	2,329	2,271	2,273	2,249	2,315	2,313	2,292	2,277	2,320	2,317	2,252	2,284	2,256	2,342	2,364
Nonagricultural industries	56,397	57,510	57,566	57,730	57,689	57,686	57,757	58,143	58,316	58,552	58,505	58,514	58,837	58,579	58,489
Unemployed	3,369	2,987	3,077	2,905	2,911	2,996	2,953	2,938	2,853	2,688	2,952	2,705	2,737	2,734	2,790
Unemployment rate	5.4	4.8	4.9	4.6	4.6	4.8	4.7	4.6	4.5	4.2	4.6	4.3	4.3	4.3	4.4
Women, 20 years and over															
Civilian noninstitutional population[1]	88,583	89,532	89,670	89,735	89,807	89,887	89,954	90,072	90,153	90,242	90,318	90,432	90,526	90,607	90,684
Civilian labor force	49,783	50,870	50,959	50,991	51,201	51,558	51,587	51,998	51,821	51,851	51,992	52,171	52,231	52,463	52,373
Participation rate	56.2	56.8	56.8	56.8	57.0	57.4	57.3	57.7	57.5	57.5	57.6	57.7	57.7	57.9	57.8
Employed	47,074	48,383	48,492	48,535	48,788	49,113	49,165	49,543	49,514	49,484	49,544	49,690	49,661	49,850	49,905
Employment-population ratio[2]	53.1	54.0	54.1	54.1	54.3	54.6	54.7	55.0	54.9	54.8	54.9	54.9	54.9	55.0	55.0
Agriculture	622	625	609	638	640	640	646	715	666	664	615	628	610	627	644
Nonagricultural industries	46,453	47,757	47,883	47,897	48,148	48,473	48,519	48,827	48,849	48,819	48,929	49,062	49,051	49,223	49,261
Unemployed	2,709	2,487	2,467	2,456	2,413	2,445	2,422	2,455	2,306	2,367	2,448	2,480	2,570	2,613	2,468
Unemployment rate	5.4	4.9	4.8	4.8	4.7	4.7	4.7	4.7	4.5	4.6	4.7	4.8	4.9	5.0	4.7
Both sexes, 16 to 19 years															
Civilian noninstitutional population[1]	14,606	14,527	14,491	14,477	14,456	14,433	14,447	14,410	14,367	14,323	14,293	14,224	14,211	14,196	14,160
Civilian labor force	7,988	8,031	8,125	8,109	7,975	7,957	7,974	8,071	7,871	7,856	7,958	7,936	8,040	7,837	8,003
Participation rate	54.7	55.3	56.1	56.0	55.2	55.1	55.2	56.0	54.8	54.9	55.7	55.8	56.6	55.2	56.5
Employed	6,640	6,805	6,872	6,856	6,781	6,835	6,795	6,748	6,703	6,783	6,812	6,726	6,786	6,687	6,840
Employment-population ratio[2]	45.5	46.8	47.4	47.4	46.9	47.4	47.0	46.8	46.7	47.4	47.7	47.3	47.8	47.1	48.3
Agriculture	258	273	260	289	283	285	255	307	237	224	237	200	230	249	300
Nonagricultural industries	6,382	6,532	6,612	6,567	6,498	6,550	6,540	6,441	6,466	6,559	6,575	6,526	6,556	6,438	6,540
Unemployed	1,347	1,226	1,253	1,253	1,194	1,122	1,179	1,323	1,168	1,073	1,146	1,210	1,254	1,150	1,163
Unemployment rate	16.9	15.3	15.4	15.5	15.0	14.1	14.8	16.4	14.8	13.7	14.4	15.2	15.6	14.7	14.5
White															
Civilian noninstitutional population[1]	156,958	158,194	158,340	158,422	158,524	158,603	158,705	158,865	158,947	159,020	159,098	159,200	159,297	159,400	159,470
Civilian labor force	103,290	104,756	105,013	105,036	105,051	105,395	105,411	106,106	105,798	105,988	106,312	106,164	106,455	106,424	106,446
Participation rate	65.8	66.2	66.3	66.3	66.3	66.5	66.4	66.8	66.6	66.7	66.8	66.7	66.8	66.8	66.8
Employed	97,789	99,812	99,907	100,058	100,199	100,543	100,567	101,183	101,278	101,554	101,458	101,465	101,693	101,581	101,670
Employment-population ratio[2]	62.3	63.1	63.1	63.2	63.2	63.4	63.4	63.7	63.7	63.9	63.8	63.7	63.8	63.7	63.8
Unemployed	5,501	4,944	5,106	4,978	4,852	4,852	4,844	4,923	4,521	4,434	4,854	4,699	4,762	4,843	4,777
Unemployment rate	5.3	4.7	4.9	4.7	4.6	4.6	4.6	4.6	4.3	4.2	4.6	4.4	4.5	4.6	4.5
Black															
Civilian noninstitutional population[1]	20,352	20,692	20,736	20,762	20,786	20,811	20,842	20,877	20,905	20,930	20,956	20,986	21,012	21,038	21,060
Civilian labor force	12,993	13,205	13,236	13,201	13,290	13,330	13,405	13,477	13,476	13,425	13,287	13,444	13,600	13,555	13,448
Participation rate	63.8	63.8	63.8	63.6	63.9	64.1	64.3	64.6	64.5	64.1	63.4	64.1	64.7	64.4	63.9
Employed	11,309	11,658	11,733	11,758	11,807	11,831	11,856	11,860	11,873	11,961	11,846	11,968	11,982	12,082	11,958
Employment-population ratio[2]	55.6	56.3	56.6	56.6	56.8	56.8	56.9	56.8	56.8	57.1	56.5	57.0	57.0	57.4	56.8
Unemployed	1,684	1,547	1,503	1,443	1,483	1,499	1,549	1,617	1,603	1,464	1,442	1,476	1,618	1,473	1,490
Unemployment rate	13.0	11.7	11.4	10.9	11.2	11.2	11.6	12.0	11.9	10.9	10.8	11.0	11.9	10.9	11.1

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		1988					1989							
	1987	1988	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Hispanic origin															
Civilian noninstitutional population[1]	12,867	13,325	13,381	13,419	13,458	13,495	13,533	13,564	13,606	13,649	13,690	13,731	13,772	13,813	13,853
Civilian labor force	8,541	8,982	8,963	9,061	9,075	9,148	9,133	9,205	9,219	9,210	9,262	9,428	9,272	9,433	9,364
Participation rate	66.4	67.4	67.0	67.5	67.4	67.8	67.5	67.9	67.8	67.5	67.7	68.7	67.3	68.3	67.6
Employed	7,790	8,250	8,214	8,378	8,368	8,419	8,441	8,434	8,596	8,607	8,495	8,686	8,524	8,587	8,521
Employment-population ratio[2]	60.5	61.9	61.4	62.4	62.2	62.4	62.4	62.2	63.2	63.1	62.1	63.3	61.9	62.2	61.5
Unemployed	751	732	749	683	707	729	692	771	624	603	767	742	748	846	843
Unemployment rate	8.8	8.2	8.4	7.5	7.8	8.0	7.6	8.4	6.8	6.5	8.3	7.9	8.1	9.0	9.0

[1] The population figures are not seasonally adjusted.
[2] Civilian employment as a percent of the civilian noninstitutional population.
NOTE: Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races" groups are not presented and Hispanics are included in both the white and black population groups.

6. Selected employment indicators, monthly data seasonally adjusted

(In thousands)

Selected categories	Annual average		1988					1989							
	1987	1988	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
CHARACTERISTIC															
Civilian employed, 16 years and over	112,440	114,968	115,203	115,370	115,573	115,947	116,009	116,711	116,853	117,136	117,113	117,215	117,541	117,459	117,597
Men	62,107	63,273	63,402	63,475	63,450	63,532	63,521	63,790	64,051	64,399	64,246	64,202	64,609	64,462	64,415
Women	50,334	51,696	51,801	51,895	52,123	52,415	52,488	52,921	52,802	52,737	52,866	53,013	52,932	52,997	53,183
Married men, spouse present	40,265	40,472	40,511	40,513	40,504	40,407	40,483	40,925	40,928	41,083	40,890	40,902	41,102	41,089	40,636
Married women, spouse present	28,107	28,756	28,809	28,836	28,890	28,995	29,053	29,589	29,412	29,569	29,656	29,739	29,481	29,552	29,220
Women who maintain families	6,060	6,211	6,280	6,253	6,344	6,375	6,399	6,416	6,385	6,256	6,243	6,331	6,403	6,456	6,342
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture:															
Wage and salary workers	1,632	1,621	1,607	1,612	1,661	1,672	1,698	1,684	1,645	1,656	1,554	1,610	1,550	1,695	1,803
Self-employed workers	1,423	1,398	1,411	1,421	1,405	1,450	1,349	1,387	1,419	1,403	1,419	1,358	1,412	1,434	1,420
Unpaid family workers	153	150	158	137	177	125	149	189	150	138	124	127	126	126	137
Nonagricultural industries:															
Wage and salary workers	100,771	103,021	103,207	103,501	103,733	103,770	103,904	104,510	104,797	104,982	104,985	105,245	105,519	105,321	105,259
Government	16,800	17,114	17,111	17,145	17,240	17,387	17,423	17,393	17,311	17,382	17,180	17,230	17,261	17,519	17,591
Private industries	83,970	85,907	86,096	86,356	86,493	86,383	86,481	87,117	87,486	87,600	87,806	88,015	88,259	87,803	87,668
Private households	1,208	1,153	1,128	1,119	1,152	1,209	1,210	1,196	1,135	1,163	1,117	1,128	1,140	1,093	1,146
Other	82,762	84,754	84,968	85,237	85,341	85,174	85,271	85,921	86,350	86,437	86,689	86,887	87,118	86,710	86,522
Self-employed workers	8,201	8,519	8,508	8,570	8,479	8,619	8,602	8,718	8,517	8,645	8,671	8,516	8,570	8,606	8,625
Unpaid family workers	260	260	241	230	232	300	266	298	285	332	281	322	241	239	264
PERSONS AT WORK PART TIME[1]															
All industries:															
Part time for economic reasons	5,401	5,206	5,192	5,097	4,963	5,061	5,321	5,097	4,981	4,968	5,143	4,837	4,957	4,750	4,785
Slack work	2,385	2,350	2,315	2,266	2,220	2,279	2,549	2,302	2,303	2,232	2,373	2,296	2,318	2,311	2,282
Could only find part-time work	2,672	2,487	2,473	2,389	2,399	2,375	2,410	2,352	2,333	2,393	2,425	2,343	2,289	2,138	2,107
Voluntary part time	14,395	14,963	14,999	15,270	15,161	15,446	15,363	15,401	15,126	15,561	15,498	15,316	15,416	15,652	15,614
Nonagricultural industries:															
Part time for economic reasons	5,122	4,965	4,972	4,862	4,727	4,819	5,033	4,837	4,697	4,709	4,930	4,609	4,801	4,505	4,553
Slack work	2,201	2,199	2,171	2,102	2,095	2,116	2,377	2,144	2,105	2,048	2,243	2,102	2,190	2,185	2,129
Could only find part-time work	2,587	2,408	2,408	2,317	2,319	2,288	2,307	2,283	2,272	2,317	2,369	2,301	2,236	2,057	2,024
Voluntary part time	13,928	14,509	14,564	14,819	14,679	14,986	14,928	14,970	14,688	15,127	15,060	14,976	14,977	15,219	15,094

[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		1988					1989							
	1987	1988	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
CHARACTERISTIC															
Total, all civilian workers	6.2	5.5	5.6	5.4	5.3	5.4	5.3	5.4	5.1	5.0	5.3	5.2	5.3	5.2	5.2
Both sexes, 16 to 19 years	16.9	15.3	15.4	15.5	15.0	14.1	14.8	16.4	14.8	13.7	14.4	15.2	15.6	14.7	14.5
Men, 20 years and over	5.4	4.8	4.9	4.6	4.6	4.8	4.7	4.6	4.5	4.2	4.6	4.3	4.3	4.3	4.4
Women, 20 years and over	5.4	4.9	4.8	4.8	4.7	4.7	4.7	4.7	4.5	4.6	4.7	4.8	4.9	5.0	4.7
White, total	5.3	4.7	4.9	4.7	4.6	4.6	4.6	4.6	4.3	4.2	4.6	4.4	4.5	4.6	4.5
Both sexes, 16 to 19 years	14.4	13.1	13.7	13.4	12.9	11.9	12.6	14.1	12.1	11.3	12.3	13.1	13.0	12.8	12.8
Men, 16 to 19 years	15.5	13.9	13.9	14.5	14.4	12.6	13.4	16.4	14.0	12.3	13.1	14.8	13.4	12.4	12.9
Women, 16 to 19 years	13.4	12.3	13.5	12.3	11.3	11.3	11.8	11.7	10.2	10.2	11.5	11.2	12.6	13.4	12.7
Men, 20 years and over	4.8	4.1	4.3	4.1	4.1	4.2	4.1	4.0	3.8	3.6	4.0	3.6	3.7	3.8	3.8
Women, 20 years and over	4.6	4.1	4.1	4.1	4.0	4.0	3.9	3.9	3.6	3.8	4.1	4.1	4.1	4.3	4.1
Black, total	13.0	11.7	11.4	10.9	11.2	11.2	11.6	12.0	11.9	10.9	10.8	11.0	11.9	10.9	11.1
Both sexes, 16 to 19 years	34.7	32.4	32.1	31.9	30.9	31.1	29.6	34.5	32.4	31.6	30.8	32.4	36.5	27.4	31.6
Men, 16 to 19 years	34.4	32.7	32.1	31.9	32.8	32.1	29.8	36.7	33.1	28.6	35.5	36.9	33.5	22.1	30.0
Women, 16 to 19 years	34.9	32.0	32.0	31.9	28.6	29.9	29.3	32.0	31.6	34.8	26.2	28.4	40.2	33.1	33.4
Men, 20 years and over	11.1	10.1	9.7	9.1	9.6	9.8	10.0	10.4	10.5	9.8	10.0	9.4	9.4	9.3	9.8
Women, 20 years and over	11.6	10.4	10.0	9.7	9.8	9.8	10.5	10.4	10.3	9.1	8.8	9.5	10.5	9.9	9.4
Hispanic origin, total	8.8	8.2	8.4	7.5	7.8	8.0	7.6	8.4	6.8	6.5	8.3	7.9	8.1	9.0	9.0
Married men, spouse present	3.9	3.3	3.4	3.1	3.1	3.3	3.1	3.1	3.1	2.9	3.2	2.9	2.8	2.9	3.1
Married women, spouse present	4.3	3.9	4.0	3.8	3.7	3.8	3.7	3.6	3.4	3.5	4.0	3.8	3.8	3.8	3.9
Women who maintain families	9.2	8.1	7.5	8.1	7.9	7.7	8.2	8.0	8.0	7.9	7.6	8.3	7.9	8.7	8.0
Full-time workers	5.8	5.2	5.3	5.1	5.0	5.0	5.1	5.0	4.8	4.8	5.0	4.8	4.8	4.9	4.9
Part-time workers	8.4	7.6	7.4	7.4	7.4	7.1	7.0	7.9	7.3	6.2	7.2	6.9	7.7	7.2	6.9
Unemployed 15 weeks and over	1.7	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.1	1.1	1.2	1.1	1.0	1.2	1.1
Labor force time lost[1]	7.1	6.3	6.4	6.3	6.1	6.2	6.3	6.2	5.9	5.8	6.0	5.9	6.1	6.0	5.9
INDUSTRY															
Nonagricultural private wage and salary workers	6.2	5.5	5.6	5.4	5.4	5.5	5.4	5.6	5.1	5.0	5.4	5.2	5.3	5.4	5.4
Mining	10.0	7.9	7.0	8.6	8.8	8.9	7.7	6.1	8.0	7.0	5.6	4.5	3.7	5.5	6.5
Construction	11.6	10.6	10.7	9.6	10.0	10.6	10.4	10.4	10.0	9.4	9.7	9.3	10.0	10.5	10.3
Manufacturing	6.0	5.3	5.5	5.4	5.3	5.1	5.2	5.3	4.9	4.8	4.9	4.9	5.2	5.0	5.2
Durable goods	5.8	5.0	5.0	5.2	5.0	4.9	5.0	5.0	4.4	4.7	4.7	4.5	4.6	4.7	4.8
Nondurable goods	6.3	5.7	6.3	5.8	5.7	5.3	5.5	5.7	5.5	4.9	5.2	5.5	6.1	5.5	5.9
Transportation and public utilities	4.5	3.9	3.8	3.8	3.5	4.0	3.8	3.8	3.9	3.9	4.0	4.0	4.4	4.2	3.6
Wholesale and retail trade	6.9	6.2	6.4	6.2	6.0	6.2	6.3	6.3	5.6	5.6	5.9	5.5	6.0	6.2	6.0
Finance and service industries	4.9	4.5	4.4	4.4	4.5	4.6	4.1	4.7	4.3	4.1	4.8	4.7	4.3	4.4	4.4
Government workers	3.5	2.8	2.9	2.7	2.6	2.5	2.7	2.7	2.7	2.6	2.7	2.9	3.0	2.8	2.7
Agricultural wage and salary workers	10.5	10.6	11.0	10.8	10.2	9.3	8.8	9.5	8.9	8.9	10.5	10.3	11.0	8.5	8.6

[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		1988					1989							
	1987	1988	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Total, 16 years and over	6.2	5.5	5.6	5.4	5.3	5.4	5.3	5.4	5.1	5.0	5.3	5.2	5.3	5.2	5.2
16 to 24 years	12.2	11.0	11.0	10.9	10.9	10.6	10.9	11.9	10.5	9.8	10.5	10.4	11.3	10.7	10.9
16 to 19 years	16.9	15.3	15.4	15.5	15.0	14.1	14.8	16.4	14.8	13.7	14.4	15.2	15.6	14.7	14.5
16 to 17 years	19.1	17.4	18.5	19.6	17.2	15.8	16.6	18.3	18.2	15.3	14.9	16.2	17.5	17.8	18.1
18 to 19 years	15.2	13.8	13.7	12.8	13.3	12.9	13.3	15.4	12.7	12.5	13.8	14.5	14.9	12.4	12.5
20 to 24 years	9.7	8.7	8.4	8.4	8.6	8.7	8.7	9.3	8.1	7.7	8.4	7.7	8.9	8.6	8.8
25 years and over	4.8	4.3	4.4	4.2	4.1	4.2	4.1	4.1	4.0	3.9	4.1	4.0	4.0	4.0	4.0
25 to 54 years	5.0	4.5	4.5	4.4	4.3	4.4	4.3	4.2	4.2	4.1	4.4	4.2	4.1	4.2	4.1
55 years and over	3.3	3.1	3.2	2.9	2.8	2.8	3.0	3.1	3.1	2.6	2.9	2.9	3.3	3.1	3.1
Men, 16 years and over	6.2	5.5	5.6	5.4	5.4	5.4	5.3	5.5	5.2	4.8	5.3	5.0	5.0	4.8	5.0
16 to 24 years	12.6	11.4	11.4	11.3	11.8	10.9	11.1	12.8	11.1	9.7	10.7	11.0	11.5	10.4	11.4
16 to 19 years	17.8	16.0	16.0	16.4	16.5	14.8	15.4	18.6	16.7	14.2	15.5	17.0	15.8	13.4	14.7
16 to 17 years	20.2	18.2	17.7	20.8	18.5	17.3	17.3	20.6	19.6	15.8	17.0	18.8	20.0	17.4	17.4
18 to 19 years	16.0	14.6	14.5	13.5	15.0	13.0	13.5	17.9	15.1	13.2	14.6	15.7	13.6	10.7	12.7
20 to 24 years	9.9	8.9	8.9	8.5	9.2	8.8	8.7	9.6	8.1	7.2	8.0	7.7	9.2	8.7	9.6
25 years and over	4.8	4.2	4.4	4.1	4.0	4.2	4.1	4.0	4.0	3.8	4.2	3.7	3.7	3.7	3.7
25 to 54 years	5.0	4.4	4.5	4.3	4.2	4.4	4.3	4.2	4.1	4.0	4.4	3.9	3.7	3.9	3.8
55 years and over	3.5	3.3	3.4	2.9	3.0	3.2	3.3	3.0	3.4	2.8	3.2	2.9	3.0	3.1	3.3
Women, 16 years and over	6.2	5.6	5.5	5.5	5.3	5.3	5.4	5.4	5.0	5.1	5.3	5.3	5.6	5.7	5.4
16 to 24 years	11.7	10.6	10.4	10.5	9.9	10.3	10.7	10.9	9.7	10.0	10.4	9.8	11.0	11.1	10.2
16 to 19 years	15.9	14.4	14.8	14.5	13.3	13.3	14.2	14.0	12.8	13.1	13.2	13.4	15.4	16.0	14.4
16 to 17 years	18.0	16.6	19.2	18.2	15.8	14.1	15.8	15.9	16.8	14.8	12.7	13.4	14.7	18.3	18.8
18 to 19 years	14.3	12.9	12.8	12.0	11.6	12.8	13.1	12.7	10.0	11.7	12.8	13.3	16.2	14.4	12.4
20 to 24 years	9.4	8.5	8.0	8.2	7.9	8.6	8.7	9.1	8.0	8.3	8.9	7.7	8.6	8.4	7.9
25 years and over	4.8	4.3	4.3	4.3	4.2	4.2	4.1	4.1	3.9	4.0	4.1	4.4	4.4	4.4	4.2
25 to 54 years	5.1	4.6	4.6	4.5	4.5	4.4	4.4	4.3	4.2	4.3	4.4	4.6	4.5	4.6	4.5
55 years and over	3.0	2.8	2.8	2.9	2.4	2.4	2.6	3.1	2.5	2.3	2.6	3.0	3.8	3.2	2.7

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

(Numbers in thousands)

Reason for unemployment	Annual average		1988					1989							
	1987	1988	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Job losers	3,566	3,092	3,112	3,079	2,951	3,031	3,066	3,121	2,876	2,831	2,984	2,724	2,765	2,920	2,984
On layoff	943	851	880	833	844	814	819	827	774	808	847	790	806	822	873
Other job losers	2,623	2,241	2,232	2,246	2,107	2,217	2,247	2,294	2,102	2,023	2,137	1,934	1,958	2,097	2,111
Job leavers	965	983	986	985	984	963	998	985	985	885	978	1,114	1,023	1,010	1,040
Reentrants	1,974	1,809	1,843	1,767	1,747	1,766	1,725	1,835	1,740	1,730	1,894	1,852	2,051	1,934	1,768
New entrants	920	816	800	761	747	799	799	780	765	713	671	683	742	724	628
PERCENT OF UNEMPLOYED															
Job losers	48.0	46.1	46.2	46.7	45.9	46.2	46.5	46.4	45.2	46.0	45.7	42.7	42.0	44.3	46.5
On layoff	12.7	12.7	13.1	12.6	13.1	12.4	12.4	12.3	12.2	13.1	13.0	12.4	12.3	12.5	13.6
Other job losers	35.3	33.4	33.1	34.1	32.8	33.8	34.1	34.1	33.0	32.8	32.7	30.3	29.8	31.8	32.9
Job leavers	13.0	14.7	14.6	14.9	15.3	14.7	15.1	14.7	15.5	14.4	15.0	17.5	15.5	15.3	16.2
Reentrants	26.6	27.0	27.3	26.8	27.2	26.9	26.2	27.3	27.3	28.1	29.0	29.1	31.2	29.4	27.5
New entrants	12.4	12.2	11.9	11.5	11.6	12.2	12.1	11.6	12.0	11.6	10.3	10.7	11.3	11.0	9.8
PERCENT OF CIVILIAN LABOR FORCE															
Job losers	3.0	2.5	2.6	2.5	2.4	2.5	2.5	2.5	2.3	2.3	2.4	2.2	2.2	2.4	2.4
Job leavers	.8	.8	.8	.8	.8	.8	.8	.8	.8	.7	.8	.9	.8	.8	.8
Reentrants	1.6	1.5	1.5	1.4	1.4	1.4	1.4	1.5	1.4	1.4	1.5	1.5	1.7	1.6	1.4
New entrants	.8	.7	.7	.6	.6	.7	.7	.6	.6	.6	.5	.6	.6	.6	.5

10. Duration of unemployment, monthly data seasonally adjusted

(Numbers in thousands)

Weeks of unemployment	Annual average		1988					1989							
	1987	1988	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Less than 5 weeks	3,246	3,084	3,158	3,116	3,059	3,117	3,029	3,181	3,247	3,055	3,090	3,041	3,309	3,149	3,071
5 to 14 weeks	2,196	2,007	1,956	1,896	1,835	1,935	2,039	2,081	1,865	1,821	2,034	2,017	1,999	1,927	2,011
15 weeks and over	1,983	1,610	1,636	1,568	1,554	1,502	1,495	1,512	1,304	1,310	1,426	1,313	1,258	1,472	1,305
15 to 26 weeks	943	801	831	775	788	787	758	757	665	648	689	702	659	846	737
27 weeks and over	1,040	809	805	793	766	715	737	755	639	663	737	611	599	626	567
Mean duration in weeks	14.5	13.5	13.5	13.5	13.4	12.6	12.8	12.7	12.1	12.4	12.7	11.8	11.1	12.0	11.3
Median duration in weeks	6.5	5.9	5.9	5.7	5.7	5.6	5.8	5.7	5.3	5.4	5.4	5.3	5.5	5.6	5.0

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

State	July 1988	July 1989	State	July 1988	July 1989
Alabama	7.5	7.8	Montana	6.5	5.2
Alaska	7.6	6.1	Nebraska	3.4	3.4
Arizona	7.1	6.1	Nevada	4.8	5.3
Arkansas	7.4	7.5	New Hampshire	2.7	3.2
California	5.9	5.8			
			New Jersey	4.2	4.5
Colorado	5.3	4.8	New Mexico	8.1	6.5
Connecticut	3.3	3.4	New York	4.2	4.6
Delaware	2.5	4.1	North Carolina	3.2	3.4
District of Columbia	4.2	4.9	North Dakota	4.4	3.8
Florida	5.1	6.0			
			Ohio	5.1	5.0
Georgia	5.8	5.4	Oklahoma	6.9	5.5
Hawaii	3.7	2.4	Oregon	5.9	5.2
Idaho	5.0	4.6	Pennsylvania	5.3	4.6
Illinois	6.2	5.3	Rhode Island	3.0	3.9
Indiana	4.6	3.9			
			South Carolina	4.4	4.5
Iowa	3.9	3.8	South Dakota	3.5	4.0
Kansas	4.5	3.9	Tennessee	6.3	4.8
Kentucky	8.1	6.1	Texas	6.6	7.3
Louisiana	10.4	9.7	Utah	4.9	3.9
Maine	2.9	3.4			
			Vermont	2.1	3.7
Maryland	4.6	3.9	Virginia	3.5	3.2
Massachusetts	3.6	4.6	Washington	6.2	5.7
Michigan	7.8	7.3	West Virginia	10.1	7.3
Minnesota	3.7	4.0	Wisconsin	3.6	4.0
Mississippi	9.0	8.3			
Missouri	5.6	5.2	Wyoming	5.4	6.1

- Data not available.

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	July 1988	June 1989	July 1989p	State	July 1988	June 1989	July 1989p
Alabama	1,560.5	1,575.2	1,569.8	Nebraska	686.2	716.7	708.0
Alaska	227.9	232.0	237.8	Nevada	541.4	575.9	579.6
Arizona	1,376.2	1,412.2	1,395.2	New Hampshire	530.0	540.5	532.5
Arkansas	857.4	889.0	881.6				
California	12,030.8	12,453.6	12,365.0	New Jersey	3,685.2	3,728.7	3,721.1
				New Mexico	537.1	555.7	551.7
Colorado	1,424.1	1,451.6	1,439.0	New York	8,192.2	8,352.1	8,273.7
Connecticut	1,663.7	1,709.1	1,690.9	North Carolina	2,932.9	3,038.1	2,986.9
Delaware	335.5	347.9	341.6	North Dakota	257.9	263.0	259.7
District of Columbia	686.2	692.5	699.3				
Florida	5,022.6	5,261.4	5,194.4	Ohio	4,678.8	4,831.8	4,795.2
				Oklahoma	1,137.1	1,144.1	1,137.0
Georgia	2,885.9	2,938.3	2,932.4	Oregon	1,149.1	1,209.0	1,192.1
Hawaii	478.6	493.2	493.2	Pennsylvania	5,042.9	5,139.1	5,099.4
Idaho	352.0	364.9	361.8	Rhode Island	455.4	461.7	457.2
Illinois	5,092.1	5,175.1	5,160.3				
Indiana	2,400.5	2,475.8	2,450.3	South Carolina	1,440.4	1,517.7	1,496.4
				South Dakota	266.7	273.7	268.3
Iowa	1,151.5	1,201.1	1,183.4	Tennessee	2,062.8	2,085.9	2,067.9
Kansas	1,024.2	1,059.9	1,042.0	Texas	6,645.5	6,790.6	6,779.6
Kentucky	1,363.3	1,400.1	1,384.8	Utah	654.1	690.7	681.5
Louisiana	1,501.0	1,520.9	1,513.8				
Maine	526.1	534.9	531.4	Vermont	251.3	256.8	254.7
				Virginia	2,790.2	2,920.8	2,899.7
Maryland	2,104.2	2,140.2	2,131.9	Washington	1,935.8	2,053.6	2,027.7
Massachusetts	3,114.3	3,174.3	3,137.2	West Virginia	618.0	619.3	605.8
Michigan	3,773.2	3,886.3	3,834.3	Wisconsin	2,161.1	2,225.4	2,201.3
Minnesota	2,029.5	2,105.1	2,084.3				
Mississippi	890.2	914.3	905.8	Wyoming	185.9	196.7	189.6
Missouri	2,230.3	2,278.4	2,262.5	Puerto Rico	840.2	854.5	850.1
Montana	276.6	288.9	282.0	Virgin Islands	41.5	41.3	42.1

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		1988					1989							
	1987	1988	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July[p]	Aug.[p]
TOTAL	102,200	105,584	105,954	106,207	106,475	106,824	107,097	107,442	107,711	107,888	108,101	108,310	108,607	108,791	108,901
PRIVATE SECTOR	85,190	88,212	88,578	88,736	88,991	89,299	89,574	89,897	90,124	90,291	90,475	90,623	90,884	91,030	91,083
GOODS-PRODUCING	24,708	25,249	25,303	25,313	25,384	25,460	25,513	25,626	25,629	25,646	25,671	25,672	25,648	25,683	25,724
Mining	717	721	725	719	717	712	711	711	711	714	720	722	715	707	729
Oil and gas extraction	402	406	408	404	400	396	394	393	394	397	400	401	402	404	404
Construction	4,967	5,125	5,153	5,163	5,162	5,191	5,213	5,267	5,270	5,252	5,279	5,283	5,283	5,317	5,325
General building contractors	1,320	1,368	1,372	1,374	1,363	1,375	1,380	1,404	1,398	1,380	1,377	1,388	1,384	1,392	1,403
Manufacturing	19,024	19,403	19,425	19,431	19,505	19,557	19,589	19,648	19,648	19,680	19,672	19,667	19,650	19,659	19,670
Production workers	12,970	13,254	13,270	13,263	13,324	13,365	13,385	13,423	13,426	13,442	13,430	13,426	13,400	13,415	13,424
Durable goods	11,194	11,437	11,462	11,464	11,509	11,545	11,565	11,605	11,594	11,604	11,600	11,594	11,567	11,554	11,567
Production workers	7,439	7,635	7,658	7,653	7,690	7,717	7,730	7,758	7,749	7,749	7,744	7,735	7,706	7,699	7,712
Lumber and wood products	741	765	761	763	770	775	780	784	778	777	772	771	769	767	766
Furniture and fixtures	516	530	529	530	531	532	532	532	534	535	537	534	534	535	531
Stone, clay, and glass products	586	600	600	600	603	605	607	607	608	607	606	604	603	602	603
Primary metal industries	747	774	776	779	783	784	785	786	786	788	788	787	787	786	787
Blast furnaces and basic steel products	268	277	277	277	277	277	276	276	276	276	275	276	276	276	277
Fabricated metal products	1,401	1,431	1,435	1,436	1,442	1,445	1,449	1,458	1,458	1,457	1,454	1,452	1,449	1,446	1,443
Machinery, except electrical	2,008	2,082	2,094	2,098	2,110	2,120	2,126	2,134	2,138	2,143	2,144	2,150	2,151	2,156	2,156
Electrical and electronic equipment	2,069	2,070	2,073	2,072	2,073	2,075	2,067	2,065	2,062	2,060	2,058	2,050	2,041	2,038	2,032
Transportation equipment	2,051	2,051	2,052	2,044	2,055	2,060	2,063	2,079	2,067	2,071	2,073	2,076	2,062	2,051	2,074
Motor vehicles and equipment	867	857	859	859	865	867	867	882	871	869	875	876	861	848	873
Instruments and related products	706	749	755	756	758	762	767	770	772	776	777	778	779	781	782
Miscellaneous manufacturing industries	371	386	387	386	384	387	389	390	391	390	391	392	392	392	393
Nondurable goods	7,830	7,967	7,963	7,967	7,996	8,012	8,024	8,043	8,054	8,076	8,072	8,073	8,083	8,105	8,103
Production workers	5,531	5,619	5,612	5,610	5,634	5,648	5,655	5,665	5,677	5,693	5,686	5,691	5,694	5,716	5,712
Food and kindred products	1,620	1,636	1,629	1,627	1,644	1,648	1,646	1,650	1,650	1,655	1,657	1,656	1,663	1,677	1,670
Tobacco manufactures	55	56	55	55	55	56	56	56	56	56	54	53	52	53	52
Textile mill products	726	729	723	726	726	725	724	728	728	729	728	728	729	731	729
Apparel and other textile products	1,099	1,092	1,085	1,085	1,083	1,088	1,090	1,092	1,096	1,101	1,098	1,095	1,093	1,096	1,098
Paper and allied products	680	693	694	693	695	695	696	696	696	697	696	697	697	700	700
Printing and publishing	1,506	1,561	1,568	1,573	1,577	1,581	1,588	1,595	1,595	1,600	1,601	1,603	1,607	1,609	1,614
Chemicals and allied products	1,026	1,065	1,071	1,072	1,074	1,075	1,079	1,084	1,085	1,088	1,090	1,094	1,096	1,094	1,094
Petroleum and coal products	164	162	162	162	162	162	162	160	161	161	162	162	163	163	163
Rubber and misc. plastics products	811	829	832	830	836	839	840	839	843	845	843	843	841	842	843
Leather and leather products	143	144	144	144	144	143	143	143	144	144	143	142	142	140	140
SERVICE-PRODUCING	77,492	80,335	80,651	80,894	81,091	81,364	81,584	81,816	82,082	82,242	82,430	82,638	82,959	83,108	83,177
Transportation and public utilities	5,372	5,548	5,572	5,581	5,596	5,616	5,634	5,654	5,667	5,666	5,682	5,700	5,716	5,741	5,619
Transportation	3,164	3,334	3,353	3,365	3,381	3,402	3,421	3,439	3,453	3,452	3,467	3,484	3,500	3,529	3,537
Communication and public utilities	2,208	2,214	2,219	2,216	2,215	2,214	2,213	2,215	2,214	2,214	2,215	2,216	2,216	2,212	2,082
Wholesale trade	5,844	6,029	6,051	6,071	6,086	6,104	6,125	6,146	6,171	6,197	6,206	6,222	6,230	6,240	6,246
Durable goods	3,427	3,561	3,578	3,590	3,599	3,612	3,626	3,638	3,657	3,676	3,676	3,685	3,693	3,700	3,706
Nondurable goods	2,417	2,467	2,473	2,481	2,487	2,492	2,499	2,508	2,514	2,521	2,530	2,537	2,537	2,540	2,540
Retail trade	18,483	19,110	19,182	19,188	19,229	19,282	19,328	19,407	19,460	19,488	19,489	19,528	19,551	19,582	19,601
General merchandise stores	2,412	2,461	2,454	2,452	2,447	2,452	2,460	2,472	2,481	2,490	2,492	2,491	2,493	2,481	2,477
Food stores	2,962	3,098	3,117	3,122	3,149	3,165	3,182	3,200	3,212	3,223	3,233	3,245	3,262	3,273	3,289
Automotive dealers and service stations	2,004	2,090	2,107	2,115	2,124	2,131	2,136	2,143	2,150	2,155	2,159	2,159	2,155	2,154	2,153
Eating and drinking places	6,106	6,282	6,302	6,296	6,314	6,322	6,328	6,323	6,332	6,322	6,335	6,348	6,362	6,370	6,385
Finance, insurance, and real estate	6,547	6,676	6,686	6,695	6,710	6,726	6,744	6,746	6,763	6,774	6,776	6,790	6,808	6,812	6,836
Finance	3,270	3,290	3,285	3,288	3,293	3,299	3,307	3,308	3,311	3,316	3,312	3,320	3,320	3,322	3,338
Insurance	2,024	2,082	2,087	2,092	2,098	2,102	2,110	2,109	2,116	2,117	2,119	2,123	2,129	2,130	2,135
Real estate	1,253	1,304	1,314	1,315	1,319	1,325	1,327	1,329	1,336	1,341	1,345	1,347	1,359	1,360	1,363
Services	24,236	25,600	25,784	25,888	25,986	26,111	26,230	26,318	26,434	26,520	26,651	26,711	26,931	26,972	27,057
Business services	5,195	5,571	5,617	5,651	5,667	5,682	5,715	5,707	5,729	5,736	5,760	5,776	5,799	5,782	5,801
Health services	6,805	7,144	7,187	7,228	7,267	7,313	7,359	7,396	7,442	7,488	7,528	7,570	7,616	7,650	7,698
Government	17,010	17,372	17,376	17,471	17,484	17,525	17,523	17,545	17,587	17,597	17,626	17,687	17,723	17,761	17,818
Federal	2,943	2,971	2,967	2,985	2,986	2,983	2,981	2,978	2,982	2,982	2,982	2,999	2,995	2,999	3,004
State	3,967	4,063	4,079	4,088	4,081	4,085	4,085	4,084	4,095	4,102	4,111	4,119	4,136	4,161	4,176
Local	10,100	10,339	10,330	10,398	10,417	10,457	10,457	10,483	10,510	10,513	10,533	10,569	10,592	10,601	10,638

[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		1988					1989							
	1987	1988	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July[p]	Aug.[p]
PRIVATE SECTOR	34.8	34.7	34.6	34.7	34.8	34.7	34.7	34.8	34.6	34.7	34.9	34.6	34.6	34.8	34.6
MANUFACTURING	41.0	41.1	41.0	41.1	41.2	41.2	41.0	41.1	41.1	41.0	41.3	41.0	41.0	41.0	40.9
Overtime hours	3.7	3.9	3.9	3.9	4.0	3.9	3.9	3.9	3.9	4.0	3.9	3.8	3.8	3.9	3.8
Durable goods	41.5	41.8	41.7	41.9	41.9	41.9	41.7	41.8	41.8	41.7	41.9	41.5	41.5	41.5	41.5
Overtime hours	3.8	4.1	4.1	4.1	4.2	4.2	4.1	4.1	4.1	4.1	4.1	3.9	3.9	4.0	4.0
Lumber and wood products	40.6	40.3	40.1	40.1	40.7	40.3	40.3	40.3	39.6	40.0	40.5	39.7	39.8	39.6	39.4
Furniture and fixtures	40.0	39.4	39.2	39.6	39.4	39.5	39.4	39.8	39.7	39.8	39.9	39.4	39.4	39.3	39.4
Stone, clay, and glass products	42.3	42.3	42.2	42.3	42.5	42.6	42.4	42.5	42.2	42.2	42.5	41.9	42.2	42.4	42.7
Primary metal industries	43.1	43.6	43.5	43.9	43.7	43.7	43.5	43.6	43.4	43.5	43.3	43.2	43.3	43.0	42.5
Blast furnaces and basic steel products	43.4	44.0	44.1	44.5	44.2	44.0	43.8	44.0	43.8	44.1	43.5	43.6	43.7	43.2	42.3
Fabricated metal products	41.6	41.9	41.8	42.0	41.9	42.1	41.8	41.9	41.9	41.8	41.9	41.7	41.5	41.6	41.6
Machinery except electrical	42.2	42.6	42.5	42.7	42.7	42.5	42.5	42.5	42.6	42.5	42.7	42.5	42.5	42.3	42.1
Electrical and electronic equipment	40.9	41.0	40.9	40.9	41.0	41.0	40.8	40.9	40.9	40.6	41.0	40.7	40.7	40.7	40.8
Transportation equipment	42.0	42.7	42.7	43.0	43.1	43.1	42.8	42.8	43.1	43.1	42.8	42.5	42.5	42.6	42.5
Motor vehicles and equipment	42.2	43.5	43.6	44.1	43.9	44.1	43.7	43.6	43.9	43.9	43.3	42.8	42.7	42.6	42.7
Instruments and related products	41.4	41.5	41.5	41.6	41.8	41.6	41.1	41.5	41.5	41.1	41.5	41.1	41.3	41.3	41.0
Miscellaneous manufacturing	39.4	39.2	39.3	39.2	39.1	39.3	39.0	39.4	39.5	39.5	39.8	39.6	39.4	39.3	39.8
Nondurable goods	40.2	40.1	40.1	40.2	40.2	40.2	40.0	40.1	40.2	40.1	40.4	40.2	40.3	40.2	40.2
Overtime hours	3.6	3.7	3.6	3.7	3.7	3.6	3.6	3.6	3.7	3.8	3.8	3.7	3.6	3.8	3.7
Food and kindred products	40.2	40.3	40.3	40.3	40.4	40.6	40.2	40.1	40.3	40.4	40.7	40.5	40.7	41.1	40.8
Textile mill products	41.8	41.1	41.0	41.0	41.0	41.0	40.5	40.9	40.8	41.1	41.7	41.4	41.4	41.2	40.9
Apparel and other textile products	37.0	37.0	36.9	37.1	36.9	37.0	36.8	37.0	37.1	36.9	37.6	37.1	37.1	37.0	36.9
Paper and allied products	43.4	43.2	43.2	43.2	43.2	43.1	43.2	43.1	43.2	43.3	43.4	43.3	43.3	43.1	43.3
Printing and publishing	38.0	38.0	38.0	38.1	38.0	37.9	37.8	38.0	38.0	37.9	37.9	37.7	37.8	37.6	37.8
Chemicals and allied products	42.3	42.3	42.2	42.3	42.5	42.3	42.3	42.3	42.3	42.6	42.1	42.5	42.5	42.4	42.4
Rubber and miscellaneous plastics products	41.6	41.7	41.6	41.7	41.6	41.7	41.4	41.7	41.7	41.6	41.6	41.5	41.5	41.4	41.3
Leather and leather products	38.2	37.5	37.5	37.5	37.8	37.3	37.7	38.0	38.6	38.0	38.3	37.4	37.9	37.7	38.2
TRANSPORTATION AND PUBLIC UTILITIES	39.2	39.3	39.3	39.4	39.4	39.3	39.4	39.6	39.4	39.4	40.1	39.5	39.4	39.4	39.4
WHOLESALE TRADE	37.5	37.4	37.9	38.1	38.1	38.0	38.1	38.1	38.1	38.1	38.3	37.9	38.0	38.1	38.0
RETAIL TRADE	29.2	29.1	29.0	29.1	29.2	29.0	29.1	29.1	28.9	28.9	29.1	28.9	28.9	29.2	28.9
SERVICES	32.5	32.6	32.5	32.6	32.7	32.5	32.7	32.7	32.5	32.6	32.8	32.5	32.5	32.8	32.6

[p] = preliminary
NOTE: See "Notes on the data" for a description of the most recent benchmark adjustment.

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

Industry	Annual average		1988					1989							
	1987	1988	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July[p]	Aug.[p]
PRIVATE SECTOR (in current dollars)[1]	$8.98	$9.29	$9.32	$9.37	$9.43	$9.42	$9.45	$9.49	$9.52	$9.54	$9.61	$9.60	$9.62	$9.70	$9.69
Construction	12.71	13.01	13.03	13.07	13.08	13.10	13.15	13.18	13.22	13.26	13.33	13.32	13.32	13.42	13.35
Manufacturing	9.91	10.18	10.21	10.25	10.29	10.30	10.31	10.33	10.37	10.40	10.40	10.42	10.45	10.49	10.53
Excluding overtime	9.48	9.72	9.75	9.78	9.80	9.83	9.85	9.87	9.89	9.92	9.92	9.97	9.99	10.01	10.05
Transportation and public utilities	12.03	12.32	12.37	12.37	12.41	12.39	12.36	12.45	12.48	12.50	12.52	12.54	12.54	12.60	12.53
Wholesale trade	9.60	9.94	9.95	10.03	10.14	10.06	10.11	10.19	10.18	10.21	10.36	10.28	10.33	10.44	10.39
Retail trade	6.12	6.31	6.33	6.36	6.38	6.40	6.43	6.44	6.45	6.47	6.51	6.49	6.52	6.54	6.56
Finance, insurance, and real estate	8.73	9.09	9.09	9.18	9.35	9.26	9.35	9.40	9.35	9.36	9.54	9.45	9.53	9.67	9.57
Services	8.49	8.91	8.95	9.00	9.07	9.05	9.10	9.15	9.19	9.24	9.32	9.33	9.34	9.46	9.43
PRIVATE SECTOR (in constant (1977) dollars)[1]	4.86	4.84	4.82	4.83	4.84	4.82	4.82	4.81	4.81	4.80	4.80	4.77	4.77	4.80	–

[1] Includes mining, not shown separately
– Data not available.
[p] = preliminary

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

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

Industry	Annual average		1988					1989							
	1987	1988	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July[p]	Aug.[p]
PRIVATE SECTOR	$8.98	$9.29	$9.24	$9.40	$9.45	$9.46	$9.46	$9.54	$9.55	$9.56	$9.62	$9.59	$9.58	$9.63	$9.60
MINING	12.54	12.75	12.69	12.82	12.79	12.89	13.03	13.20	13.22	13.15	13.19	13.13	13.03	12.97	13.11
CONSTRUCTION	12.71	13.01	12.99	13.16	13.17	13.08	13.19	13.26	13.21	13.26	13.30	13.28	13.24	13.33	13.31
MANUFACTURING	9.91	10.18	10.13	10.25	10.25	10.31	10.37	10.37	10.38	10.41	10.41	10.42	10.44	10.48	10.45
Durable goods	10.44	10.71	10.65	10.78	10.79	10.85	10.90	10.90	10.91	10.93	10.93	10.94	10.98	11.00	10.99
Lumber and wood products	8.40	8.61	8.58	8.69	8.77	8.69	8.76	8.71	8.69	8.68	8.76	8.79	8.85	8.93	8.98
Furniture and fixtures	7.67	7.94	8.02	8.09	8.06	8.02	8.06	8.10	8.08	8.13	8.12	8.16	8.23	8.25	8.30
Stone, clay, and glass products	10.25	10.47	10.45	10.55	10.57	10.60	10.57	10.59	10.62	10.62	10.71	10.69	10.73	10.74	10.76
Primary metal industries	11.94	12.15	12.10	12.24	12.19	12.22	12.26	12.27	12.27	12.27	12.26	12.25	12.32	12.41	12.32
Blast furnaces and basic steel products	13.77	13.97	13.96	14.07	14.03	14.01	14.07	14.04	14.13	14.13	14.06	14.06	14.18	14.34	14.27
Fabricated metal products	10.00	10.26	10.21	10.34	10.34	10.36	10.44	10.45	10.46	10.47	10.48	10.49	10.51	10.51	10.50
Machinery, except electrical	10.72	11.01	10.97	11.09	11.11	11.22	11.24	11.21	11.23	11.25	11.26	11.29	11.32	11.36	11.33
Electrical and electronic equipment	9.88	10.13	10.15	10.19	10.16	10.24	10.29	10.27	10.26	10.30	10.31	10.33	10.37	10.43	10.45
Transportation equipment	12.94	13.31	13.21	13.44	13.45	13.56	13.59	13.58	13.59	13.65	13.60	13.58	13.65	13.64	13.72
Motor vehicles and equipment	13.53	14.00	13.83	14.10	14.09	14.18	14.23	14.20	14.19	14.28	14.20	14.17	14.22	14.13	14.26
Instruments and related products	9.72	9.98	9.94	9.99	10.08	10.07	10.13	10.12	10.14	10.17	10.17	10.17	10.25	10.29	10.31
Miscellaneous manufacturing	7.76	8.01	7.95	8.01	8.10	8.12	8.20	8.22	8.23	8.23	8.21	8.24	8.24	8.30	8.16
Nondurable goods	9.18	9.43	9.41	9.50	9.49	9.54	9.61	9.62	9.62	9.66	9.65	9.68	9.70	9.76	9.72
Food and kindred products	8.93	9.10	9.02	9.11	9.03	9.15	9.25	9.27	9.26	9.33	9.32	9.34	9.37	9.35	9.26
Tobacco manufactures	14.07	14.68	14.97	14.09	14.01	14.56	14.31	14.39	14.75	15.34	15.87	16.13	16.48	16.31	15.39
Textile mill products	7.17	7.37	7.37	7.43	7.45	7.47	7.52	7.60	7.59	7.59	7.60	7.62	7.65	7.65	7.70
Apparel and other textile products	5.94	6.12	6.09	6.21	6.22	6.25	6.29	6.32	6.32	6.34	6.32	6.32	6.33	6.28	6.35
Paper and allied products	11.43	11.65	11.65	11.72	11.68	11.74	11.81	11.78	11.80	11.84	11.83	11.89	11.91	12.05	11.92
Printing and publishing	10.28	10.52	10.54	10.70	10.68	10.67	10.70	10.73	10.74	10.79	10.73	10.76	10.75	10.82	10.87
Chemicals and allied products	12.37	12.67	12.62	12.75	12.78	12.86	12.90	12.85	12.88	12.91	12.92	12.98	12.98	13.11	13.14
Petroleum and coal products	14.58	14.98	14.84	15.01	15.14	15.18	15.21	15.24	15.45	15.46	15.50	15.34	15.23	15.31	15.18
Rubber and miscellaneous plastics products	8.92	9.14	9.17	9.22	9.23	9.26	9.31	9.32	9.31	9.33	9.35	9.40	9.41	9.45	9.43
Leather and leather products	6.08	6.27	6.22	6.30	6.33	6.41	6.44	6.48	6.49	6.54	6.55	6.58	6.59	6.53	6.57
TRANSPORTATION AND PUBLIC UTILITIES	12.03	12.32	12.35	12.40	12.42	12.46	12.42	12.47	12.50	12.46	12.51	12.49	12.48	12.57	12.52
WHOLESALE TRADE	9.60	9.94	9.91	10.04	10.10	10.07	10.14	10.23	10.23	10.21	10.36	10.28	10.31	10.40	10.35
RETAIL TRADE	6.12	6.31	6.26	6.38	6.39	6.43	6.43	6.48	6.47	6.48	6.52	6.49	6.49	6.49	6.49
FINANCE, INSURANCE, AND REAL ESTATE	8.73	9.09	9.03	9.14	9.29	9.27	9.32	9.46	9.47	9.43	9.59	9.48	9.48	9.58	9.50
SERVICES	8.49	8.91	8.81	9.00	9.09	9.11	9.16	9.25	9.28	9.29	9.34	9.30	9.26	9.33	9.29

[p] = preliminary
NOTE: See "Notes on the data" for a description of the most recent benchmark revision.

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

Industry	Annual average 1987	Annual average 1988	1988 Aug.	1988 Sept.	1988 Oct.	1988 Nov.	1988 Dec.	1989 Jan.	1989 Feb.	1989 Mar.	1989 Apr.	1989 May	1989 June	1989 July[p]	1989 Aug.[p]
PRIVATE SECTOR															
Current dollars	$312.50	$322.36	$323.40	$327.12	$329.81	$328.26	$330.15	$329.13	$327.57	$328.86	$334.78	$330.86	$333.38	$338.01	$336.00
Seasonally adjusted	–	–	322.47	325.14	328.16	326.87	327.92	330.25	329.39	331.04	335.39	332.16	332.85	337.56	335.27
Constant (1977) dollars	169.28	167.81	167.30	168.10	168.96	167.99	168.70	167.41	165.94	165.76	167.39	164.53	165.37	167.08	–
MINING	531.70	539.33	532.98	541.00	544.85	540.09	557.68	557.04	551.27	552.30	564.53	551.46	555.08	555.12	566.35
CONSTRUCTION	480.44	493.08	501.41	505.34	514.95	494.42	491.99	483.99	478.20	495.92	504.07	500.66	503.12	518.54	517.76
MANUFACTURING															
Current dollars	406.31	418.40	414.32	423.33	423.33	427.87	432.43	425.17	423.50	426.81	426.81	426.18	429.08	424.44	426.36
Constant (1977) dollars	220.10	217.80	214.34	217.54	216.87	218.97	220.97	216.26	214.54	215.13	213.41	211.92	212.84	209.81	–
Durable goods	433.26	447.68	439.85	452.76	453.18	457.87	463.25	455.62	452.77	455.78	455.78	454.01	457.87	449.90	452.79
Lumber and wood products	341.04	346.98	345.77	350.21	359.57	347.60	353.90	345.79	338.91	345.46	354.78	352.48	357.54	352.74	361.89
Furniture and fixtures	306.80	312.84	315.19	324.41	323.21	320.00	326.43	319.14	315.93	321.95	319.12	318.24	324.26	318.45	328.68
Stone, clay, and glass products	433.58	442.88	444.13	451.54	454.51	452.62	446.05	439.49	436.48	444.98	456.25	453.26	457.10	457.52	462.68
Primary metal industries	514.61	529.74	521.51	538.56	531.48	536.46	540.67	536.20	532.52	533.75	529.63	527.98	533.46	528.67	518.67
Blast furnaces and basic steel products	597.62	614.68	608.66	628.93	615.92	616.44	621.89	617.76	617.48	621.72	613.02	613.02	622.50	619.49	597.91
Fabricated metal products	416.00	429.89	423.72	435.31	434.28	441.34	445.79	438.90	435.14	436.60	437.02	435.34	438.27	428.81	433.65
Machinery, except electrical	452.38	469.03	460.74	473.54	473.29	480.22	488.94	477.55	477.28	479.25	478.55	477.57	482.23	474.85	471.33
Electrical and electronic equipment	404.09	415.33	412.09	417.79	416.56	423.94	430.12	422.10	416.56	417.15	419.62	417.33	423.10	418.24	424.27
Transportation equipment	543.48	568.34	552.18	577.92	579.70	591.22	591.17	582.58	584.37	591.05	584.80	579.87	581.49	567.42	570.75
Motor vehicles and equipment	570.97	609.00	583.63	621.81	619.96	632.43	633.24	619.12	621.52	631.18	620.54	613.56	611.46	584.98	588.94
Instruments and related products	402.41	414.17	409.53	415.58	420.34	422.94	425.46	420.99	420.81	419.00	420.02	414.94	423.33	418.80	419.62
Miscellaneous manufacturing	305.74	313.99	310.05	314.79	320.76	323.18	325.54	323.05	322.62	324.26	325.12	324.66	324.66	320.38	323.14
Nondurable goods	369.04	378.14	378.28	384.75	382.45	386.37	389.21	383.84	382.88	385.43	386.97	387.20	390.91	390.40	390.74
Food and kindred products	358.99	366.73	368.02	371.69	367.52	374.24	377.40	369.87	366.70	372.27	372.80	377.34	381.36	383.35	381.51
Tobacco manufactures	548.73	584.26	600.30	580.51	578.61	586.77	570.97	546.82	557.55	556.84	604.65	637.14	660.85	616.52	580.20
Textile mill products	299.71	302.91	304.38	307.60	306.94	309.26	308.32	309.32	307.40	311.19	313.12	313.94	318.24	310.59	317.24
Apparel and other textile products	219.78	226.44	225.33	230.39	230.76	233.13	233.99	232.58	233.21	233.95	234.47	233.84	236.74	230.48	234.95
Paper and allied products	496.06	503.28	499.79	512.16	505.74	509.52	519.64	508.90	506.22	509.12	509.87	512.46	514.51	515.74	512.56
Printing and publishing	390.64	399.76	401.57	411.95	406.91	406.53	410.88	404.52	404.90	408.94	405.59	402.42	402.05	404.67	411.97
Chemicals and allied products	523.25	535.94	528.78	539.33	540.59	547.84	553.41	544.84	544.82	546.09	549.10	546.46	551.65	553.24	553.19
Petroleum and coal products	641.52	665.11	661.86	672.45	676.76	670.96	673.80	662.94	679.80	667.87	686.65	673.43	679.26	678.23	675.51
Rubber and miscellaneous plastics products	371.07	381.14	378.72	384.47	384.89	388.92	391.95	390.51	387.30	387.20	388.03	390.10	391.46	385.56	386.63
Leather and leather products	232.26	235.13	234.49	236.25	239.91	239.73	246.65	244.94	245.32	244.60	247.59	247.41	255.03	246.83	252.95
TRANSPORTATION AND PUBLIC UTILITIES	471.58	484.18	490.30	489.80	490.59	489.68	490.59	490.07	488.75	488.43	497.90	490.86	494.21	500.29	498.30
WHOLESALE TRADE	365.76	378.71	376.58	382.52	385.82	382.66	387.35	387.72	386.69	386.96	395.75	389.61	392.81	398.32	394.34
RETAIL TRADE	178.70	183.62	186.55	185.66	185.95	185.18	190.33	184.03	183.10	184.68	188.43	186.91	189.51	194.05	192.75
FINANCE, INSURANCE, AND REAL ESTATE	316.90	326.33	322.37	327.21	334.44	330.94	333.66	341.51	339.03	337.59	348.12	337.49	339.38	347.75	340.10
SERVICES	275.93	290.47	288.97	292.50	297.24	296.08	298.62	301.55	300.67	301.00	306.35	301.32	302.80	308.82	305.64

– Data not available.

p = preliminary

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

18. Diffusion indexes of employment change, seasonally adjusted

(In percent)

Time span and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Private nonagricultural payrolls, 349 industries											
Over 1-month span:												
1987	55.6	59.3	61.0	61.9	58.6	59.7	65.3	60.6	63.0	67.8	64.5	60.7
1988	60.7	63.5	63.0	62.8	61.3	67.2	63.6	58.0	55.4	63.9	68.2	64.6
1989	68.3	60.5	61.0	58.2	55.6	59.7	54.9	58.5	–	–	–	–
Over 3-month span:												
1987	60.7	62.0	66.6	65.2	65.8	65.9	67.8	71.1	71.2	72.3	70.9	65.9
1988	64.8	65.6	69.5	70.2	71.1	71.9	71.2	64.2	65.3	70.1	73.4	74.6
1989	71.6	70.1	64.5	61.9	61.6	60.7	63.2	–	–	–	–	–
Over 6-month span:												
1987	67.3	65.8	64.8	66.8	67.6	69.5	71.3	73.5	73.2	71.5	71.8	72.2
1988	69.9	70.2	71.5	73.9	73.9	69.1	70.2	74.6	73.5	73.9	74.5	75.8
1989	75.1	69.5	68.2	65.3	63.8	–	–	–	–	–	–	–
Over 12-month span:												
1987	66.6	68.2	68.2	71.8	71.9	72.5	72.2	74.1	75.4	72.5	73.8	76.9
1988	76.2	76.1	74.8	74.6	75.8	74.9	78.1	75.5	75.5	74.8	74.9	74.1
1989	73.5	74.2	–	–	–	–	–	–	–	–	–	–
	Manufacturing payrolls, 141 industries											
Over 1-month span:												
1987	44.3	53.9	54.3	55.7	55.3	54.3	62.8	59.9	63.8	59.9	65.6	56.4
1988	58.5	56.0	55.0	59.9	58.5	61.7	59.6	51.1	49.3	62.8	64.9	58.5
1989	62.4	53.5	53.2	49.6	46.8	48.6	48.6	52.1	–	–	–	–
Over 3-month span:												
1987	52.1	51.4	59.6	61.3	58.5	62.8	67.0	71.6	68.4	70.6	67.7	64.5
1988	63.1	61.0	62.4	64.9	67.4	67.0	64.5	58.2	62.1	66.7	71.3	70.9
1989	67.4	63.8	55.7	51.8	49.3	48.9	52.5	–	–	–	–	–
Over 6-month span:												
1987	57.4	56.7	55.3	62.4	64.9	67.0	67.4	70.6	71.3	69.5	69.5	68.1
1988	66.3	66.3	67.7	69.5	66.7	64.2	66.0	70.9	68.8	69.9	71.6	74.1
1989	69.5	58.5	55.7	52.5	52.1	–	–	–	–	–	–	–
Over 12-month span:												
1987	55.3	58.5	58.5	63.5	66.3	67.4	71.6	72.7	71.6	69.1	68.4	72.3
1988	73.8	70.2	70.9	71.6	72.0	69.9	70.9	69.1	71.6	70.2	69.9	67.0
1989	63.5	65.6	–	–	–	–	–	–	–	–	–	–

– Data not available.

NOTE: Figures are the percent of industries with employment increasing plus one-half of the industries with unchanged employment, where 50 percent indicates an equal balance between industries with increasing and decreasing employment. 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	1980	1981	1982	1983	1984	1985	1986	1987	1988
Noninstitutional population	169,349	171,775	173,939	175,891	178,080	179,912	182,293	184,490	186,322
Labor force:									
Total (number)	108,544	110,315	111,872	113,226	115,241	117,167	119,540	121,602	123,378
Percent of population	64.1	64.2	64.3	64.4	64.7	65.1	65.6	65.9	66.2
Employed:									
Total (number)	100,907	102,042	101,194	102,510	106,702	108,856	111,303	114,177	116,677
Percent of population	59.6	59.4	58.2	58.3	59.9	60.5	61.1	61.9	62.6
Resident Armed Forces	1,604	1,645	1,668	1,676	1,697	1,706	1,706	1,737	1,709
Civilian									
Total	99,303	100,397	99,526	100,834	105,005	107,150	109,597	112,440	114,968
Agriculture	3,364	3,368	3,401	3,383	3,321	3,179	3,163	3,208	3,169
Nonagricultural industries	95,938	97,030	96,125	97,450	101,685	103,971	106,434	109,232	111,800
Unemployed:									
Total (number)	7,637	8,273	10,678	10,717	8,539	8,312	8,237	7,425	6,701
Percent of labor force	7.0	7.5	9.5	9.5	7.4	7.1	6.9	6.1	5.4
Not in labor force (number)	60,806	61,460	62,067	62,665	62,839	62,744	62,752	62,888	62,944

20. Annual data: Employment levels by industry

(Numbers in thousands)

Industry	1980	1981	1982	1983	1984	1985	1986	1987	1988
Total employment	90,406	91,156	89,566	90,200	94,496	97,519	99,525	102,200	105,584
Private sector	74,166	75,126	73,729	74,330	78,472	81,125	82,832	85,190	88,212
Goods-producing	25,658	25,497	23,813	23,334	24,727	24,859	24,558	24,708	25,249
Mining	1,027	1,139	1,128	952	966	927	777	717	721
Construction	4,346	4,188	3,905	3,948	4,383	4,673	4,816	4,967	5,125
Manufacturing	20,285	20,170	18,781	18,434	19,378	19,260	18,965	19,024	19,403
Service-producing	64,748	65,659	65,753	66,866	69,769	72,660	74,967	77,492	80,335
Transportation and public utilities	5,146	5,165	5,082	4,954	5,159	5,238	5,255	5,372	5,548
Wholesale trade	5,275	5,358	5,278	5,268	5,555	5,717	5,753	5,844	6,029
Retail trade	15,035	15,189	15,179	15,613	16,545	17,356	17,930	18,483	19,110
Finance, insurance, and real estate	5,160	5,298	5,341	5,468	5,689	5,955	6,283	6,547	6,676
Services	17,890	18,619	19,036	19,694	20,797	22,000	23,053	24,236	25,600
Government	16,241	16,031	15,837	15,869	16,024	16,394	16,693	17,010	17,372
Federal	2,866	2,772	2,739	2,774	2,807	2,875	2,899	2,943	2,971
State	3,610	3,640	3,640	3,662	3,734	3,832	3,893	3,967	4,063
Local	9,765	9,619	9,458	9,434	9,482	9,687	9,901	10,100	10,339

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	1980	1981	1982	1983	1984	1985	1986	1987	1988
Private sector:									
Average weekly hours	35.3	35.2	34.8	35.0	35.2	34.9	34.8	34.8	34.7
Average hourly earnings (in dollars)	6.66	7.25	7.68	8.02	8.32	8.57	8.76	8.98	9.29
Average weekly earnings (in dollars)	235.10	255.20	267.26	280.70	292.86	299.09	304.85	312.50	322.36
Mining:									
Average weekly hours	43.3	43.7	42.7	42.5	43.3	43.4	42.2	42.4	42.3
Average hourly earnings (in dollars)	9.17	10.04	10.77	11.28	11.63	11.98	12.46	12.54	12.75
Average weekly earnings (in dollars)	397.06	438.75	459.88	479.40	503.58	519.93	525.81	531.70	539.33
Construction:									
Average weekly hours	37.0	36.9	36.7	37.1	37.8	37.7	37.4	37.8	37.9
Average hourly earnings (in dollars)	9.94	10.82	11.63	11.94	12.13	12.32	12.48	12.71	13.01
Average weekly earnings (in dollars)	367.78	399.26	426.82	442.97	458.51	464.46	466.75	480.44	493.08
Manufacturing:									
Average weekly hours	39.7	39.8	38.9	40.1	40.7	40.5	40.7	41.0	41.1
Average hourly earnings (in dollars)	7.27	7.99	8.49	8.83	9.19	9.54	9.73	9.91	10.18
Average weekly earnings (in dollars)	288.62	318.00	330.26	354.08	374.03	386.37	396.01	406.31	418.40
Transportation and public utilities:									
Average weekly hours	39.6	39.4	39.0	39.0	39.4	39.5	39.2	39.2	39.3
Average hourly earnings (in dollars)	8.87	9.70	10.32	10.79	11.12	11.40	11.70	12.03	12.32
Average weekly earnings (in dollars)	351.25	382.18	402.48	420.81	438.13	450.30	458.64	471.58	484.18
Wholesale trade:									
Average weekly hours	38.5	38.5	38.3	38.5	38.5	38.4	38.3	38.1	38.1
Average hourly earnings (in dollars)	6.96	7.56	8.09	8.55	8.89	9.16	9.35	9.60	9.94
Average weekly earnings (in dollars)	267.96	291.06	309.85	329.18	342.27	351.74	358.11	365.76	378.71
Retail trade:									
Average weekly hours	30.2	30.1	29.9	29.8	29.8	29.4	29.2	29.2	29.1
Average hourly earnings (in dollars)	4.88	5.25	5.48	5.74	5.85	5.94	6.03	6.12	6.31
Average weekly earnings (in dollars)	147.38	158.03	163.85	171.05	174.33	174.64	176.08	178.70	183.62
Finance, insurance, and real estate:									
Average weekly hours	36.2	36.3	36.2	36.2	36.5	36.4	36.4	36.3	35.9
Average hourly earnings (in dollars)	5.79	6.31	6.78	7.29	7.63	7.94	8.36	8.73	9.09
Average weekly earnings (in dollars)	209.60	229.05	245.44	263.90	278.50	289.02	304.30	316.90	326.33
Services:									
Average weekly hours	32.6	32.6	32.6	32.7	32.6	32.5	32.5	32.5	32.6
Average hourly earnings (in dollars)	5.85	6.41	6.92	7.31	7.59	7.90	8.18	8.49	8.91
Average weekly earnings (in dollars)	190.71	208.97	225.59	239.04	247.43	256.75	265.85	275.93	290.47

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

(June 1981=100)

Series	1987			1988				1989		Percent change	
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	3 months ended	12 months ended
										June 1989	
Civilian workers [2]	135.9	137.5	138.6	140.6	142.1	144.0	145.5	147.3	148.9	1.1	4.8
Workers, by occupational group:											
White-collar workers	139.3	141.2	142.2	144.2	145.7	147.9	149.7	151.9	153.4	1.0	5.3
Blue-collar workers	130.1	131.3	132.5	134.7	136.2	137.2	138.2	139.6	141.3	1.2	3.7
Service occupations	138.5	139.9	140.8	142.9	144.3	147.2	148.5	150.0	151.2	.8	4.8
Workers, by industry division:											
Goods-producing	131.1	132.2	133.5	135.8	137.3	138.2	139.3	140.7	142.3	1.1	3.6
Manufacturing	131.5	132.7	134.1	136.8	138.1	139.0	140.1	141.9	143.5	1.1	3.9
Service-producing	138.9	140.8	141.7	143.6	145.1	147.6	149.2	151.4	152.9	1.0	5.4
Services	145.8	149.2	150.6	152.8	153.8	157.7	159.7	161.8	163.1	.8	6.0
Health services	–	–	–	–	–	–	–	–	–	1.2	6.2
Hospitals	–	–	–	–	–	–	–	–	–	1.3	6.5
Public administration [3]	144.7	146.4	148.1	150.3	151.2	154.0	154.4	156.7	157.9	.8	4.4
Nonmanufacturing	137.8	139.6	140.5	142.3	143.9	146.1	147.7	149.7	151.2	1.0	5.1
Private industry workers	133.8	135.1	136.0	138.1	139.8	141.2	142.6	144.4	146.1	1.2	4.5
Excluding sales occupations	134.1	135.5	136.6	138.7	140.2	141.7	142.9	144.7	146.2	1.0	4.3
Workers, by occupational group:											
White-collar workers	137.0	138.5	139.3	141.2	143.0	144.6	146.3	148.6	150.3	1.1	5.1
Excluding sales occupations	138.2	140.0	141.1	143.0	144.6	146.4	147.6	149.9	151.4	1.0	4.7
Professional specialty and technical occupations	–	–	–	–	–	–	–	–	–	1.0	4.8
Executive, administrative, and managerial occupations	–	–	–	–	–	–	–	–	–	.9	4.4
Sales occupations	–	–	–	–	–	–	–	–	–	1.8	6.9
Administrative support occupations, including clerical	–	–	–	–	–	–	–	–	–	1.1	4.9
Blue-collar workers	129.5	130.6	131.8	134.1	135.6	136.5	137.6	138.9	140.6	1.2	3.7
Precision production, craft, and repair occupation	–	–	–	–	–	–	–	–	–	1.3	3.4
Machine operators, assemblers, and inspectors	–	–	–	–	–	–	–	–	–	1.1	4.3
Transportation and material moving occupations	–	–	–	–	–	–	–	–	–	1.0	3.1
Handlers, equipment cleaners, helpers, and laborers	–	–	–	–	–	–	–	–	–	1.2	4.0
Service occupations	135.2	135.9	136.7	138.6	140.1	142.2	143.9	145.4	146.5	.8	4.6
Workers, by industry division:											
Goods-producing	130.8	131.9	133.2	135.6	137.1	137.9	139.0	140.4	142.0	1.1	3.6
Excluding sales occupations	130.5	131.6	132.9	135.2	136.8	137.6	138.7	140.2	141.7	1.1	3.6
Construction	–	–	–	–	–	–	–	–	–	1.0	3.7
Manufacturing	131.5	132.7	134.1	136.8	138.1	139.0	140.1	141.9	143.5	1.1	3.9
Durables	–	–	–	–	–	–	–	–	–	1.0	3.6
Nondurables	–	–	–	–	–	–	–	–	–	1.2	4.6
Service-producing	136.3	137.7	138.4	140.2	142.1	143.8	145.5	147.7	149.5	1.2	5.2
Excluding sales occupations	137.4	139.1	140.0	141.9	143.5	145.4	146.7	148.8	150.4	1.1	4.8
Transportation and public utilities	–	–	–	–	–	–	–	–	–	1.3	3.3
Transportation	–	–	–	–	–	–	–	–	–	1.3	3.2
Public utilities	–	–	–	–	–	–	–	–	–	1.2	3.4
Communications	–	–	–	–	–	–	–	–	–	1.5	–
Electric, gas, and sanitary services	–	–	–	–	–	–	–	–	–	.8	–
Wholesale and retail trade	–	–	–	–	–	–	–	–	–	1.1	4.4
Excluding sales occupations	–	–	–	–	–	–	–	–	–	.8	3.9
Wholesale trade	–	–	–	–	–	–	–	–	–	1.5	5.6
Excluding sales occupations	–	–	–	–	–	–	–	–	–	1.1	3.9
Retail trade	–	–	–	–	–	–	–	–	–	.9	3.9
Food stores	–	–	–	–	–	–	–	–	–	.2	–
Finance, insurance, and real estate	–	–	–	–	–	–	–	–	–	1.7	7.8
Excluding sales occupations	–	–	–	–	–	–	–	–	–	1.6	5.7
Banking, savings and loan, and other credit agencies	–	–	–	–	–	–	–	–	–	1.2	4.1
Insurance	–	–	–	–	–	–	–	–	–	1.7	–
Service	–	–	–	–	–	–	–	–	–	1.0	5.8
Business services	–	–	–	–	–	–	–	–	–	1.9	5.4
Health services	–	–	–	–	–	–	–	–	–	1.1	6.2
Hospitals	–	–	–	–	–	–	–	–	–	1.2	6.9
Nonmanufacturing	135.1	136.4	137.1	138.9	140.8	142.4	143.9	145.9	147.6	1.2	4.8
State and local government workers	146.3	149.7	151.1	153.1	153.6	157.8	159.6	161.5	162.5	.6	5.8
Workers, by occupational group:											
White-collar workers	147.5	151.2	152.7	154.8	155.2	159.6	161.8	163.7	164.6	.5	6.1
Blue-collar workers	141.3	143.3	144.3	145.9	145.9	148.4	149.1	151.9	153.0	.7	4.9

See footnotes at end of table.

22. Continued—Employment Cost Index, compensation,[1] by occupation and industry group

(June 1981=100)

Series	1987			1988				1989		Percent change	
										3 months ended	12 months ended
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	June 1989	
Workers, by industry division:											
Services	147.6	151.8	153.1	155.2	155.6	160.5	163.0	164.6	165.5	0.5	6.4
Hospitals and other services[4]	143.3	145.1	146.3	150.3	150.4	153.2	155.2	157.2	158.7	1.0	5.5
Health services	–	–	–	–	–	–	–	–	–	1.3	5.9
Schools	149.1	154.1	155.5	156.8	157.3	163.1	165.7	167.2	167.8	.4	6.7
Elementary and secondary	150.7	156.5	157.8	158.9	159.4	165.4	168.3	169.3	169.9	.4	6.6
Public administration[3]	144.7	146.4	148.1	150.3	151.2	154.0	154.4	156.7	157.9	.8	4.4

[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	1987			1988				1989		Percent change	
										3 months ended	12 months ended
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	June 1989	
Civilian workers [1]	133.5	135.2	136.1	137.4	138.7	140.5	141.9	143.4	144.6	0.8	4.3
Workers, by occupational group:											
White-collar workers	137.3	139.4	140.2	141.5	143.0	145.2	146.8	148.6	149.8	.8	4.8
Blue-collar workers	127.1	128.3	129.4	130.4	131.6	132.5	133.4	134.6	136.0	1.0	3.3
Service occupations	134.7	136.0	136.6	138.0	139.3	141.8	142.9	143.9	144.8	.6	3.9
Workers, by industry division:											
Goods-producing	128.5	129.8	131.0	132.2	133.4	134.1	135.1	136.3	137.7	1.0	3.2
Manufacturing	129.5	130.8	132.2	133.3	134.4	135.1	136.2	137.4	138.8	1.0	3.3
Service-producing	136.5	138.5	139.2	140.5	141.9	144.2	145.8	147.5	148.7	.8	4.8
Services	143.4	146.8	148.2	149.5	150.4	154.0	155.7	157.4	158.4	.6	5.3
Health services	–	–	–	–	–	–	–	–	–	1.0	5.9
Hospitals	–	–	–	–	–	–	–	–	–	1.1	6.1
Public administration [2]	141.0	142.6	143.8	145.5	146.4	148.9	149.4	150.9	151.8	.6	3.7
Nonmanufacturing	135.2	137.1	137.8	139.0	140.5	142.7	144.1	145.8	147.0	.8	4.6
Private industry workers	131.7	133.0	133.8	135.1	136.6	137.9	139.3	140.8	142.2	1.0	4.1
Excluding sales occupations	132.1	133.6	134.7	135.9	137.2	138.6	139.7	141.2	142.5	.9	3.9
Workers, by occupational group:											
White-collar workers	135.4	137.0	137.6	139.0	140.8	142.4	144.0	145.9	147.3	1.0	4.6
Excluding sales occupations	137.1	139.1	140.1	141.5	142.9	144.7	146.0	147.8	149.0	.8	4.3
Professional specialty and technical occupations	139.1	141.2	142.6	144.0	145.8	148.1	148.9	151.0	152.1	.7	4.3
Executive, administrative, and managerial occupations	136.4	138.6	139.2	139.9	141.3	142.5	144.4	146.2	147.3	.8	4.2
Sales occupations	127.1	127.0	126.1	127.5	130.8	131.5	134.4	136.7	138.7	1.5	6.0
Administrative support occupations, including clerical	135.5	137.1	138.1	140.2	141.2	143.2	144.1	146.0	147.4	1.0	4.4
Blue-collar workers	126.6	127.7	128.9	129.9	131.1	131.9	132.9	134.0	135.4	1.0	3.3
Precision production, craft, and repair occupations	128.8	130.2	131.1	132.1	133.4	134.0	134.9	136.1	137.8	1.2	3.3
Machine operators, assemblers, and inspectors	126.7	127.5	129.2	129.9	131.2	131.9	133.3	134.5	135.9	1.0	3.6
Transportation and material moving occupations	121.5	122.3	122.9	123.7	125.4	126.7	126.9	127.8	128.7	.7	2.6
Handlers, equipment cleaners, helpers, and laborers	122.6	123.7	125.0	126.7	127.5	128.4	129.3	130.4	131.6	.9	3.2
Service occupations	131.9	132.6	133.2	134.5	135.8	137.6	139.1	140.0	140.9	.6	3.8
Workers, by industry division:											
Goods-producing	128.3	129.6	130.8	132.0	133.2	133.9	134.9	136.1	137.4	1.0	3.2
Excluding sales occupations	128.3	129.5	130.8	131.8	133.2	133.8	134.9	136.1	137.4	1.0	3.2
Construction	122.7	123.8	124.7	125.9	127.6	128.6	129.4	130.4	131.6	.9	3.1

See footnotes at end of table.

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

(June 1981=100)

Series	1987 June	1987 Sept.	1987 Dec.	1988 Mar.	1988 June	1988 Sept.	1988 Dec.	1989 Mar.	1989 June	Percent change 3 months ended June 1989	Percent change 12 months ended June 1989
Manufacturing	129.5	130.8	132.2	133.3	134.4	135.1	136.2	137.4	138.8	1.0	3.3
Durables	128.7	129.7	131.1	132.1	133.1	133.7	134.6	135.9	137.3	1.0	3.2
Nondurables	131.0	132.8	134.1	135.6	136.7	137.6	139.1	140.2	141.6	1.0	3.6
Service-producing	134.3	135.7	136.2	137.5	139.3	141.0	142.6	144.5	145.8	.9	4.7
Excluding sales occupations	135.5	137.3	138.1	139.4	140.8	142.7	143.9	145.7	146.9	.8	4.3
Transportation and public utilities	129.3	130.0	130.2	131.3	132.5	133.5	133.4	134.6	135.3	.5	2.1
Transportation	–	–	–	–	–	–	–	–	–	.6	1.9
Public utilities	–	–	–	–	–	–	–	–	–	.5	2.5
Communications	–	–	–	–	–	–	–	–	–	.1	–
Electric, gas, and sanitary services	129.9	130.6	130.7	131.9	134.6	136.0	136.9	138.6	139.9	.9	3.9
Wholesale and retail trade	130.5	131.7	132.3	133.4	135.2	136.5	137.8	139.2	140.0	.6	3.6
Excluding sales occupations	137.2	137.8	138.5	139.0	141.7	143.2	143.6	147.5	149.0	1.0	5.2
Wholesale trade	133.3	134.9	136.0	136.8	138.2	139.6	140.4	141.8	142.9	.8	3.4
Excluding sales occupations	127.1	127.8	127.7	129.2	131.7	133.2	134.3	135.1	136.3	.9	3.5
Retail trade	–	–	–	–	–	–	–	–	–	1.0	–
Food stores	–	–	–	–	–	–	–	–	–	.0	–
Finance, insurance, and real estate	131.5	131.8	131.6	132.9	134.9	134.9	139.9	142.7	145.2	1.8	7.6
Excluding sales occupations	131.5	131.8	131.6	132.9	134.9	134.9	139.9	142.7	145.2	1.8	7.6
Banking, savings and loan, and other credit agencies	–	–	–	–	–	–	–	–	–	1.2	4.2
Insurance	–	–	–	–	–	–	–	–	–	1.6	–
Services	142.8	145.9	147.1	148.6	149.8	152.9	154.4	156.4	157.8	.9	5.3
Business services	–	–	–	–	–	–	–	–	–	1.6	5.2
Health services	–	–	–	–	–	–	–	–	–	.9	5.9
Hospitals	–	–	–	–	–	–	–	–	–	1.1	6.4
Nonmanufacturing	132.8	134.2	134.8	136.0	137.8	139.4	140.8	142.6	143.9	.9	4.4
State and local government workers	142.8	146.1	147.4	148.7	149.1	153.0	154.5	155.8	156.6	.5	5.0
Workers, by occupational group:											
White-collar workers	144.1	147.7	149.3	150.5	150.8	154.9	156.8	158.0	158.7	.4	5.2
Blue-collar workers	136.9	139.0	139.6	141.1	141.1	143.5	144.1	146.1	146.8	.5	4.0
Workers, by industry division:											
Services	144.2	148.2	149.5	150.7	151.1	155.6	157.6	158.6	159.3	.4	5.4
Hospitals and other services [3]	139.4	141.2	142.2	144.5	144.7	147.4	148.7	150.2	151.5	.9	4.7
Health services	–	–	–	–	–	–	–	–	–	1.1	5.9
Schools	145.6	150.3	151.8	152.6	153.0	158.0	160.3	161.2	161.7	.3	5.7
Elementary and secondary	146.6	152.0	153.4	154.0	154.3	159.7	162.1	162.8	163.3	.3	5.8
Public administration [2]	141.0	142.6	143.8	145.5	146.4	148.9	149.4	150.9	151.8	.6	3.7

[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, benefits, private industry workers by occupation and industry group

(June 1981 = 100)

Series	1987 June	1987 Sept.	1987 Dec.	1988 Mar.	1988 June	1988 Sept.	1988 Dec.	1989 Mar.	1989 June	Percent change 3 months ended June 1989	Percent change 12 months ended June 1989
Private industry workers	139.3	140.3	141.7	146.1	148.2	149.7	151.3	154.0	156.5	1.6	5.6
Workers, by occupational group:											
White-collar workers	141.2	142.4	143.7	147.3	149.3	150.9	152.7	156.1	158.8	1.7	6.4
Blue-collar workers	136.3	137.3	138.7	144.1	146.3	147.5	148.9	150.7	152.9	1.5	4.5
Workers, by industry group:											
Goods-producing	136.5	137.4	138.8	144.1	146.1	147.3	148.6	150.7	152.7	1.3	4.5
Service-producing	141.9	143.1	144.4	148.1	150.1	151.9	153.9	157.2	160.1	1.8	6.7
Manufacturing	136.0	136.9	138.4	144.5	146.4	147.8	149.0	152.3	154.2	1.2	5.3
Nonmanufacturing	141.4	142.6	143.8	147.2	149.3	150.9	152.9	155.2	158.0	1.8	5.8

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

(June 1981=100)

Series	1987			1988				1989		Percent change	
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	3 months ended	12 months ended
										June 1989	
COMPENSATION											
Workers, by bargaining status[1]											
Union	131.2	132.0	133.4	135.6	136.9	137.9	138.6	139.7	141.1	1.0	3.1
Goods-producing	128.7	129.5	131.3	134.1	135.3	136.2	137.2	137.9	139.4	1.1	3.0
Service-producing	135.2	135.9	136.7	138.0	139.4	140.5	140.9	142.6	143.9	.9	3.2
Manufacturing	128.7	129.5	131.5	135.0	136.2	137.0	138.2	139.9	141.3	1.0	3.7
Nonmanufacturing	133.5	134.3	135.1	136.2	137.5	138.6	138.9	139.5	141.0	1.1	2.5
Nonunion	134.6	136.1	136.9	138.9	140.7	142.2	143.9	146.0	147.7	1.2	5.0
Goods-producing	131.8	133.1	134.1	136.2	137.8	138.7	139.9	141.6	143.2	1.1	3.9
Service-producing	136.4	137.9	138.6	140.5	142.5	144.4	146.3	148.6	150.5	1.3	5.6
Manufacturing	133.2	134.6	135.6	137.8	139.2	140.1	141.3	143.1	144.8	1.2	4.0
Nonmanufacturing	135.3	136.8	137.5	139.4	141.5	143.2	145.0	147.3	149.1	1.2	5.4
Workers, by region[1]											
Northeast	138.6	140.3	141.9	143.7	145.9	147.8	150.4	153.5	155.5	1.3	6.6
South	133.2	134.2	135.4	137.1	139.3	140.4	141.3	142.7	144.1	1.0	3.4
Midwest (formerly North Central)	130.2	131.2	131.7	134.4	135.5	136.7	138.0	139.3	140.9	1.1	4.0
West	134.2	135.8	136.3	138.3	139.5	140.6	141.5	143.2	144.9	1.2	3.9
Workers, by area size[1]											
Metropolitan areas	134.4	135.8	136.7	138.9	140.5	142.0	143.6	145.6	147.4	1.2	4.9
Other areas	130.2	131.3	132.0	133.6	135.5	136.2	136.8	137.5	138.3	.6	2.1
WAGES AND SALARIES											
Workers, by bargaining status[1]											
Union	128.3	129.1	130.5	131.0	132.0	132.9	133.4	134.3	135.4	.8	2.6
Goods-producing	125.8	126.5	128.5	128.7	129.7	130.4	131.2	132.0	133.4	1.1	2.9
Service-producing	132.2	132.9	133.6	134.4	135.4	136.7	136.8	137.8	138.4	.4	2.2
Manufacturing	126.2	127.0	129.3	129.6	130.4	131.0	132.1	133.0	134.4	1.1	3.1
Nonmanufacturing	130.1	130.8	131.5	132.1	133.3	134.5	134.6	135.4	136.2	.6	2.2
Nonunion	132.8	134.3	135.0	136.4	138.1	139.5	141.1	142.9	144.4	1.0	4.6
Goods-producing	129.6	131.1	132.1	133.6	135.0	135.7	136.8	138.2	139.5	.9	3.3
Service-producing	134.6	136.2	136.7	138.0	140.0	141.8	143.6	145.6	147.2	1.1	5.1
Manufacturing	131.5	133.0	133.9	135.5	136.7	137.4	138.6	139.9	141.4	1.1	3.4
Nonmanufacturing	133.4	134.9	135.4	136.8	138.8	140.4	142.2	144.1	145.6	1.0	4.9
Workers, by region[1]											
Northeast	136.6	138.3	139.7	140.9	142.9	144.6	147.3	150.1	152.0	1.3	6.4
South	131.1	132.1	133.0	134.0	136.1	137.1	137.8	138.9	140.0	.8	2.9
Midwest (formerly North Central)	128.5	129.6	129.9	131.3	132.1	133.3	134.5	135.6	136.9	1.0	3.6
West	131.1	133.1	133.5	134.9	136.0	137.4	138.1	139.4	140.7	.9	3.5
Workers, by area size[1]											
Metropolitan areas	132.4	133.7	134.6	135.8	137.3	138.7	140.2	141.9	143.4	1.1	4.4
Other areas	127.8	129.1	129.8	130.9	133.0	133.5	133.7	134.6	135.2	.4	1.7

[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.

26. 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							
			1987		1988				1989	
	1987	1988	III	IV	I	II	III	IVp	Ip	IIp
Specified adjustments:										
Total compensation [1] adjustments, [2] settlements covering 5,000 workers or more:										
First year of contract	3.0	3.1	2.5	3.4	1.8	3.1	3.4	3.5	3.2	5.0
Annual rate over life of contract	2.6	2.5	2.1	2.4	1.8	2.4	3.2	2.1	3.4	3.4
Wage adjustments, settlements covering 1,000 workers or more:										
First year of contract	2.2	2.5	2.1	2.4	2.1	2.6	2.7	2.6	3.2	3.9
Annual rate over life of contract	2.1	2.4	2.0	1.8	2.3	2.2	2.8	2.2	3.1	3.3
Effective adjustments:										
Total effective wage adjustment [3]	3.1	2.6	.9	.8	.4	.9	.8	.5	.5	1.0
From settlements reached in period	.7	.7	.2	.3	.1	.3	.2	.1	.1	.3
Deferred from settlements reached in earlier periods	1.8	1.3	.6	.3	.3	.5	.4	.2	.3	.5
From cost-of-living-adjustments clauses	.5	.6	.1	.2	.1	.1	.2	.2	.1	.2

[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.
p = preliminary.

27. 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--							
	1987		1988				1989	
	III	IV	I	II	III	IVp	Ip	IIp
Specified total compensation adjustments, settlements covering 5,000 workers or more, all industries:								
First year of contract	2.7	3.0	3.1	3.0	3.1	3.1	3.3	3.8
Annual rate over life of contract	2.6	2.6	2.5	2.3	2.5	2.5	2.6	3.0
Specified wage adjustments, settlements covering 1,000 workers or more:								
All industries:								
First year of contract	2.0	2.2	2.4	2.4	2.5	2.5	2.7	3.2
Contracts with COLA clauses	2.1	2.3	2.2	2.4	2.4	2.4	2.4	2.2
Contracts without COLA clauses	2.0	2.1	2.5	2.4	2.6	2.7	2.9	3.4
Annual rate over life of contract	2.2	2.1	2.2	2.0	2.2	2.4	2.5	2.9
Contracts with COLA clauses	1.7	1.5	1.4	1.5	1.5	1.8	1.8	1.8
Contracts without COLA clauses	2.5	2.5	2.7	2.5	2.8	2.8	2.9	3.2
Manufacturing:								
First year of contract	1.1	2.1	2.4	2.5	2.6	2.2	2.2	2.6
Contracts with COLA clauses	2.1	2.4	2.4	2.5	2.4	2.1	2.1	2.0
Contracts without COLA clauses	-.1	1.3	2.4	2.5	3.0	2.5	2.5	3.1
Annual rate over life of contract	1.0	1.3	1.5	1.6	1.9	2.1	2.1	2.4
Contracts with COLA clauses	1.0	1.0	1.0	1.3	1.4	1.8	1.8	1.7
Contracts without COLA clauses	1.2	2.1	2.7	2.5	3.1	2.6	2.8	3.1
Nonmanufacturing:								
First year of contract	2.4	2.3	2.3	2.3	2.4	2.8	3.0	3.5
Contracts with COLA clauses	2.1	1.9	1.6	2.2	2.4	2.9	2.9	2.9
Contracts without COLA clauses	2.6	2.4	2.5	2.4	2.5	2.7	3.0	3.5
Annual rate over life of contract	2.8	2.7	2.7	2.4	2.4	2.5	2.7	3.2
Contracts with COLA clauses	2.4	2.7	2.4	1.9	1.8	1.7	1.7	2.3
Contracts without COLA clauses	2.9	2.7	2.7	2.6	2.7	2.8	3.0	3.3
Construction:								
First year of contract	3.0	2.9	2.9	2.6	2.1	2.2	2.4	2.4
Contracts with COLA clauses	(¹)	(¹)	(¹)	(²)	(²)	(²)	(²)	(²)
Contracts without COLA clauses	(¹)	(¹)	(¹)	2.6	2.1	2.2	2.4	2.4
Annual rate over life of contract	3.2	3.1	3.1	2.7	2.4	2.6	2.7	2.9
Contracts with COLA clauses	(¹)	(¹)	(¹)	(²)	(²)	(²)	(²)	(²)
Contracts without COLA clauses	(¹)	(¹)	(¹)	2.7	2.4	2.6	2.7	2.9

[1] Data do not meet publication standards.
[2] Between -0.05 and 0.05 percent.
p = preliminary.

28. 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--						
	1987	1988				1989	
	IV	I	II	III	IVp	Ip	IIp
For all workers:[1]							
Total	3.1	3.2	3.0	2.9	2.6	2.7	2.8
From settlements reached in period	.7	.8	1.0	1.0	.7	.7	.7
Deferred from settlements reached in earlier period	1.8	1.8	1.6	1.4	1.3	1.3	1.3
From cost-of-living-adjustments clauses	.5	.5	.5	.5	.6	.6	.8
For workers receiving changes:							
Total	3.6	3.8	3.7	3.5	3.3	3.5	3.7
From settlements reached in period	2.9	2.9	2.9	2.9	3.1	3.2	3.5
Deferred from settlements reached in earlier period	3.3	3.3	3.3	3.0	3.0	3.2	3.2
From cost-of-living-adjustments clauses	2.6	2.7	2.3	2.5	2.7	2.9	3.2

[1] Because of rounding, total may not equal sum of parts.   p = preliminary.

29. 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		
	1987	1988	First 6 months 1989
Specified adjustments:			
Total compensation [1] adjustments, [2] settlements covering 5,000 workers or more:			
First year of contract	4.9	5.4	4.3
Annual rate over life of contract	4.8	5.3	4.4
Wage adjustments, settlements covering 1,000 workers or more:			
First year of contract	4.9	5.1	4.7
Annual rate over life of contract	5.1	5.3	4.7
Effective adjustments:			
Total effective wage adjustment [3]	4.9	4.7	1.6
From settlements reached in period	2.7	2.3	.5
Deferred from settlements reached in earlier periods	2.2	2.4	1.1
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.
– Data not available.

30. Work stoppages involving 1,000 workers or more

Measure	Annual totals		1988					1989p							
	1987	1988	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Number of stoppages:															
Beginning in period	46	40	7	2	3	1	0	3	0	2	4	7	0	4	7
In effect during period	51	43	18	14	9	5	1	4	2	4	8	13	5	9	11
Workers involved:															
Beginning in period (in thousands)	174.3	118.3	11.7	4.0	8.6	2.3	.0	7.4	.0	30.3	6.6	54.7	.0	43.3	235.6
In effect during period (in thousands)	377.7	121.4	46.9	34.0	25.9	10.6	2.5	9.9	7.7	37.0	43.6	94.3	44.7	100.0	204.0
Days idle:															
Number (in thousands)	4,468.8	4,364.3	713.1	510.0	293.2	77.9	52.5	152.7	137.8	949.6	1,064.2	1,227.1	938.2	1,370.7	3,480.2
Percent of estimated working time[1]	.02	.02	.03	.02	.01	.04	.02	.01	.01	.04	.05	.05	.04	.04	.1

[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.

31. 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	1988 Aug.	Sept.	Oct.	Nov.	Dec.	1989 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
CONSUMER PRICE INDEX FOR ALL URBAN CONSUMERS:															
All items	113.6	118.3	119.0	119.8	120.2	120.3	120.5	121.1	121.6	122.3	123.1	123.8	124.1	124.4	124.6
All items (1967=100)	340.4	354.3	356.6	358.9	360.1	360.5	360.9	362.7	364.1	366.2	368.8	370.8	371.7	372.7	373.1
Food and beverages	113.5	118.2	119.4	120.1	120.3	120.2	120.6	122.0	122.7	123.3	124.0	124.7	124.9	125.4	125.6
Food	113.5	118.2	119.4	120.2	120.3	120.2	120.7	122.2	122.9	123.5	124.2	124.9	125.0	125.5	125.8
Food at home	111.9	116.6	118.1	119.0	119.0	118.7	119.1	121.2	122.0	122.7	123.5	124.4	124.3	124.8	124.9
Cereals and bakery products	114.8	122.1	124.0	124.7	125.6	125.9	126.6	127.9	128.9	129.7	130.4	131.5	132.1	133.3	134.1
Meats, poultry, fish, and eggs	110.5	114.3	117.3	117.4	116.8	116.4	116.1	118.5	118.2	120.5	120.6	120.7	121.4	121.6	122.3
Dairy products	105.9	108.4	108.2	108.9	109.9	110.6	111.4	112.6	113.4	113.8	114.1	113.8	113.6	114.1	114.5
Fruits and vegetables	119.1	128.1	129.9	133.2	131.7	129.5	131.0	134.8	137.1	135.7	138.0	142.7	140.2	140.1	138.8
Other foods at home	110.5	113.1	113.6	114.0	114.8	114.9	115.3	116.6	117.8	118.1	119.0	118.9	119.2	119.7	119.7
Sugar and sweets	111.0	114.0	114.8	115.6	116.0	115.9	116.7	117.2	117.8	118.0	117.9	118.1	119.2	120.1	120.6
Fats and oils	108.1	113.1	114.9	115.9	117.1	117.1	118.5	119.6	120.5	120.4	121.6	121.6	121.6	121.6	121.7
Nonalcoholic beverages	107.5	107.5	107.0	107.4	108.1	108.2	107.8	109.6	111.3	111.3	111.8	111.5	111.6	112.3	111.2
Other prepared foods	113.8	118.0	118.7	119.1	119.9	120.1	120.7	121.9	123.0	123.7	125.2	125.2	125.5	125.9	126.7
Food away from home	117.0	121.8	122.5	123.0	123.4	123.7	124.1	124.7	125.2	125.7	126.2	126.7	127.1	127.8	128.1
Alcoholic beverages	114.1	118.6	119.3	119.6	119.8	119.9	119.9	120.3	121.1	121.8	122.3	123.1	123.5	124.0	124.5
Housing	114.2	118.5	119.5	119.9	119.9	119.9	120.2	120.7	121.1	121.5	121.6	122.1	122.9	123.9	124.2
Shelter	121.3	127.1	128.2	128.4	128.8	129.1	129.3	129.8	130.3	131.2	131.2	131.8	132.3	133.6	134.1
Renters' costs (12/82=100)	128.1	133.6	135.6	134.7	134.8	134.2	134.1	135.2	136.3	138.6	137.9	137.8	138.7	141.5	141.5
Rent, residential	123.1	127.8	128.4	129.1	129.4	129.8	130.1	130.5	130.9	131.1	131.4	131.7	132.3	133.0	133.5
Other renters' costs	127.4	134.8	141.3	135.5	134.8	131.1	130.0	132.7	136.2	144.7	140.7	139.7	141.5	150.5	148.8
Homeowners' costs (12/82=100)	124.8	131.1	131.8	132.6	133.1	133.8	134.0	134.4	134.7	135.0	135.4	136.2	136.5	137.3	138.1
Owners' equivalent rent (12/82=100)	124.8	131.1	131.9	132.7	133.1	133.9	134.1	134.5	134.8	135.1	135.5	136.3	136.6	137.4	138.2
Household insurance (12/82=100)	124.0	129.0	130.1	130.2	130.4	130.2	130.6	130.9	131.2	131.3	131.4	132.1	132.8	133.1	133.3
Maintenance and repairs	111.8	114.7	115.0	115.3	115.0	115.4	115.8	116.1	117.1	117.1	117.3	117.4	118.3	118.4	118.5
Maintenance and repair services	114.8	117.9	118.1	118.1	117.6	118.2	118.4	118.7	119.9	119.6	119.8	120.2	121.0	121.1	121.3
Maintenance and repair commodities	107.8	110.4	110.8	111.7	111.6	111.7	112.4	112.8	113.4	113.8	114.1	113.8	114.7	115.0	114.8
Fuel and other utilities	103.0	104.4	106.1	106.4	105.4	104.3	105.0	106.0	105.9	105.9	106.2	107.0	109.2	109.7	109.7
Fuels	97.3	98.0	100.9	101.0	98.6	96.8	97.4	98.7	98.6	98.5	98.8	99.6	103.2	103.7	103.7
Fuel oil, coal, and bottled gas	77.9	78.1	76.3	75.9	74.6	75.0	76.8	80.5	81.4	81.5	82.5	81.5	80.2	79.7	78.9
Gas (piped) and electricity	103.8	104.6	108.3	108.5	105.8	103.7	104.1	105.1	104.9	104.8	105.0	106.1	110.5	111.1	111.3
Other utilities and public services	120.1	122.9	122.6	123.3	124.5	124.4	125.5	125.9	126.0	125.9	126.2	127.0	127.1	127.7	127.8
Household furnishings and operations	107.1	109.4	109.7	110.1	110.3	110.6	110.6	110.9	110.9	110.5	110.7	110.8	111.1	111.4	111.4
Housefurnishings	103.6	105.1	105.3	105.7	105.9	106.1	105.9	106.0	105.9	105.1	105.0	104.7	105.1	105.5	105.2
Housekeeping supplies	111.5	114.7	114.8	115.5	115.6	116.5	117.0	117.5	117.7	118.5	119.6	120.9	121.2	121.7	122.3
Housekeeping services	110.6	114.3	115.1	115.5	115.5	115.7	115.9	116.6	116.8	116.9	117.1	117.3	117.4	117.3	117.5
Apparel and upkeep	110.6	115.4	112.6	117.8	120.7	119.9	118.0	115.3	115.3	119.3	120.9	120.4	117.8	115.0	115.0
Apparel commodities	108.9	113.7	110.7	116.2	119.3	118.4	116.3	113.3	113.3	117.5	119.3	118.6	115.8	112.9	112.8
Men's and boys' apparel	109.1	113.4	111.6	115.2	117.6	118.2	117.3	115.1	114.2	115.9	117.2	117.8	115.9	114.7	114.7
Women's and girls' apparel	110.4	114.9	109.9	118.1	121.9	120.2	116.5	111.6	111.4	119.4	121.5	119.5	114.8	109.6	109.5
Infants' and toddlers' apparel	112.1	116.4	118.2	119.0	118.1	117.2	117.3	115.6	118.8	118.5	123.6	125.4	123.9	117.9	116.7
Footwear	105.1	109.9	107.4	112.2	115.9	114.5	113.5	112.2	112.7	114.1	115.3	114.9	114.0	113.4	112.6
Other apparel commodities	108.0	116.0	116.2	117.4	119.4	119.5	119.1	119.2	120.4	120.4	121.5	121.7	121.6	122.5	124.1
Apparel services	119.6	123.7	124.0	124.4	125.5	126.3	126.7	127.3	127.8	128.5	128.9	129.9	130.0	129.4	129.5
Transportation	105.4	108.7	109.6	109.7	110.0	110.7	110.8	111.1	111.6	111.9	114.6	116.0	115.9	115.4	114.3
Private transportation	104.2	107.6	108.6	108.6	109.0	109.6	109.6	109.8	110.3	110.7	113.6	115.0	114.9	114.3	113.1
New vehicles	114.4	116.5	115.9	116.2	117.2	118.4	119.0	119.4	119.5	119.4	119.2	119.2	118.9	118.5	117.7
New cars	114.6	116.9	116.3	116.8	117.7	118.7	119.1	119.5	119.6	119.6	119.4	119.5	119.1	118.6	117.7
Used cars	113.1	118.0	119.2	119.4	119.9	119.7	120.2	120.5	120.5	120.5	120.7	121.0	121.3	121.1	120.3
Motor fuel	80.2	80.9	84.1	83.1	81.6	81.5	80.3	79.6	80.3	81.5	92.1	96.6	96.0	94.4	91.0
Gaxine	80.1	80.8	84.2	83.1	81.6	81.4	80.3	79.4	80.1	81.3	92.1	96.7	96.2	94.6	91.1
Maintenance and repair	114.8	119.7	120.3	120.9	121.1	121.5	121.5	122.4	123.3	123.5	123.8	124.3	124.5	124.8	125.4
Other private transportation	120.8	127.9	128.7	129.3	131.0	132.1	132.5	133.5	134.3	134.5	34.7	135.6	135.9	135.6	135.7
Other private transportation commodities	96.9	98.9	99.2	99.7	99.3	99.4	100.3	101.0	101.2	100.1	100.8	101.5	101.9	101.3	102.0
Other private transportation services	125.6	133.9	134.8	135.5	137.7	139.1	139.3	140.4	141.4	141.9	142.0	142.9	143.2	143.0	142.9
Public transportation	121.1	123.3	123.7	124.0	124.2	125.3	126.5	127.5	128.1	128.2	128.4	128.9	129.6	129.7	130.1
Medical care	130.1	138.6	139.9	140.4	141.2	141.8	142.3	143.8	145.2	146.1	146.8	147.5	148.5	149.7	150.7
Medical care commodities	131.0	139.9	141.1	142.0	143.2	143.3	144.2	145.0	145.8	147.2	148.4	150.0	151.0	151.4	152.1
Medical care services	130.0	138.3	139.6	140.1	140.8	141.5	141.9	143.5	145.1	145.9	146.4	146.9	147.9	149.3	150.4
Professional services	128.8	137.5	138.7	139.2	139.8	140.4	140.8	142.2	143.5	144.4	144.9	145.2	146.1	147.0	147.5
Hospital and related services	131.6	143.9	145.9	146.9	148.5	149.7	150.8	152.9	155.1	155.8	156.6	157.3	158.5	160.8	162.7
Entertainment	115.3	120.3	120.7	121.3	121.8	122.2	122.8	123.8	124.3	124.7	125.4	125.5	126.2	126.9	127.3
Entertainment commodities	110.5	115.0	115.4	116.0	116.3	117.2	117.5	118.1	118.4	118.5	119.0	119.3	119.5	119.9	120.0
Entertainment services	122.0	127.7	128.1	128.6	129.4	129.3	130.0	131.6	132.3	132.9	134.0	133.9	135.0	136.1	136.7
Other goods and services	128.5	137.0	137.5	140.0	140.6	141.0	141.3	143.4	144.1	144.4	144.7	145.4	146.3	147.3	148.7
Tobacco products	133.6	145.8	148.6	148.9	149.3	149.7	149.9	157.0	158.5	159.2	159.5	161.1	164.2	167.5	168.8
Personal care	115.1	119.4	119.0	120.3	121.0	121.8	122.4	122.8	123.2	123.6	124.1	124.8	124.5	124.8	125.6
Toilet goods and personal care appliances	113.9	118.1	117.2	118.7	119.8	120.7	121.6	121.7	121.9	122.4	122.6	122.7	122.2	122.8	123.8
Personal care services	116.2	120.7	121.0	121.9	122.0	122.7	123.1	123.8	124.4	124.8	125.4	126.8	127.0	126.9	127.3
Personal and educational expenses	138.5	147.9	147.8	151.8	152.4	152.7	153.0	154.0	154.4	154.6	154.9	155.2	155.8	156.3	158.1
School books and supplies	138.1	148.1	146.9	151.1	152.0	152.1	152.2	153.3	155.0	155.1	155.2	155.2	155.6	155.8	156.6
Personal and educational services	138.7	148.0	148.1	152.1	152.7	152.9	153.2	154.2	154.6	154.7	155.1	155.4	156.0	156.5	158.4

31. 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	Annual average 1988	1988 Aug.	Sept.	Oct.	Nov.	Dec.	1989 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
All items	113.6	118.3	119.0	119.8	120.2	120.3	120.5	121.1	121.6	122.3	123.1	123.8	124.1	124.4	124.6
Commodities	107.7	111.5	111.9	113.0	113.5	113.5	113.5	113.9	114.3	115.2	116.7	117.5	117.2	117.0	116.7
Food and beverages	113.5	118.2	119.4	120.1	120.3	120.2	120.6	122.0	122.7	123.3	124.0	124.7	124.9	125.4	125.6
Commodities less food and beverages	104.0	107.3	107.3	108.5	109.2	109.4	109.0	108.9	109.1	110.1	112.2	112.9	112.4	111.7	111.1
Nondurables less food and beverages	101.1	105.2	105.2	107.1	107.8	107.7	106.9	106.4	106.9	108.9	112.5	113.6	112.7	111.6	110.9
Apparel commodities	108.9	113.7	110.7	116.2	119.3	118.4	116.3	113.3	113.3	117.5	119.3	118.6	115.8	112.9	112.8
Nondurables less food, beverages, and apparel	99.5	103.2	104.8	104.9	104.5	104.6	104.5	105.3	106.1	106.9	111.5	113.6	113.7	113.6	112.5
Durables	108.2	110.4	110.3	110.6	111.1	111.8	112.2	112.5	112.4	111.9	111.8	111.9	112.1	111.9	111.4
Services	120.2	125.7	126.7	127.3	127.6	127.8	128.1	128.9	129.4	130.0	130.2	130.8	131.6	132.5	133.1
Rent of shelter (12/82=100)	125.9	132.0	133.1	133.4	133.8	134.1	134.3	134.8	135.4	136.3	136.3	136.9	137.4	138.8	139.3
Household services less rent of' shelter (12/82=100)	113.1	115.3	117.0	117.4	116.6	115.6	116.2	117.0	116.9	116.9	117.2	118.0	120.1	120.6	120.7
Transportation services	121.9	128.0	128.8	129.3	130.6	131.6	132.1	133.0	133.9	134.3	134.5	135.2	135.6	135.5	135.7
Medical care services	130.0	138.3	139.6	140.1	140.8	141.5	141.9	143.5	145.1	145.9	146.4	146.9	147.9	149.3	150.4
Other services	125.7	132.6	132.8	134.9	135.5	135.7	136.2	137.3	137.8	138.2	138.8	139.2	139.8	140.4	141.5
Special indexes:															
All items less food	113.6	118.3	118.9	119.7	120.2	120.3	120.4	120.8	121.3	122.0	122.9	123.5	123.9	124.2	124.3
All items less shelter	111.6	115.9	116.5	117.5	117.9	118.0	118.1	118.7	119.2	119.9	121.0	121.7	122.0	122.0	122.0
All items less homeowners' costs (12/82=100)	115.1	119.5	120.3	121.1	121.5	121.5	121.6	122.3	122.9	123.7	124.7	125.3	125.6	125.9	125.9
All items less medical care	112.6	117.0	117.8	118.6	118.9	119.0	119.1	119.7	120.1	120.8	121.7	122.3	122.6	122.9	123.0
Commodities less food	104.3	107.7	107.7	108.9	109.5	109.7	109.4	109.2	109.5	110.5	112.5	113.2	112.8	112.1	111.6
Nondurables less food	101.8	105.8	105.9	107.7	108.3	108.2	107.5	107.1	107.6	109.4	112.8	113.9	113.1	112.2	111.5
Nondurables less food and apparel	100.3	104.0	105.5	105.6	105.2	105.4	105.3	106.0	106.8	107.6	111.7	113.6	113.8	113.7	112.8
Nondurables	107.5	111.8	112.4	113.7	114.2	114.1	113.9	114.3	114.9	116.2	118.4	119.3	119.0	118.7	118.4
Services less rent of' shelter (12/82=100)	123.1	128.3	129.4	130.3	130.5	130.6	131.1	132.1	132.7	133.0	133.4	134.0	135.2	135.8	136.3
Services less medical care	119.1	124.3	125.3	125.9	126.2	126.3	126.6	127.3	127.8	128.3	128.5	129.1	129.9	130.8	131.3
Energy	88.6	89.3	92.3	91.9	89.9	88.9	88.7	89.0	89.3	89.8	94.9	97.4	99.0	98.5	97.0
All items less energy	117.2	122.3	122.8	123.8	124.4	124.7	124.8	125.5	126.0	126.7	127.1	127.6	127.7	128.2	128.5
All items less food and energy	118.2	123.4	123.8	124.7	125.5	125.8	126.0	126.4	126.9	127.6	128.0	128.3	128.5	129.0	129.3
Commodities less food and energy	111.8	115.8	115.2	116.9	118.0	118.2	118.0	117.9	118.1	119.0	119.6	119.7	119.3	118.8	118.8
Energy commodities	80.2	80.8	83.4	82.5	81.0	80.9	80.1	79.9	80.6	81.7	91.2	95.0	94.4	92.9	89.8
Services less energy	122.0	127.9	128.8	129.3	129.9	130.3	130.6	131.4	132.0	132.7	132.9	133.4	133.9	134.8	135.4
Purchasing power of the consumer dollar:															
1982-84 = $1.00	88.0	84.6	84.0	83.5	83.2	83.1	83.0	82.6	82.3	81.8	81.2	80.8	80.6	80.4	80.3
1967 = $1.00	29.4	28.2	28.0	27.9	27.8	27.7	27.7	27.6	27.5	27.3	27.1	27.0	26.9	26.8	26.8
CONSUMER PRICE INDEX FOR URBAN WAGE EARNERS AND CLERICAL WORKERS:															
All items	112.5	117.0	117.7	118.5	118.9	119.0	119.2	119.7	120.2	120.8	121.8	122.5	122.8	123.2	123.2
All items (1967=100)	335.0	348.4	350.7	353.0	354.2	354.6	355.0	356.7	358.0	360.0	362.9	364.9	365.9	366.8	367.0
Food and beverages	113.3	117.9	119.1	119.8	120.0	119.9	120.3	121.7	122.4	123.1	123.7	124.4	124.6	125.1	125.3
Food	113.3	117.9	119.2	119.9	120.1	119.9	120.4	121.9	122.6	123.3	123.9	124.6	124.8	125.3	125.5
Food at home	111.7	116.2	117.8	118.7	118.7	118.4	118.8	120.8	121.7	122.4	123.2	124.0	123.9	124.4	124.6
Cereals and bakery products	114.8	122.2	124.1	124.8	125.7	126.0	126.7	128.0	129.0	129.7	130.5	131.5	132.0	133.3	134.1
Meats, poultry, fish, and eggs	110.4	114.1	117.1	117.3	116.6	116.1	115.8	118.3	118.0	120.3	120.4	120.5	121.2	121.5	122.1
Dairy products	105.7	108.1	107.9	108.6	109.7	110.4	111.2	112.4	113.3	113.6	114.0	113.6	113.3	113.8	114.2
Fruits and vegetables	118.8	127.6	129.6	132.8	131.4	129.1	130.8	134.3	136.8	135.4	137.7	142.5	140.0	139.9	138.6
Other foods at home	110.4	113.0	113.5	113.9	114.7	114.8	115.1	116.5	117.7	118.0	118.9	118.8	119.0	119.6	119.6
Sugar and sweets	110.9	113.9	114.8	115.6	115.9	115.7	116.7	117.3	117.8	118.0	118.1	118.4	119.2	120.1	120.6
Fats and oils	107.9	113.0	114.8	115.8	117.0	117.0	118.3	119.5	120.4	120.3	121.5	121.5	121.5	121.5	121.6
Nonalcoholic beverages	107.5	107.7	107.2	107.6	108.3	108.4	107.8	109.8	111.4	111.4	111.9	111.5	111.6	112.2	111.1
Other prepared foods	113.6	117.8	118.5	118.8	119.7	119.9	120.5	121.7	122.8	123.6	125.0	125.0	125.3	125.7	126.5
Food away from home	116.9	121.6	122.3	122.8	123.2	123.5	124.0	124.6	125.1	125.5	126.1	126.5	127.0	127.6	128.0
Alcoholic beverages	113.9	118.3	118.9	119.2	119.5	119.5	119.5	119.8	120.8	121.4	122.0	122.8	123.2	123.6	124.0
Housing	112.8	116.8	117.8	118.2	118.2	118.3	118.5	119.0	119.3	119.6	119.8	120.3	121.1	122.1	122.4
Shelter	118.8	124.3	125.3	125.6	126.0	126.4	126.5	126.9	127.4	128.1	128.3	128.8	129.3	130.5	131.0
Renters' costs (12/84=100)	114.6	119.2	120.7	120.2	120.4	120.1	120.0	120.7	121.5	123.0	122.7	122.8	123.6	125.7	125.9
Rent, residential	122.9	127.5	128.0	128.7	129.0	129.4	129.7	130.1	130.4	130.7	131.0	131.2	131.8	132.5	133.0
Other renters' costs	128.2	135.2	143.0	136.1	135.1	131.4	129.2	131.8	135.2	144.2	140.9	139.9	142.3	153.7	152.0
Homeowners' costs (12/84=100)	113.8	119.5	120.2	120.9	121.3	122.0	122.2	122.5	122.8	123.0	123.4	124.1	124.4	125.2	125.8
Owners' equivalent rent (12/84=100)	113.7	119.5	120.2	120.9	121.4	122.1	122.2	122.5	122.8	123.1	123.5	124.2	124.5	125.2	125.9
Household insurance (12/84=100)	114.1	118.2	119.0	119.1	119.3	119.2	119.6	119.9	120.0	120.1	120.2	120.9	121.5	121.8	122.0
Maintenance and repairs	111.3	114.0	114.2	114.4	114.1	114.6	115.2	115.6	116.7	116.7	116.7	116.9	117.9	118.2	117.9
Maintenance and repair services	114.7	117.7	118.0	117.7	117.0	117.6	117.8	118.3	119.5	119.2	119.3	119.8	121.0	121.2	121.3
Maintenance and repair commodities	106.0	108.3	108.3	109.1	109.2	109.7	110.6	110.9	111.8	112.1	112.1	112.0	112.7	113.2	112.5
Fuel and other utilities	102.7	104.1	105.8	106.1	105.1	104.1	104.8	105.7	105.7	105.7	105.9	106.7	109.0	109.4	109.5
Fuels	97.1	97.7	100.6	100.8	98.3	96.6	97.2	98.4	98.3	98.2	98.5	99.2	103.0	103.4	103.5
Fuel oil, coal, and bottled gas	77.6	77.9	76.2	75.9	74.6	75.0	76.7	80.3	81.0	81.2	82.1	81.2	80.1	79.6	78.8
Gas (piped) and electricity	103.6	104.4	108.0	108.2	105.5	103.5	103.9	104.8	104.6	104.6	104.8	105.8	110.3	110.8	111.0
Other utilities and public services	120.1	122.9	122.5	123.3	124.7	124.6	125.6	126.2	126.3	126.2	126.5	127.2	127.4	127.9	128.0
Household furnishings and operations	106.7	108.9	109.1	109.6	109.9	110.2	110.2	110.4	110.4	110.0	110.1	110.1	110.4	110.8	110.8
Housefurnishings	103.1	104.5	104.5	105.1	105.4	105.6	105.4	105.5	105.4	104.5	104.3	104.0	104.4	104.8	104.6
Housekeeping supplies	111.8	115.1	115.1	115.8	116.1	116.9	117.4	117.9	118.1	118.9	120.0	121.2	121.6	122.0	122.6
Housekeeping services	110.9	115.0	116.0	116.3	116.3	116.4	116.5	116.9	117.0	117.1	117.2	117.4	117.6	117.4	117.6
Apparel and upkeep	110.4	114.9	112.2	117.2	120.1	119.5	117.6	114.8	114.7	118.4	120.0	119.4	116.9	114.4	114.5

31. 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	1988 Aug.	Sept.	Oct.	Nov.	Dec.	1989 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Apparel commodities	108.8	113.4	110.5	115.8	118.9	118.1	116.0	113.0	112.8	116.7	118.4	117.7	115.0	112.3	112.4
Men's and boys' apparel	108.5	112.8	111.0	114.4	116.9	117.5	116.5	114.4	113.4	115.1	116.4	116.9	115.0	113.7	113.9
Women's and girls' apparel	110.3	114.5	109.5	117.6	121.5	119.9	116.2	111.3	110.7	118.3	120.2	118.1	113.5	108.7	108.9
Infants' and toddlers' apparel	114.0	118.6	120.4	121.5	120.6	120.1	120.3	118.5	121.8	121.7	126.7	128.3	126.7	121.9	120.4
Footwear	105.5	110.4	108.0	112.7	116.3	115.0	114.0	112.8	113.1	114.1	115.2	115.0	114.1	113.9	113.1
Other apparel commodities	107.4	114.9	114.9	116.2	117.9	118.2	117.8	117.8	119.0	118.5	119.6	119.8	119.8	120.7	122.4
Apparel services	119.2	123.0	123.3	123.7	124.7	125.4	125.8	126.4	126.8	127.7	128.1	128.9	129.0	128.6	128.7
Transportation	105.1	108.3	109.4	109.4	109.8	110.3	110.4	110.7	111.2	111.6	114.5	116.0	116.0	115.4	114.2
Private transportation	104.1	107.5	108.6	108.6	109.0	109.5	109.5	109.7	110.3	110.6	113.7	115.3	115.2	114.6	113.3
New vehicles	114.0	116.2	115.5	115.8	116.9	118.1	118.8	119.2	119.3	119.2	118.9	119.0	118.7	118.3	117.6
New cars	114.3	116.6	116.0	116.4	117.5	118.5	118.9	119.3	119.5	119.4	119.2	119.3	118.9	118.4	117.6
Used cars	113.1	117.9	119.0	119.2	119.8	119.5	120.1	120.3	120.4	120.3	120.5	120.9	121.1	120.9	120.1
Motor fuel	80.3	80.9	84.3	83.1	81.6	81.5	80.4	79.6	80.3	81.5	92.3	96.7	96.1	94.5	91.0
Gasoline	80.2	80.8	84.3	83.2	81.6	81.5	80.4	79.5	80.2	81.4	92.3	96.9	96.3	94.7	91.2
Maintenance and repair	115.1	119.8	120.5	121.0	121.3	121.5	121.5	122.4	123.3	123.5	123.9	124.4	124.6	124.8	125.4
Other private transportation	119.0	125.8	126.5	127.2	128.9	130.0	130.4	131.4	132.2	132.5	132.7	133.5	133.9	133.7	133.7
Other private transportation commodities	96.7	98.6	98.8	99.3	98.8	99.0	99.9	100.5	100.7	99.8	100.4	101.1	101.5	101.0	101.6
Other private transportation services	123.4	131.7	132.5	133.2	135.5	136.8	137.1	138.2	139.2	139.8	139.8	140.7	141.2	141.0	140.8
Public transportation	120.4	122.5	123.0	123.1	123.5	124.3	125.4	126.1	126.8	126.9	127.1	127.5	128.2	128.3	129.1
Medical care	130.2	139.0	140.3	140.8	141.7	142.2	142.8	144.2	145.6	146.5	147.2	147.9	148.8	150.1	151.1
Medical care commodities	130.2	139.0	140.0	141.0	142.1	142.2	143.1	143.9	144.7	146.0	147.4	148.9	149.9	150.3	150.9
Medical care services	130.3	139.0	140.3	140.8	141.6	142.2	142.7	144.2	145.8	146.7	147.2	147.6	148.6	150.0	151.1
Professional services	129.0	137.7	138.9	139.3	139.9	140.6	141.0	142.4	143.7	144.7	145.1	145.5	146.4	147.3	147.8
Hospital and related services	131.1	143.3	145.4	146.3	147.8	148.9	150.0	151.9	154.2	154.8	155.6	156.2	157.3	159.7	161.6
Entertainment	114.8	119.7	120.1	120.6	121.2	121.7	122.2	123.1	123.6	124.1	124.8	124.9	125.5	126.1	126.5
Entertainment commodities	110.6	115.1	115.5	116.0	116.5	117.3	117.6	118.1	118.4	118.7	119.1	119.5	119.7	120.1	120.1
Entertainment services	121.8	127.2	127.6	128.1	128.9	129.0	129.7	131.3	131.9	132.7	133.8	133.6	134.6	135.7	136.4
Other goods and services	127.8	136.5	137.2	139.3	139.9	140.3	140.6	143.0	143.7	144.0	144.4	145.2	146.3	147.5	148.8
Tobacco products	133.7	146.0	148.9	149.2	149.5	149.9	150.2	156.9	158.2	158.9	159.2	160.7	163.8	167.3	168.5
Personal care	115.0	119.3	119.0	120.3	120.9	121.7	122.3	122.7	123.0	123.5	123.9	124.7	124.4	124.6	125.4
Toilet goods and personal care appliances	113.9	118.0	117.4	118.8	119.9	120.6	121.5	121.7	121.9	122.3	122.7	122.9	122.4	122.8	123.8
Personal care services	116.1	120.5	120.7	121.9	122.0	122.7	123.0	123.6	124.2	124.6	125.2	126.7	126.9	126.8	127.1
Personal and educational expenses	138.2	147.4	147.4	151.1	151.7	152.0	152.3	153.3	153.7	153.9	154.3	154.6	155.3	155.7	157.3
School books and supplies	137.9	147.1	146.0	150.0	150.8	150.9	151.1	152.0	153.9	154.0	154.1	154.1	154.5	154.7	155.6
Personal and educational services	138.4	147.7	147.8	151.5	152.0	152.3	152.7	153.7	154.0	154.1	154.6	154.9	155.7	156.1	157.8
All items	112.5	117.0	117.7	118.5	118.9	119.0	119.2	119.7	120.2	120.8	121.8	122.5	122.8	123.2	123.2
Commodities	107.3	111.0	111.6	112.5	113.0	113.1	113.0	113.5	113.9	114.7	116.4	117.1	116.9	116.8	116.4
Food and beverages	113.3	117.9	119.1	119.8	120.0	119.9	120.3	121.7	122.4	123.1	123.7	124.4	124.6	125.1	125.3
Commodities less food and beverages	103.6	106.8	107.0	108.1	108.7	108.9	108.6	108.4	108.7	109.5	111.8	112.6	112.2	111.6	110.9
Nondurables less food and beverages	100.8	104.6	104.9	106.6	107.2	107.1	106.3	105.9	106.3	108.1	112.1	113.4	112.6	111.7	110.8
Apparel commodities	108.8	113.4	110.5	115.8	118.9	118.1	116.0	113.0	112.8	116.7	118.4	117.7	115.0	112.3	112.4
Nondurables less food, beverages, and apparel	99.2	102.9	104.7	104.7	104.1	104.3	104.1	104.9	105.6	106.5	111.6	113.9	114.0	113.9	112.6
Durables	106.6	108.9	108.8	109.1	109.7	110.4	110.7	111.0	111.0	110.6	110.5	110.6	110.7	110.6	110.1
Services	119.4	124.7	125.7	126.3	126.7	126.9	127.2	127.9	128.4	128.9	129.1	129.7	130.6	131.5	132.0
Rent of shelter (12/84 = 100)	114.0	119.4	120.3	120.7	121.1	121.4	121.5	121.9	122.4	123.1	123.2	123.7	124.2	125.4	125.9
Household services less rent of shelter (12/84 = 100)	104.0	105.9	107.6	108.0	107.2	106.2	106.8	107.5	107.4	107.4	107.6	108.3	110.5	110.9	111.0
Transportation services	120.8	127.1	127.8	128.4	129.9	130.9	131.2	132.2	133.1	133.5	133.7	134.4	134.8	134.8	134.9
Medical care services	130.3	139.0	140.3	140.8	141.6	142.2	142.7	144.2	145.8	146.7	147.2	147.6	148.6	150.0	151.1
Other services	124.7	131.4	131.6	133.6	134.2	134.5	135.0	136.1	136.5	137.0	137.6	137.9	138.6	139.1	140.1
Special indexes:															
All items less food	112.2	116.7	117.3	118.1	118.6	118.8	118.8	119.2	119.6	120.2	121.3	122.0	122.3	122.6	122.6
All items less shelter	111.0	115.2	115.9	116.8	117.2	117.3	117.4	118.0	118.5	119.1	120.4	121.1	121.3	121.4	121.3
All items less homeowners' costs (12/84 = 100)	106.4	110.4	111.1	111.9	112.2	112.3	112.4	113.0	113.4	114.1	115.2	115.8	116.1	116.3	116.3
All items less medical care	111.5	115.8	116.6	117.3	117.7	117.8	117.9	118.5	118.9	119.5	120.5	121.2	121.5	121.8	121.8
Commodities less food	103.9	107.2	107.3	108.4	109.0	109.2	108.9	108.8	109.0	109.9	112.1	112.9	112.5	112.0	111.4
Nondurables less food	101.4	105.3	105.6	107.2	107.8	107.6	106.9	106.5	107.0	108.7	112.4	113.6	113.0	112.1	111.4
Nondurables less food and apparel	100.0	103.7	105.3	105.3	104.9	104.3	104.9	105.6	106.4	107.2	111.7	113.8	114.0	113.9	112.8
Nondurables	107.2	111.5	112.3	113.4	113.8	113.7	113.5	114.0	114.6	115.8	118.1	119.1	118.8	118.6	118.3
Services less rent of shelter (12/84 = 100)	110.8	115.6	116.6	117.3	117.6	117.6	118.1	119.0	119.5	119.8	120.1	120.7	121.9	122.3	122.7
Services less medical care	118.2	123.3	124.3	124.9	125.2	125.3	125.6	126.3	126.7	127.2	127.4	128.0	128.9	129.7	130.1
Energy	88.0	88.6	91.8	91.3	89.3	88.4	88.1	88.3	88.6	89.2	94.8	97.4	98.9	98.3	96.6
All items less energy	116.0	121.0	121.5	122.4	123.1	123.4	123.6	124.2	124.7	125.3	125.8	126.2	126.4	126.8	127.1
All items less food and energy	116.8	121.9	122.2	123.1	124.0	124.3	124.4	124.8	125.3	125.9	126.3	126.6	126.8	127.3	127.6
Commodities less food and energy	110.8	114.7	114.3	115.8	116.9	117.1	117.0	116.9	117.1	117.9	118.4	118.5	118.2	117.9	117.9
Energy commodities	80.3	80.9	83.8	82.7	81.2	81.2	80.3	79.9	80.6	81.7	91.6	95.6	94.9	93.5	90.2
Services less energy	121.2	127.0	127.8	128.4	129.1	129.5	129.8	130.5	131.1	131.6	131.9	132.4	132.9	133.8	134.4
Purchasing power of the consumer dollar:															
1982-84 = $1.00	89.0	85.5	84.9	84.4	84.1	84.0	83.9	83.5	83.2	82.8	82.1	81.6	81.4	81.2	81.2
1967 = $1.00	29.9	28.7	28.5	28.3	28.2	28.2	28.2	28.0	27.9	27.8	27.6	27.4	27.3	27.3	27.2

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

(1982-84 = 100, unless otherwise indicated)

Area[1]	Pricing sche-dule[2]	All Urban Consumers							Urban Wage Earners						
		1988		1989					1988		1989				
		Aug.	Sept.	Apr.	May	June	July	Aug.	Aug.	Sept.	Apr.	May	June	July	Aug.
U.S. city average	M	119.0	119.8	123.1	123.8	124.1	124.4	124.6	117.7	118.5	121.8	122.5	122.8	123.2	123.2
Region and area size[3]															
Northeast urban	M	122.5	123.9	127.4	128.3	128.5	129.0	129.1	121.3	122.7	126.2	127.1	127.4	127.9	128.0
Size A - More than 1,200,000	M	123.4	124.8	128.0	128.7	129.1	129.3	129.5	121.4	122.8	125.9	126.7	127.1	127.3	127.5
Size B - 500,000 to 1,200,000	M	120.9	122.2	126.1	127.2	127.0	128.8	129.1	119.7	120.8	124.9	126.0	125.9	127.8	127.9
Size C - 50,000 to 500,000	M	120.5	121.3	126.2	127.6	127.6	127.9	127.8	122.9	123.7	128.6	130.0	130.3	130.3	130.2
North Central urban	M	117.2	117.7	120.8	121.3	121.8	122.0	122.0	115.3	115.8	118.9	119.4	119.9	120.1	120.0
Size A - More than 1,200,000	M	118.3	119.0	121.9	122.2	123.0	123.5	123.5	115.7	116.3	119.2	119.5	120.3	120.7	120.7
Size B - 360,000 to 1,200,000	M	116.5	117.0	120.6	120.8	120.9	120.7	120.9	114.2	114.6	118.2	118.5	118.5	118.5	118.6
Size C - 50,000 to 360,000	M	117.2	117.4	121.2	122.2	122.1	122.0	122.1	116.1	116.3	120.1	121.1	121.0	120.8	120.8
Size D - Nonmetro-politan (less than 50,0000	M	113.9	114.2	116.3	116.8	117.4	117.5	117.1	113.7	113.9	116.1	116.8	117.2	117.4	116.9
South urban	M	117.0	117.7	120.8	121.3	121.7	122.0	122.1	116.5	117.2	120.3	120.9	121.3	121.5	121.6
Size A - More than 1,200,000	M	118.0	118.7	121.4	122.0	122.4	122.6	122.8	117.2	117.9	120.6	121.3	121.7	121.9	122.0
Size B - 450,000 to 1,200,000	M	117.6	118.6	122.2	122.4	123.0	123.5	123.4	115.8	116.6	120.1	120.5	121.0	121.4	121.2
Size C - 50,000 to 450,000	M	115.9	116.4	119.4	120.0	120.4	120.5	121.0	116.4	117.0	120.0	120.6	121.1	121.2	121.6
Size D - Nonmetro-politan (less than 50,000)	M	115.3	116.0	119.4	120.4	120.4	120.1	120.0	116.2	116.8	120.2	121.3	121.3	120.9	121.1
West urban	M	119.6	120.2	123.8	124.5	124.6	125.1	125.3	118.3	118.9	122.6	123.3	123.3	123.8	123.9
Size A - More than 1,250,000	M	121.1	121.7	125.3	126.2	126.3	126.9	127.1	118.4	119.0	122.7	123.5	123.6	124.2	124.3
Size C - 50,000 to 330,000	M	118.1	118.5	122.1	122.5	122.4	122.7	122.6	117.5	117.8	121.5	121.9	121.7	122.0	121.9
Size classes:															
A (12/86 = 100)	M	108.2	109.0	111.8	112.4	112.7	113.1	113.2	108.1	108.9	111.7	112.3	112.7	113.0	113.1
B	M	118.0	118.9	122.6	123.1	123.3	123.9	124.0	116.7	117.6	121.2	121.8	122.0	122.6	122.6
C	M	117.5	117.9	121.6	122.4	122.5	122.7	122.9	117.8	118.3	122.0	122.8	123.0	123.0	123.1
D	M	115.8	116.6	119.6	120.3	120.5	120.5	120.5	116.2	116.9	119.9	120.7	120.8	120.9	120.9
Selected local areas															
Chicago, IL-Northwestern IN	M	120.1	122.0	123.6	123.9	125.7	126.4	126.4	116.4	118.2	119.8	120.1	121.8	122.6	122.5
Los Angeles-Long Beach, Anaheim, CA	M	122.6	123.4	127.2	128.3	128.7	129.0	128.9	119.5	120.3	124.0	125.0	125.3	125.7	125.5
New York, NY-Northeastern NJ	M	124.2	126.0	129.5	130.2	130.5	130.6	130.9	122.2	124.1	127.5	128.2	128.7	128.7	128.9
Philadelphia, PA-NJ	M	123.9	125.2	126.7	127.9	128.8	129.3	129.1	123.6	124.9	126.7	127.9	128.9	129.3	129.3
San Francisco-Oakland, CA	M	122.0	122.1	125.4	126.3	126.2	127.4	128.1	120.5	121.1	124.8	125.7	125.6	126.4	127.0
Baltimore, MD	M	–	121.3	–	124.1	–	124.9	–	–	121.0	–	123.7	–	124.6	–
Boston, MA	1	–	126.2	–	130.5	–	130.3	–	–	126.1	–	130.6	–	130.8	–
Cleveland, OH	1	–	117.6	–	122.8	–	124.4	–	–	112.7	–	117.7	–	118.8	–
Miami, FL	1	–	118.8	–	120.9	–	121.6	–	–	117.8	–	120.0	–	120.6	–
St. Louis, MO-IL	1	–	117.3	–	121.5	–	123.1	–	–	117.1	–	121.2	–	122.8	–
Washington, DC-MD-VA	1	–	122.8	–	127.1	–	127.8	–	–	122.3	–	126.6	–	127.3	–
Dallas-Ft. Worth, TX	1	117.2	–	118.7	–	120.0	–	120.0	117.0	–	118.6	–	120.0	–	119.8
Detroit, MI	2	117.6	–	121.7	–	122.1	–	122.2	114.6	–	119.0	–	119.3	–	119.2
Houston, TX	2	110.3	–	113.2	–	114.1	–	114.4	110.6	–	113.5	–	114.5	–	114.9
Pittsburgh, PA	2	115.3	–	119.2	–	120.4	–	120.8	110.7	–	114.7	–	115.9	–	116.0

[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.

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

(1982-84 = 100)

Series	1980	1981	1982	1983	1984	1985	1986	1987	1988
Consumer Price Index for All Urban Consumers:									
All items:									
Index	82.4	90.9	96.5	99.6	103.9	107.6	109.6	113.6	118.3
Percent change	13.5	10.3	6.2	3.2	4.3	3.6	1.9	3.6	4.1
Food and beverages:									
Index	86.7	93.5	97.3	99.5	103.2	105.6	109.1	113.5	118.2
Percent change	8.5	7.8	4.1	2.3	3.7	2.3	3.3	4.0	4.1
Housing:									
Index	81.1	90.4	96.9	99.5	103.6	107.7	110.9	114.2	118.5
Percent change	15.7	11.5	7.2	2.7	4.1	4.0	3.0	3.0	3.8
Apparel and upkeep:									
Index	90.9	95.3	97.8	100.2	102.1	105.0	105.9	110.6	115.4
Percent change	7.1	4.8	2.6	2.5	1.9	2.8	.9	4.4	4.3
Transportation:									
Index	83.1	93.2	97.0	99.3	103.7	106.4	102.3	105.4	108.7
Percent change	17.9	12.2	4.1	2.4	4.4	2.6	-3.9	3.0	3.1
Medical care:									
Index	74.9	82.9	92.5	100.6	106.8	113.5	122.0	130.1	138.6
Percent change	11.0	10.7	11.6	8.8	6.2	6.3	7.5	6.6	6.5
Entertainment:									
Index	83.6	90.1	96.0	100.1	103.8	107.9	111.6	115.3	120.3
Percent change	9.0	7.8	6.5	4.3	3.7	3.9	3.4	3.3	4.3
Other goods and services:									
Index	75.2	82.6	91.1	101.1	107.9	114.5	121.4	128.5	137.0
Percent change	9.1	9.8	10.3	11.0	6.7	6.1	6.0	5.8	6.6
Consumer Price Index for Urban Wage Earners and Clerical Workers:									
All items:									
Index	82.9	91.4	96.9	99.8	103.3	106.9	108.6	112.5	117.0
Percent change	13.4	10.3	6.0	3.0	3.5	3.5	1.6	3.6	4.0

34. Producer Price Indexes, by stage of processing

(1982 = 100)

Grouping	Annual average		1988				1989							
	1987	1988	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Finished goods	105.4	108.0	108.6	109.4	109.8	110.0	111.1	111.7	112.1	113.0	114.2	114.1	114.0	113.3
Finished consumer goods	103.6	106.2	107.0	107.6	108.0	108.2	109.4	110.1	110.6	111.8	113.3	113.0	112.8	111.8
Finished consumer foods	109.5	112.6	115.1	114.6	114.9	115.1	116.7	117.2	118.3	117.7	119.1	118.4	119.0	118.7
Finished consumer goods excluding foods	100.7	103.1	103.0	104.1	104.6	104.8	105.8	106.6	106.8	108.8	110.4	110.3	109.7	108.4
Nondurable goods less food	94.9	97.3	97.6	97.7	98.4	98.7	100.0	100.9	101.3	104.2	106.1	105.9	105.3	103.5
Durable goods	111.5	113.8	112.8	116.4	116.1	116.1	116.6	117.0	116.6	116.4	117.1	117.2	116.7	116.8
Capital equipment	111.7	114.3	114.3	116.0	116.1	116.4	117.1	117.5	117.5	117.6	117.9	118.6	118.6	118.8
Intermediate materials, supplies, and components	101.5	107.1	108.7	108.6	108.9	109.4	110.6	111.0	111.5	112.4	112.7	112.6	112.6	112.1
Materials and components for manufacturing	105.3	113.2	114.9	115.5	116.2	116.8	118.0	118.3	118.7	118.9	118.9	118.4	118.2	117.9
Materials for food manufacturing	100.8	106.0	109.5	108.3	107.7	108.6	110.4	110.1	111.4	111.1	112.4	112.1	112.9	113.2
Materials for nondurable manufacturing	102.2	112.9	115.2	116.0	116.8	117.5	119.2	119.7	119.8	120.3	120.5	119.6	118.9	118.1
Materials for durable manufacturing	106.2	118.7	120.3	121.8	123.2	124.3	125.5	125.3	125.7	125.9	124.9	123.6	123.0	122.2
Components for manufacturing	108.8	112.3	113.2	113.5	113.8	114.1	114.9	115.3	115.7	115.8	116.1	116.3	116.5	116.7
Materials and components for construction	109.8	116.1	117.1	117.5	118.1	118.7	119.4	119.9	120.5	121.1	121.5	121.4	121.5	121.4
Processed fuels and lubricants	73.3	71.2	72.6	69.7	69.0	69.8	71.6	72.1	73.2	76.7	78.1	79.3	78.7	77.3
Containers	114.5	120.1	122.3	122.4	122.6	122.7	123.1	123.9	124.4	125.1	125.5	125.8	126.0	126.0
Supplies	107.7	113.7	115.6	116.0	116.2	116.2	117.2	117.4	118.0	118.0	118.0	118.0	118.4	118.2
Crude materials for further processing	93.7	96.0	96.7	95.9	94.5	97.3	101.4	101.2	103.2	104.4	106.3	103.9	103.7	101.0
Foodstuffs and feedstuffs	96.2	106.1	112.0	111.9	108.0	109.5	112.5	111.0	113.7	111.6	115.0	111.4	109.7	109.5
Crude nonfood materials	87.9	85.5	83.0	81.9	82.0	85.4	90.0	90.7	92.2	95.3	96.2	94.6	95.3	91.2
Special groupings:														
Finished goods, excluding foods	104.0	106.5	106.4	107.7	108.1	108.3	109.2	109.9	110.0	111.4	112.6	112.7	112.3	111.5
Finished energy goods	61.8	59.8	58.8	58.7	60.0	59.2	60.8	61.8	62.3	68.4	72.0	70.1	68.4	63.6
Finished goods less energy	112.3	115.8	116.7	117.7	117.8	118.2	119.2	119.8	120.1	120.0	120.8	121.1	121.2	121.3
Finished consumer goods less energy	112.5	116.3	117.5	118.3	118.5	118.9	120.0	120.6	121.1	120.9	121.8	121.9	122.1	122.3
Finished goods less food and energy	113.3	117.0	117.2	118.8	118.9	119.4	120.1	120.7	120.7	120.8	121.3	122.0	121.9	122.3
Finished consumer goods less food and energy	114.2	118.5	118.9	120.5	120.6	121.2	121.9	122.6	122.6	122.7	123.3	124.0	123.9	124.4
Consumer nondurable goods less food and energy	116.3	122.0	123.3	123.6	123.9	125.0	125.9	126.8	127.1	127.4	127.9	129.0	129.2	129.9
Intermediate materials less foods and feeds	101.7	106.9	108.3	108.3	108.7	109.2	110.4	110.8	111.4	112.3	112.6	112.6	112.5	112.0
Intermediate foods and feeds	99.2	109.5	115.5	114.7	113.4	113.0	115.6	114.0	115.2	113.7	114.2	112.7	114.3	113.1
Intermediate energy goods	73.0	70.9	72.3	69.4	68.7	69.5	71.2	71.8	72.9	76.4	77.7	78.9	78.3	76.9
Intermediate goods less energy	107.3	114.6	116.3	116.8	117.3	117.8	118.9	119.1	119.6	119.9	120.0	119.7	119.7	119.4
Intermediate materials less foods and energy	107.8	115.2	116.7	117.3	118.0	118.6	119.6	119.9	120.3	120.7	120.8	120.5	120.3	120.0
Crude energy materials	75.0	67.7	64.7	63.3	62.9	66.6	71.2	72.0	73.5	77.3	78.7	77.3	78.9	73.6
Crude materials less energy	100.9	112.6	117.1	117.0	114.7	116.1	119.3	118.1	120.4	118.8	121.0	117.8	115.8	116.0
Crude nonfood materials less energy	115.7	133.0	133.4	133.4	135.6	136.9	140.3	140.3	141.3	141.2	139.8	137.7	134.9	136.5

35. Producer Price indexes, by durability of product

(1982 = 100)

Grouping	Annual average		1988				1989							
	1987	1988	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Total durable goods	109.9	114.7	115.2	116.4	116.8	117.2	118.1	118.3	118.5	118.7	118.8	118.8	118.7	118.8
Total nondurable goods	97.5	101.1	102.7	102.2	102.0	102.8	104.8	105.2	106.1	107.4	108.7	108.1	108.0	106.7
Total manufactures	104.4	109.1	110.1	110.5	111.0	111.4	112.5	112.9	113.4	114.4	114.9	114.8	114.6	114.2
Durable	109.6	114.1	114.5	115.6	116.0	116.4	117.1	117.4	117.6	117.8	118.0	118.1	118.1	118.3
Nondurable	99.2	104.1	105.6	105.4	106.1	106.4	107.8	108.3	109.2	110.8	111.6	111.2	110.9	110.1
Total raw or slightly processed goods	94.2	95.9	97.5	96.5	94.8	96.7	99.9	100.1	101.1	101.5	103.5	102.4	102.5	100.3
Durable	122.6	148.0	149.5	150.1	154.8	157.5	162.6	161.9	161.0	159.0	156.5	151.3	145.0	146.5
Nondurable	92.9	93.4	95.0	93.9	92.0	93.9	97.0	97.2	98.2	98.8	101.0	100.1	100.5	98.2

36. Producer price indexes for the net output of major industry groups

(December 1984 = 100, unless otherwise indicated)

Industry	SIC	Annual average		1988				1989							
		1987	1988	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Total mining industries		75.0	70.6	68.1	68.7	68.3	70.8	74.6	75.5	74.9	77.2	78.6	77.2	78.1	74.1
Metal mining	10	100.1	100.7	98.1	101.4	108.3	111.1	112.7	105.9	104.8	103.9	99.5	96.1	92.1	96.4
Anthracite mining (12/85=100)	11	98.9	100.2	99.8	99.9	101.5	102.7	102.8	102.7	103.0	102.5	102.4	102.4	102.4	102.6
Bituminous coal and lignite mining (12/85=100)	12	96.0	94.6	94.3	94.4	93.9	93.9	93.8	93.0	92.9	93.4	94.1	94.0	94.9	94.8
Oil and gas extraction (12/85=100)	13	74.3	68.5	65.4	65.9	65.2	68.3	73.0	74.5	73.8	76.7	78.7	77.0	78.2	72.9
Mining and quarrying of nonmetallic minerals, except fuels	14	105.1	108.0	108.7	108.8	109.1	109.1	109.9	110.8	110.9	111.3	111.7	111.9	111.6	111.5
Total manufacturing industries		100.9	104.4	105.1	105.6	106.1	106.4	107.5	107.9	108.5	109.4	110.1	110.0	109.9	109.5
Food and kindred products	20	102.6	107.1	109.5	109.6	109.6	109.5	110.8	110.9	111.9	111.6	112.1	111.9	112.5	112.4
Tobacco manufactures	21	126.5	141.8	145.0	145.1	145.1	153.1	154.9	155.0	155.0	155.1	155.1	163.5	163.6	164.9
Textile mill products	22	102.6	106.8	107.4	107.3	107.6	107.8	108.3	108.3	108.6	108.8	108.9	108.9	109.1	109.7
Apparel and other finished products made from fabrics and similar materials	23	103.9	107.2	107.8	108.0	108.2	108.5	108.9	109.3	109.3	109.5	109.5	109.6	110.1	110.5
Lumber and wood products, except furniture	24	105.3	109.2	109.5	109.4	109.7	109.6	110.7	112.3	113.1	114.4	115.4	115.9	117.1	116.6
Furniture and fixtures	25	106.4	111.4	112.5	112.7	112.9	113.3	113.6	114.0	114.4	114.7	115.3	115.7	115.8	116.1
Paper and allied products	26	104.9	113.7	116.2	116.8	117.0	117.5	118.2	119.7	120.4	120.6	121.3	121.5	121.2	121.2
Printing, publishing, and allied industries	27	112.2	118.2	119.0	119.8	120.1	120.5	122.6	123.2	123.6	124.0	124.2	124.4	124.8	125.2
Chemicals and allied products	28	103.6	113.0	115.4	116.0	117.2	117.8	119.6	119.9	120.6	121.0	121.0	120.6	120.4	119.5
Petroleum refining and related products	29	70.5	67.7	66.7	64.5	67.2	66.8	68.5	69.3	71.5	79.9	82.9	80.4	77.6	73.0
Rubber and miscellaneous plastic products	30	100.9	106.7	108.2	108.4	108.5	108.7	109.3	109.6	110.2	110.5	110.5	110.4	110.2	110.2
Leather and leather products	31	106.6	113.4	114.6	114.8	114.9	115.1	115.8	116.6	117.0	117.2	117.1	117.2	117.8	118.7
Stone, clay, glass, and concrete products ..	32	104.5	105.8	105.8	106.0	106.2	106.3	106.5	106.7	107.2	107.9	107.9	108.2	108.4	108.3
Primary metal industries	33	101.0	113.0	114.1	115.8	117.5	118.5	119.7	119.4	120.1	120.1	119.5	118.4	118.4	117.9
Fabricated metal products, except machinery and transportation equipment....	34	102.1	107.4	108.8	109.3	109.6	110.0	110.6	111.1	111.5	112.0	112.4	112.5	112.6	112.7
Machinery, except electrical	35	103.2	106.4	107.2	107.4	107.8	108.1	108.9	109.3	109.7	109.8	110.2	110.6	111.0	111.2
Electrical and electronic machinery, equipment, and supplies..............................	36	103.3	104.6	104.8	105.1	105.2	105.3	106.0	106.4	106.4	106.6	106.9	107.1	107.5	107.6
Transportation equipment	37	105.9	107.8	106.7	110.7	110.3	110.9	111.4	111.7	111.2	110.9	111.5	111.8	111.0	111.1
Measuring and controlling instruments; photographic, medical, optical goods; watches, clocks	38	105.1	107.0	106.9	107.2	107.5	107.5	108.8	109.1	109.7	110.1	110.4	110.7	110.9	111.1
Miscellaneous manufacturing industries (12/85=100)	39	103.8	107.5	108.3	108.3	108.6	108.9	110.1	110.6	110.9	111.2	111.5	111.8	112.1	112.4
Service industries:															
Pipelines, except natural gas (12/86=100)	46	97.9	94.8	94.8	94.8	94.7	94.7	94.5	94.5	94.5	94.4	94.4	94.4	94.4	94.4

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

(1982 = 100)

Index	1980	1981	1982	1983	1984	1985	1986	1987	1988
Finished goods:									
Total	88.0	96.1	100.0	101.6	103.7	104.7	103.2	105.4	108.0
Consumer goods	88.6	96.6	100.0	101.3	103.3	103.8	101.4	103.6	106.2
Capital equipment	85.8	94.6	100.0	102.8	105.2	107.5	109.7	111.7	114.3
Intermediate materials, supplies, and components:									
Total	90.3	98.6	100.0	100.6	103.1	102.7	99.1	101.5	107.1
Materials and components for manufacturing	91.7	98.7	100.0	101.2	104.1	103.3	102.2	105.3	113.2
Materials and components for construction	91.3	97.9	100.0	102.8	105.6	107.3	108.1	109.8	116.1
Processed fuels and lubricants	85.0	100.6	100.0	95.4	95.7	92.8	72.7	73.3	71.2
Containers	89.1	96.7	100.0	100.4	105.9	109.0	110.3	114.5	120.1
Supplies	89.9	96.9	100.0	101.8	104.1	104.4	105.6	107.7	113.7
Crude materials for further processing:									
Total	95.3	103.0	100.0	101.3	103.5	95.8	87.7	93.7	96.0
Foodstuffs and feedstuffs	104.6	103.9	100.0	101.8	104.7	94.8	93.2	96.2	106.1
Nonfood materials except fuel	84.6	101.8	100.0	100.7	102.2	96.9	81.6	87.9	85.5
Fuel	69.4	84.8	100.0	105.1	105.1	102.7	92.2	84.1	82.1

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

(1985 = 100, unless otherwise indicated)

Category	1974 SITC	1986 Dec.	1987 Mar.	1987 June	1987 Sept.	1987 Dec.	1988 Mar.	1988 June	1988 Sept.	1988 Dec.	1989 Mar.	1989 June
ALL COMMODITIES		99.0	99.9	102.2	102.8	104.9	106.5	109.5	111.9	111.6	113.3	113.2
Food	0	90.1	87.3	89.9	86.7	94.6	95.2	103.4	118.7	114.2	117.6	115.5
Meat and meat preparations	01	114.5	115.0	121.2	118.8	116.8	122.8	131.0	137.0	130.3	132.9	127.9
Fish and crustaceans	03	115.9	117.1	125.8	131.1	138.5	140.9	145.0	175.9	174.0	169.1	159.8
Grain and grain preparations	04	72.5	68.3	71.0	67.8	77.4	79.8	87.2	108.5	102.0	108.4	106.4
Vegetables and fruit	05	117.5	115.3	112.4	101.1	100.5	97.5	104.3	109.9	110.3	108.8	113.5
Animal feeds, excluding unmilled cereals	08	119.7	117.0	123.8	123.1	145.2	134.6	158.1	161.0	157.0	154.1	144.1
Miscellaneous food products	09	99.9	100.1	100.6	100.3	100.3	102.3	102.8	105.2	104.9	107.0	108.2
Beverages and tobacco	1	102.6	102.6	105.0	105.5	107.0	109.6	110.6	112.0	111.7	117.2	117.6
Tobacco and tobacco products	12	102.6	102.6	105.0	105.5	107.0	109.8	110.7	112.1	111.8	117.6	117.9
Crude materials	2	102.4	105.7	114.5	118.7	125.2	130.0	139.9	140.8	135.8	142.6	142.9
Raw hides and skins	21	115.9	131.9	149.6	147.7	157.1	171.4	166.8	156.7	136.8	146.7	150.0
Oilseeds	22	95.2	90.4	101.6	95.1	109.6	115.6	143.0	154.7	135.7	139.3	129.8
Crude rubber	23	98.9	99.9	101.0	102.8	105.3	104.5	106.1	109.1	109.9	111.1	112.2
Wood	24	107.9	111.2	116.2	141.7	146.0	150.2	149.6	150.0	148.6	157.3	171.2
Pulp and waste paper	25	129.4	144.2	149.9	153.0	160.4	171.2	179.5	181.7	182.1	192.9	193.6
Textile fibers	26	90.9	97.8	112.4	116.5	111.6	107.5	109.9	100.8	103.6	106.7	115.8
Crude minerals	27	96.8	94.4	94.0	91.6	91.6	92.8	94.2	94.8	94.8	98.8	99.3
Metal ores and metal scrap	28	96.8	98.8	107.0	117.4	125.9	131.8	146.0	145.0	150.4	163.5	156.9
Fuels and related products	3	77.8	81.3	82.8	84.6	82.5	79.3	82.1	79.5	79.4	81.7	86.0
Coal and coke	32	92.0	92.6	88.2	91.0	89.8	90.6	92.0	92.9	93.4	93.7	94.4
Crude petroleum and petroleum products	33	–	–	–	–	100.0	90.8	97.2	89.2	88.4	94.5	105.3
Fats and oils	4	71.8	73.9	78.8	78.5	81.6	92.7	97.3	101.5	91.5	90.3	87.1
Animal oils and fats	41	79.9	81.1	86.7	86.7	88.7	101.3	101.6	104.3	95.7	91.8	89.6
Fixed vegetable oils and fats	42	64.6	67.3	71.9	71.2	75.4	85.7	93.7	99.1	87.1	88.2	84.1
Chemicals and related products	5	95.2	99.6	106.7	107.7	112.9	117.9	121.6	124.9	125.5	125.5	121.7
Organic chemicals	51	92.4	101.9	118.4	116.1	123.5	135.1	144.6	153.3	150.8	149.6	144.2
Dyeing, tanning, and coloring materials	53	101.4	103.6	104.2	105.5	108.5	109.1	110.1	111.5	113.0	115.5	116.2
Medicinal and pharmaceutical products (12/85 = 100)	54	100.8	101.0	101.4	102.2	105.3	109.3	106.3	105.9	107.5	109.0	108.8
Essential oils, polish, and cleaning preparations	55	104.2	105.5	105.7	107.3	108.4	111.2	113.6	120.2	122.4	125.3	124.6
Fertilizers, manufactured	56	77.4	85.6	91.6	100.9	106.5	110.6	109.8	116.4	119.9	119.4	108.7
Artificial resins, plastics and cellulose	57	99.5	104.8	111.9	116.4	124.8	129.4	137.5	138.2	132.5	125.8	118.0
Chemical materials and products, n.e.s.	58	97.3	97.5	97.7	97.1	98.2	100.3	101.7	104.1	105.4	108.4	109.4
Intermediate manufactured products	6	104.2	106.4	107.9	110.3	111.2	114.4	117.7	119.6	120.6	122.6	123.1
Leather and furskins	61	107.8	123.6	126.9	128.7	118.0	125.7	125.1	128.6	125.0	118.3	120.7
Rubber manufactures	62	100.9	102.0	102.5	103.9	104.1	105.2	108.8	109.4	110.4	113.0	113.1
Paper and paperboard products	64	110.8	114.7	117.0	120.1	122.4	126.2	129.0	130.2	131.1	132.5	133.7
Textiles	65	101.8	103.3	103.7	104.1	105.2	106.5	107.9	108.6	111.6	113.9	115.2
Non-metallic mineral manufactures (9/85 = 100)	66	108.0	106.8	108.7	110.4	111.3	113.4	114.1	115.6	116.8	120.4	122.6
Iron and steel	67	101.9	102.9	102.9	100.7	102.9	106.1	110.8	111.4	112.1	116.0	116.7
Nonferrous metals	68	102.6	106.6	113.0	123.0	124.4	134.0	143.5	149.1	150.0	151.7	146.0
Metal manufactures, n.e.s.	69	100.8	101.5	101.3	102.3	103.4	104.5	107.6	109.9	110.9	112.6	114.0
Machinery and transport equipment, excluding military and commercial aircraft	7	101.6	101.7	101.8	102.1	102.4	103.2	104.0	104.8	105.8	106.7	107.2
Power generating machinery and equipment	71	103.7	104.6	103.7	104.8	105.2	107.0	108.4	108.5	109.3	111.8	112.3
Machinery specialized for particular industries	72	100.6	100.0	100.1	100.5	100.9	102.1	103.6	104.7	106.0	107.3	108.7
Metalworking machinery	73	104.2	105.8	106.7	107.8	108.2	109.3	110.8	111.0	114.4	115.7	117.4
General industrial machines and parts, n.e.s.	74	103.3	104.2	104.5	104.6	105.4	106.7	108.1	109.3	110.3	112.7	113.3
Office machines and automatic data processing equipment	75	98.2	96.0	96.1	95.7	95.5	95.8	95.7	96.8	96.4	95.8	94.9
Telecommunications, sound recording and reproducing equipment	76	101.3	101.9	101.4	101.4	101.9	102.8	104.6	104.1	105.1	106.7	107.9
Electrical machinery and equipment	77	100.3	101.7	102.1	102.5	101.8	103.1	103.4	105.3	105.7	106.1	106.4
Road vehicles and parts	78	103.3	103.1	103.5	103.8	104.6	104.5	104.9	105.4	106.8	107.2	107.8
Other transport equipment, excluding military and commercial aviation	79	103.5	104.5	105.5	105.8	106.6	107.4	109.6	109.7	111.9	113.5	114.9
Miscellaneous manufactured articles	8	103.8	104.6	105.2	105.4	105.6	106.9	108.1	108.9	110.5	111.4	112.9
Furniture and parts	82	103.5	106.7	107.6	107.6	110.0	111.2	111.4	111.7	114.2	114.3	118.1
Professional, scientific, and controlling instruments and apparatus	87	103.5	104.4	105.5	106.3	107.1	110.0	111.1	112.5	113.9	115.5	118.3
Photographic apparatus and supplies, optical goods, watches, and clocks	88	102.1	102.7	102.5	99.0	97.9	97.6	100.1	99.4	99.9	98.5	99.3
Miscellaneous manufactured articles, n.e.s.	89	104.9	105.2	104.8	105.9	105.8	105.4	106.5	106.5	108.7	110.2	110.0

– Data not available.

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

(1985 = 100, unless otherwise indicated)

Category	1974 SITC	1987			1988				1989	
		June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June
ALL COMMODITIES		110.0	110.9	112.5	113.8	116.8	115.3	117.6	119.7	120.7
ALL COMMODITIES, EXCLUDING FUELS		116.5	117.5	120.8	123.7	126.7	126.1	129.1	129.6	128.6
Food and live animals	0	108.3	109.1	112.5	114.1	114.0	112.7	114.3	114.1	111.4
Meat and meat preparations	01	108.0	114.4	113.4	111.5	107.0	111.2	108.7	111.2	109.3
Dairy products and eggs	02	122.3	121.7	125.1	125.6	125.0	122.2	125.8	124.0	120.1
Fish and crustaceans	03	126.0	130.4	131.0	132.5	129.3	125.9	126.7	127.0	123.0
Bakery goods, pasta products, grain, and grain preparations	04	126.2	124.8	130.7	135.8	139.8	136.9	142.2	140.4	140.1
Fruits and vegetables	05	110.1	110.0	116.2	115.4	120.3	123.7	127.7	123.4	123.3
Sugar, sugar preparations, and honey	06	109.6	109.0	107.0	109.6	110.0	112.1	110.8	109.8	111.8
Coffee, tea, cocoa	07	87.0	85.1	90.6	94.3	93.3	87.4	90.6	91.2	85.3
Beverages and tobacco	1	112.8	112.2	113.5	116.0	116.2	115.3	116.2	117.0	117.2
Beverages	11	114.2	114.8	116.2	118.7	120.0	118.9	119.9	120.7	120.7
Crude materials	2	116.2	120.3	122.1	129.2	137.8	135.4	143.2	146.2	144.2
Crude rubber (including synthetic and reclaimed)	23	103.7	110.7	120.1	121.7	151.1	133.3	121.5	123.0	103.4
Cork and wood	24	110.2	117.4	108.8	112.4	111.4	109.7	107.8	112.1	112.4
Pulp and waste paper	25	132.0	133.4	141.0	151.0	160.5	169.6	174.7	184.7	190.2
Textile fibers	26	118.4	128.1	135.2	137.8	145.5	141.9	145.6	151.5	145.3
Crude fertilizers and crude minerals	27	99.6	99.2	99.9	100.4	101.0	97.2	100.2	103.3	104.3
Metalliferous ores and metal scrap	28	124.5	128.7	137.9	151.2	167.6	172.2	205.4	204.3	212.3
Crude animal and vegetable materials, n.e.s.	29	109.0	107.6	118.3	135.8	148.2	122.0	139.5	138.5	110.1
Fuels and related products	3	74.1	74.3	67.2	60.6	63.4	57.7	56.4	66.8	78.8
Crude petroleum and petroleum products	33	74.4	75.2	67.8	60.4	63.6	57.7	56.1	67.3	80.3
Fats and oils	4	87.9	96.4	102.1	106.4	111.2	114.0	112.3	112.5	117.4
Fixed vegetable oils and fats (9/87 = 100)	42	–	100.0	105.7	111.1	116.1	119.2	117.4	117.3	122.6
Chemicals and related products	5	104.8	105.6	110.1	114.2	116.4	119.2	122.2	123.6	120.3
Organic chemicals	51	99.8	98.2	103.0	105.8	107.3	111.3	115.1	117.6	114.0
Inorganic chemicals	52	89.8	89.8	90.1	92.0	92.3	93.0	96.1	93.1	86.6
Medicinal and pharmaceutical products	54	123.4	124.3	126.3	135.3	140.3	145.4	146.4	154.9	153.5
Essential oils and perfumes	55	117.8	119.2	123.0	125.7	126.2	127.5	130.5	130.3	130.4
Manufactured fertilizers	56	94.6	109.3	133.6	133.7	136.3	136.5	139.9	143.5	142.1
Artificial resins and plastics and cellulose	58	114.7	114.4	117.6	121.6	124.3	127.6	129.5	129.5	129.8
Chemical materials and products, n.e.s.	59	117.7	120.6	124.8	138.7	148.5	153.4	156.5	154.8	149.8
Intermediate manufactured products	6	112.5	116.3	119.8	124.4	132.2	132.3	135.0	137.3	136.3
Leather and furskins	61	116.6	117.8	124.4	131.8	137.0	136.6	134.9	134.6	134.6
Rubber manufactures, n.e.s.	62	104.6	103.2	104.6	106.0	107.7	109.1	111.1	111.7	112.2
Cork and wood manufactures	63	124.3	128.3	128.2	133.8	138.2	136.1	134.1	136.9	139.8
Paper and paperboard products	64	104.9	110.3	112.3	117.2	118.3	119.5	119.9	120.6	120.9
Textiles	65	111.8	114.6	118.6	120.0	120.6	119.1	120.5	120.5	122.3
Nonmetallic mineral manufactures, n.e.s.	66	126.7	130.4	133.4	137.4	142.5	139.7	141.9	147.5	149.6
Iron and steel	67	106.6	109.4	114.0	120.0	127.2	129.9	130.7	132.6	133.9
Nonferrous metals	68	112.4	120.9	125.8	132.7	159.7	158.9	169.1	172.8	159.1
Metal manufactures	69	112.7	114.6	117.8	121.1	126.9	127.5	130.7	132.4	132.5
Machinery and transport equipment	7	119.9	119.9	123.1	125.4	127.3	126.7	129.9	130.1	129.3
Machinery (including SITC 71-77)	7hyb	119.1	118.7	122.6	124.6	126.4	125.9	128.7	129.2	128.4
Machinery specialized for particular industries	72	136.1	134.3	142.1	146.8	149.8	143.7	150.8	149.1	145.7
Metalworking machinery	73	128.1	130.2	135.5	139.9	142.4	139.7	144.1	142.9	139.7
General industrial machinery and parts, n.e.s.	74	130.8	130.1	137.0	140.4	143.7	139.6	144.2	144.7	143.0
Office machines and automatic data processing equipment	75	114.0	114.8	118.3	118.1	119.5	118.7	118.7	119.6	119.1
Telecommunications, sound recording and reproducing apparatus	76	110.3	110.2	112.1	112.8	113.8	113.9	115.5	115.7	115.5
Electrical machinery and equipment	77	115.8	115.1	118.2	122.2	124.2	125.9	129.3	130.5	129.8
Road vehicles and parts	78	120.5	120.6	122.6	125.5	127.6	127.1	130.8	130.5	129.7
Miscellaneous manufactured articles	8	117.8	118.5	121.8	124.2	125.7	124.2	126.6	126.6	126.7
Plumbing, heating, and lighting fixtures	81	117.0	116.2	121.0	123.4	126.9	124.5	127.2	130.0	131.5
Furniture and parts	82	119.8	119.0	124.3	125.4	129.6	128.0	129.1	127.2	128.0
Travel goods, handbags, and similar goods (6/85 = 100)	83	99.8	98.2	103.0	105.8	107.3	111.3	115.1	117.6	114.0
Clothing	84	109.2	111.9	112.3	115.6	114.9	116.7	117.2	118.5	120.5
Footwear	85	119.8	119.0	124.3	125.4	129.6	128.0	129.1	127.2	128.0
Professional, scientific, and controlling instruments and apparatus	87	135.9	132.7	138.7	140.0	142.5	135.8	141.9	141.1	136.9
Photographic apparatus and supplies, optical goods, watches, and clocks	88	126.0	122.1	127.3	129.2	129.3	125.4	130.6	130.2	127.9
Miscellaneous manufactured articles, n.e.s.	89	121.1	122.3	127.3	129.2	132.1	128.2	131.4	131.7	131.4

– Data not available.

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

(1985 = 100 unless otherwise indicated)

Category	1987			1988				1989	
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June
Foods, feeds, and beverages	91.5	88.0	96.6	98.5	110.1	124.5	117.4	120.8	117.2
Industrial supplies and materials	106.1	109.1	111.8	114.2	118.3	118.7	118.6	120.7	120.7
Capital goods	101.6	101.8	102.1	103.4	104.3	104.9	105.7	106.7	107.4
Automotive	103.6	104.0	104.5	104.3	104.8	106.5	107.7	108.1	108.6
Consumer goods	106.3	106.9	108.0	110.1	110.6	111.3	112.9	115.3	115.6
Consumer nondurables, manufactured, except rugs	104.3	104.6	106.3	107.4	108.7	109.3	110.0	111.4	111.6
Consumer durables, manufactured	106.6	107.3	107.9	110.4	110.4	110.7	112.6	115.4	115.3
Agricultural (9/88=100)	95.0	92.1	99.3	101.1	110.9	120.6	114.0	117.7	116.0
All exports, excluding agricultural (9/88=100)	103.6	104.9	106.2	107.7	109.7	110.8	111.6	112.9	113.1

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

(1985=100)

Category	1987			1988				1989	
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June
All imports, excluding petroleum (6/88=100)	116.1	117.0	120.3	123.2	126.2	125.4	128.3	129.0	128.0
Foods, feeds, and beverages	107.8	109.0	112.1	113.7	113.7	112.7	114.2	113.8	111.7
Industrial supplies and materials	93.5	95.3	93.7	92.7	97.8	95.2	96.4	102.1	106.8
Petroleum and petroleum products, excluding natural gas	74.1	74.7	67.6	60.3	63.5	57.5	56.2	67.2	79.7
Industrial supplies and materials, excluding petroleum	109.7	112.6	115.6	119.6	126.4	126.4	129.6	131.2	129.4
Capital goods, except automotive	122.2	121.9	126.6	128.6	131.0	129.0	132.3	132.4	131.0
Automotive vehicles, parts and engines	118.4	118.4	120.6	123.7	125.8	126.0	129.2	129.1	128.3
Consumer goods except automotive	116.9	118.2	121.4	124.2	126.3	125.0	127.4	128.7	129.3
Nondurables, manufactured	115.0	116.8	120.2	123.3	124.2	123.8	125.4	126.5	127.9
Durables, manufactured	117.7	117.9	121.0	123.5	125.5	124.5	127.4	127.9	127.9

42. U.S. export price indexes by Standard Industrial Classification [1]

(1985=100)

Industry group	1987			1988				1989	
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June
Manufacturing:									
Food and kindred products	107.4	107.1	116.3	120.8	125.1	128.9	123.5	124.5	122.8
Lumber and wood products, except furniture	116.2	138.9	142.5	146.1	145.4	146.1	144.0	151.7	164.8
Furniture and fixtures	108.6	108.7	111.2	112.5	112.9	112.9	115.3	115.2	116.0
Paper and allied products	112.3	115.5	119.3	124.6	129.8	133.1	135.6	139.9	141.4
Chemicals and allied products	107.6	108.7	113.8	118.4	122.3	125.4	125.5	125.9	122.3
Petroleum and coal products	80.5	81.4	78.8	73.0	77.8	73.7	75.4	79.8	86.5
Primary metal products	117.2	122.3	126.6	126.9	133.8	133.5	133.6	130.8	125.7
Machinery, except electrical	99.4	99.4	99.7	100.6	101.3	102.2	102.8	103.4	103.6
Electrical machinery	102.1	102.5	102.2	102.9	103.7	104.9	105.4	106.3	106.8
Transportation equipment	106.7	106.9	107.8	108.1	109.1	109.4	110.9	111.8	112.7
Scientific instruments; optical goods; clocks	106.8	106.6	107.1	109.2	110.8	112.0	113.4	114.5	116.7

[1] SIC-based classification.

43. U.S. import price indexes by Standard Industrial Classification [1]

(1985=100)

Industry group	1987 June	1987 Sept.	1987 Dec.	1988 Mar.	1988 June	1988 Sept.	1988 Dec.	1989 Mar.	1989 June
Manufacturing:									
Food and kindred products	106.3	108.4	110.6	114.0	114.4	115.0	115.4	114.9	113.9
Textile mill products	116.1	119.4	124.3	127.4	128.9	127.0	127.8	139.0	139.3
Apparel and related products	109.4	112.3	113.4	116.6	115.8	117.0	117.5	118.9	121.0
Lumber and wood products, except furniture	115.0	120.3	115.4	119.5	120.3	118.6	117.0	120.5	122.2
Furniture and fixtures	117.0	118.3	118.9	122.2	124.0	124.8	128.0	126.3	126.0
Paper and allied products	105.9	110.9	113.6	119.1	121.3	123.8	125.2	127.4	128.3
Chemicals and allied products	106.2	107.2	112.2	116.8	121.3	123.5	130.6	130.7	130.0
Petroleum refining and allied products	136.4	138.4	127.4	114.5	119.2	110.8	111.6	121.3	139.8
Rubber and miscellaneous plastics products	113.6	112.3	115.7	117.2	119.0	117.7	122.6	122.3	122.6
Leather and leather products	113.3	113.3	118.4	120.8	124.6	123.7	124.0	122.8	123.6
Stone, clay, glass, and concrete products	130.0	129.6	133.9	138.2	141.5	140.5	144.3	145.1	144.8
Primary metal products	110.4	115.2	120.0	122.6	137.0	136.2	140.2	140.6	135.6
Fabricated metal products	117.5	119.8	123.2	127.3	133.3	133.0	136.3	138.9	140.1
Machinery, except electrical	127.4	127.8	133.9	135.9	138.2	135.0	138.4	138.6	136.5
Electrical machinery and supplies	110.7	110.2	112.5	114.7	116.1	116.7	119.0	119.7	119.4
Transportation equipment	122.1	122.5	124.6	127.3	129.5	129.3	132.8	132.6	132.0
Scientific instruments; optical goods; clocks	132.5	128.8	134.0	135.8	137.0	132.2	137.7	136.7	133.9
Miscellaneous manufactured commodities	118.1	121.4	123.8	127.7	133.1	130.6	132.2	136.6	137.9

[1] SIC - based classification.

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

(1977=100)

Item	1986 IV	1987 I	1987 II	1987 III	1987 IV	1988 I	1988 II	1988 III	1988 IV	1989 I	1989 II
Business:											
Output per hour of all persons	109.8	109.9	110.7	111.7	112.5	113.3	112.7	113.6	113.6	113.9	114.3
Compensation per hour	187.4	188.2	189.5	191.8	195.2	196.5	199.3	202.2	204.8	207.2	210.6
Real compensation per hour	102.8	101.9	101.4	101.7	102.6	102.3	102.7	102.9	103.1	103.0	103.1
Unit labor costs	170.6	171.2	171.3	171.6	173.5	173.5	176.9	178.1	180.2	181.9	184.3
Unit nonlabor payments	160.7	162.6	166.5	168.9	167.2	168.9	168.8	171.7	173.6	174.7	175.9
Implicit price deflator	167.1	168.2	169.6	170.7	171.3	171.9	174.1	175.8	177.9	179.4	181.4
Nonfarm business:											
Output per hour of all persons	107.6	107.7	108.6	109.5	110.3	111.1	110.7	111.6	112.1	111.8	112.0
Compensation per hour	186.4	187.0	188.3	190.5	193.9	195.1	197.8	200.5	203.3	205.7	208.6
Real compensation per hour	102.2	101.3	100.7	101.0	101.9	101.6	101.9	102.1	102.4	102.3	102.1
Unit labor costs	173.2	173.6	173.4	173.9	175.8	175.7	178.7	179.6	181.3	184.1	186.3
Unit nonlabor payments	161.6	164.1	167.6	170.3	168.7	170.2	169.8	172.0	176.2	174.6	176.2
Implicit price deflator	169.2	170.3	171.4	172.6	173.4	173.8	175.6	177.0	179.6	180.8	182.8
Nonfinancial corporations:											
Output per hour of all employees	110.6	110.4	111.6	113.0	113.6	114.8	115.0	115.4	115.3	114.7	114.7
Compensation per hour	183.0	183.6	184.7	186.9	189.7	191.2	193.6	196.0	198.3	200.7	203.3
Real compensation per hour	100.4	99.4	98.8	99.1	99.6	99.6	99.7	99.8	99.9	99.7	99.5
Total unit costs	170.1	171.0	170.8	170.8	172.1	171.9	173.6	175.2	177.5	180.4	183.5
Unit labor costs	165.4	166.3	165.5	165.3	167.0	166.6	168.4	169.9	172.1	174.9	177.3
Unit nonlabor costs	183.7	185.0	186.3	186.9	187.2	187.8	188.9	191.0	193.3	196.9	202.1
Unit profits	120.4	118.1	122.5	129.3	122.0	127.0	129.1	127.5	131.6	119.6	112.0
Unit nonlabor payments	161.5	161.6	163.9	166.7	164.4	166.5	168.0	168.8	171.7	169.8	170.5
Implicit price deflator	164.1	164.7	165.0	165.8	166.1	166.5	168.2	169.5	172.0	173.1	175.0
Manufacturing:											
Output per hour of all persons	130.1	131.3	133.1	134.3	135.1	136.3	137.5	139.2	140.0	140.7	141.7
Compensation per hour	187.8	188.5	188.7	190.4	192.2	195.5	197.1	199.5	202.3	203.9	205.1
Real compensation per hour	103.0	102.0	101.0	100.9	101.0	101.8	101.5	101.5	101.9	101.3	100.4
Unit labor costs	144.3	143.5	141.8	141.8	142.3	143.5	143.3	143.2	144.5	144.8	144.7

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

(1977 = 100)

Item	1960	1970	1973	1977	1979	1981	1982	1983	1984	1985	1986	1987
Private business												
Productivity:												
Output per hour of all persons	67.3	88.4	95.9	100.0	99.5	100.6	100.3	103.0	105.6	107.9	110.3	111.2
Output per unit of capital services	103.7	102.7	105.6	100.0	99.7	92.3	86.6	88.3	92.7	92.9	93.0	93.7
Multifactor productivity	78.5	93.1	99.2	100.0	99.6	97.6	95.2	97.6	100.9	102.4	103.9	104.7
Output	55.3	80.2	93.0	100.0	107.9	108.9	105.4	109.9	119.2	124.3	128.7	133.4
Inputs:												
Hours of all persons	82.2	90.8	96.9	100.0	108.4	108.2	105.2	106.7	112.9	115.2	116.7	120.0
Capital services	53.3	78.1	88.0	100.0	108.2	117.9	121.8	124.4	128.6	133.8	138.5	142.4
Combined units of labor and capital input	70.5	86.1	93.7	100.0	108.3	111.5	110.7	112.6	118.1	121.4	123.9	127.4
Capital per hour of all persons	64.9	86.1	90.8	100.0	99.8	108.9	115.8	116.6	113.9	116.1	118.7	118.6
Private nonfarm business												
Productivity:												
Output per hour of all persons	70.7	89.2	96.4	100.0	99.2	99.6	99.1	102.5	104.7	106.2	108.3	109.1
Output per unit of capital services	104.9	103.5	106.3	100.0	98.9	91.0	85.1	87.3	91.3	91.0	90.8	91.5
Multifactor productivity	81.2	93.8	99.7	100.0	99.1	96.7	94.1	97.0	99.9	100.7	102.0	102.7
Output	54.4	79.9	92.9	100.0	107.9	108.4	104.8	110.1	119.3	124.0	128.3	133.2
Inputs:												
Hours of all persons	77.0	89.6	96.3	100.0	108.8	108.8	105.7	107.4	114.0	116.8	118.5	122.0
Capital services	51.9	77.2	87.3	100.0	109.1	119.1	123.3	126.1	130.6	136.3	141.3	145.5
Combined units of labor and capital input	67.1	85.2	93.2	100.0	108.9	112.2	111.4	113.5	119.4	123.1	125.8	129.6
Capital per hour of all persons	67.4	86.2	90.7	100.0	100.3	109.4	116.6	117.4	114.6	116.7	119.3	119.2
Manufacturing												
Productivity:												
Output per hour of all persons	62.2	80.8	93.4	100.0	101.4	103.6	105.9	112.0	118.1	123.6	127.7	131.9
Output per unit of capital services	103.0	99.1	112.0	100.0	99.5	89.0	81.6	86.7	95.5	97.3	98.4	102.0
Multifactor productivity	72.0	85.3	98.0	100.0	100.9	99.7	99.2	105.0	112.1	116.4	119.5	123.6
Output	52.5	78.6	96.3	100.0	108.1	104.8	98.4	104.7	117.5	122.0	124.7	130.1
Inputs:												
Hours of all persons	84.4	97.3	103.1	100.0	106.5	101.1	92.9	93.5	99.5	98.7	97.7	98.6
Capital services	51.0	79.3	86.0	100.0	108.6	117.8	120.5	120.8	123.0	125.4	126.8	127.6
Combined units of labor and capital inputs	72.9	92.1	98.3	100.0	107.1	105.1	99.2	99.7	104.8	104.8	104.4	105.3
Capital per hour of all persons	60.4	81.5	83.4	100.0	101.9	116.5	129.8	129.3	123.7	127.1	129.8	129.4

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

(1977 = 100)

Item	1960	1970	1973	1977	1979	1981	1982	1983	1984	1985	1986	1987	1988
Business:													
Output per hour of all persons	66.1	87.6	95.2	100.0	99.7	101.0	100.2	102.6	105.2	107.3	109.8	111.1	113.1
Compensation per hour	32.9	57.2	70.3	100.0	119.3	144.1	154.9	160.8	167.4	174.8	183.8	191.0	200.4
Real compensation per hour	67.3	89.4	96.0	100.0	99.5	96.1	97.3	97.8	97.6	98.4	101.7	101.9	102.7
Unit labor costs	49.7	65.3	73.8	100.0	119.6	142.7	154.5	156.7	159.1	162.8	167.5	171.9	177.2
Unit nonlabor payments	46.4	59.4	72.6	100.0	112.3	134.4	136.3	146.2	156.4	160.9	162.1	166.3	170.8
Implicit price deflator	48.5	63.2	73.4	100.0	117.0	139.8	148.1	153.0	158.2	162.2	165.6	170.0	174.9
Nonfarm business:													
Output per hour of all persons	69.5	88.4	95.8	100.0	99.4	100.0	99.1	102.0	104.2	105.6	107.7	108.9	111.2
Compensation per hour	34.5	57.6	70.7	100.0	119.0	144.0	154.7	160.8	167.2	174.0	182.9	189.8	198.9
Real compensation per hour	70.7	90.0	96.4	100.0	99.3	96.0	97.1	97.8	97.5	98.0	101.1	101.2	101.9
Unit labor costs	49.7	65.2	73.8	100.0	119.8	144.0	156.1	157.6	160.4	164.9	169.8	174.2	178.8
Unit nonlabor payments	46.3	60.0	69.4	100.0	110.3	133.2	136.1	148.1	156.3	161.9	163.3	167.7	172.2
Implicit price deflator	48.5	63.4	72.3	100.0	116.5	140.3	149.2	154.3	159.0	163.8	167.6	172.0	176.5
Nonfinancial corporations:													
Output per hour of all employees	71.9	90.2	96.8	100.0	99.9	99.9	100.2	103.0	105.5	107.2	109.6	112.1	114.9
Compensation per hour	36.1	58.6	71.0	100.0	118.9	143.7	154.1	159.1	165.0	171.6	179.9	186.1	194.5
Real compensation per hour	74.0	91.6	96.9	100.0	99.3	95.8	96.8	96.8	96.3	96.7	99.5	99.3	99.7
Total unit costs	49.4	64.8	72.7	100.0	118.2	147.7	159.5	159.5	160.8	164.1	168.5	171.2	174.6
Unit labor costs	50.2	65.0	73.4	100.0	119.0	143.8	153.8	154.5	156.5	160.2	164.1	166.1	169.3
Unit nonlabor costs	47.0	64.2	70.7	100.0	115.8	159.1	176.4	174.3	173.6	175.8	181.7	186.4	190.3
Unit profits	59.8	52.3	65.6	100.0	94.5	98.1	78.5	110.9	136.5	133.0	123.1	123.0	128.8
Unit nonlabor payments	51.5	60.1	68.9	100.0	108.4	137.8	142.1	152.1	160.6	160.8	161.2	164.2	168.8
Implicit price deflator	50.7	63.3	71.9	100.0	115.4	141.7	149.8	153.7	157.9	160.4	163.1	165.4	169.1
Manufacturing:													
Output per hour of all persons	60.7	80.2	92.6	100.0	101.6	104.0	106.6	112.2	118.2	123.5	128.2	132.9	137.7
Compensation per hour	35.6	57.0	68.2	100.0	118.9	145.7	158.7	162.7	168.1	176.3	184.3	189.2	197.8
Real compensation per hour	73.0	89.0	93.1	100.0	99.2	97.1	99.6	99.0	98.1	99.3	101.9	100.9	101.3
Unit labor costs	58.7	71.0	73.7	100.0	117.0	140.1	148.8	145.1	142.3	142.7	143.8	142.3	143.6
Unit nonlabor payments	60.0	64.1	70.8	100.0	98.9	111.7	113.7	128.3	138.5	130.3	135.2	137.6	–
Implicit price deflator	59.1	69.0	72.8	100.0	111.7	131.8	138.6	140.2	141.2	139.1	141.3	141.0	–

– Data not available.

47. Annual productivity indexes for selected industries

(1977=100)

Industry	SIC	1970	1973	1975	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Iron mining, crude ore	1011	99.9	113.2	112.7	122.7	124.7	132.8	100.9	139.0	173.3	187.9	200.3	267.5	–
Iron mining, usable ore	1011	111.1	122.6	117.8	122.8	123.2	130.6	98.2	138.6	171.7	187.9	197.8	262.0	–
Copper mining, crude ore	1021	84.8	92.0	87.2	109.1	99.5	102.0	106.4	129.9	140.3	164.2	195.4	193.1	–
Copper mining, recoverable metal	1021	85.5	85.8	77.2	98.2	91.6	97.7	116.2	130.9	155.4	193.1	228.9	209.8	–
Coal mining	111,121	141.1	125.5	105.3	99.4	112.5	122.2	119.2	136.1	151.3	154.0	167.3	179.7	–
Bituminous coal and lignite mining	121	142.3	126.3	105.2	99.6	112.6	122.7	120.0	136.9	152.3	154.6	168.2	180.6	–
Nonmetallic minerals, except fuels	14	89.7	97.2	90.6	102.7	96.5	94.7	89.3	98.2	105.5	107.5	108.2	107.9	–
Crushed and broken stone	142	83.1	94.0	91.4	106.9	101.3	96.7	94.1	103.9	105.8	104.5	104.9	102.7	–
Meatpacking plants	2011	78.7	88.7	88.6	104.6	108.9	113.9	119.5	123.4	125.6	130.1	126.2	124.1	–
Flour and other grain mill products	2041	76.6	80.4	85.8	97.3	94.8	96.7	104.1	110.4	114.9	122.9	130.6	129.0	–
Rice milling	2044	82.0	81.5	90.4	96.3	111.8	117.9	104.5	103.3	93.2	103.2	112.6	118.4	–
Raw and refined cane sugar	2061,62	86.1	93.4	90.8	101.5	99.3	98.8	87.6	100.0	94.7	108.7	109.6	118.5	–
Beet sugar	2063	92.9	100.0	98.1	104.6	102.1	98.7	94.8	94.5	108.8	100.7	111.8	142.6	–
Malt beverages	2082	56.7	73.7	86.1	109.9	116.0	118.3	122.6	131.3	137.9	130.3	152.3	154.8	–
Bottled and canned soft drinks	2086	70.0	79.0	89.5	103.4	106.9	110.6	114.1	121.5	131.0	136.7	146.6	157.3	–
Cigarettes, chewing and smoking tobacco	2111,31	85.3	88.7	93.3	102.4	101.8	99.6	99.5	104.1	107.2	111.7	115.5	121.2	–
Cigars	2121	88.4	89.5	93.7	101.4	106.4	107.3	111.4	112.3	141.4	129.3	133.1	111.1	–
Hosiery	2251,52	65.5	74.6	94.3	107.9	107.4	122.0	114.2	118.0	119.9	118.5	121.0	121.1	–
Nonwool yarn mills	2281	84.3	85.0	101.2	103.8	99.7	103.1	118.2	128.5	129.6	134.5	141.1	142.8	–
Sawmills and planing mills, general	2421	90.0	100.2	98.8	106.3	104.2	107.9	115.1	126.8	132.3	139.2	155.1	151.6	–
Household furniture	251	82.2	97.3	97.5	101.5	99.9	103.0	104.7	110.1	112.2	112.5	118.5	115.9	–
Paper, paperboard, and pulp mills	2611,21,31,61	77.5	91.5	86.7	105.4	105.2	104.4	111.3	119.5	121.0	123.1	133.5	141.8	–
Folding paperboard boxes	2651	77.4	92.8	98.5	104.6	101.6	104.5	104.2	104.5	102.4	99.6	101.4	98.1	–
Corrugated and solid fiber boxes	2653	73.1	86.1	96.2	106.9	111.0	109.8	111.9	114.0	118.9	122.5	126.7	128.9	–
Synthetic fibers	2823,24	53.8	79.5	84.5	115.0	115.7	120.9	103.6	126.2	125.3	135.8	146.2	155.7	–
Pharmaceutical preparations	2834	74.8	84.8	92.5	105.3	106.0	104.2	107.0	114.3	116.4	118.1	121.8	124.0	–
Paints and allied products	2851	74.9	82.2	94.2	104.8	100.8	99.8	106.5	113.8	121.5	125.6	125.2	128.5	–
Petroleum refining	2911	73.8	93.6	88.7	94.9	94.2	83.7	79.4	81.8	92.5	102.6	113.8	118.8	–
Tires and inner tubes	3011	87.6	95.1	91.8	107.3	102.4	118.1	128.2	136.1	146.8	146.7	151.4	167.8	–
Footwear	314	100.3	98.5	101.3	100.2	99.1	95.6	106.4	103.9	105.7	107.3	109.5	104.5	–
Glass containers	3221	87.2	92.6	98.5	102.4	105.2	110.1	105.8	108.5	128.0	127.0	138.9	143.0	–
Hydraulic cement	3241	84.8	99.7	84.7	96.0	87.0	91.1	94.0	108.4	125.3	128.3	135.5	142.2	–
Structural clay products	325	78.2	91.1	91.0	95.9	97.6	100.7	102.6	105.4	111.3	112.8	115.6	118.7	–
Clay construction products	3251,53,59	77.4	90.6	89.1	91.6	94.0	97.3	103.3	101.1	110.4	112.6	114.5	116.2	–
Brick and structural clay tile	3251	81.1	90.1	93.1	85.4	84.9	84.3	88.6	85.7	93.4	100.4	98.9	102.9	–
Clay refractories	3255	82.1	93.6	95.5	110.2	109.6	111.1	100.0	121.6	115.1	114.1	122.9	131.4	–
Steel	331	87.6	106.6	93.3	106.9	102.9	112.0	90.9	116.8	131.3	139.5	141.8	151.7	–
Gray iron foundries	3321	79.8	94.5	97.0	96.8	90.8	92.7	93.7	98.3	106.8	104.2	107.4	104.8	–
Steel foundries	3324,25	90.6	101.9	107.5	100.6	99.8	91.6	89.0	89.9	98.8	95.6	100.3	94.3	–
Primary copper, lead, and zinc	3331,32,33	78.1	94.8	85.3	106.5	103.7	118.6	128.0	141.2	148.0	181.5	210.8	221.1	–
Primary copper	3331	79.8	90.6	83.0	113.3	105.3	124.4	128.5	138.3	151.9	189.8	229.2	228.2	–
Primary aluminum	3334	92.5	99.4	96.2	99.7	100.0	103.8	103.0	111.5	125.4	125.4	134.0	143.5	–
Copper rolling and drawing	3351	76.8	93.2	76.8	98.1	94.1	97.9	106.0	121.1	128.1	122.0	127.2	139.8	–
Aluminum rolling and drawing	3353,54,55	66.0	94.0	87.5	100.3	100.0	96.8	99.2	110.4	116.2	115.9	125.0	141.6	–
Metal cans	3411	78.8	81.6	87.0	103.6	102.6	108.1	118.5	120.5	123.0	125.6	126.0	134.3	–
Farm machinery and equipment	3523	–	95.6	98.8	98.3	91.3	94.1	92.6	92.0	104.6	98.6	95.5	–	–
Lawn and garden equipment	3524	–	89.8	89.6	113.5	106.5	101.0	106.9	111.8	111.3	115.7	132.1	–	–
Construction machinery and equipment	3531	83.4	94.0	93.9	100.3	97.4	96.1	88.9	88.2	102.6	104.1	107.1	99.3	–
Metal cutting machine tools	3541	89.5	105.5	102.9	103.0	100.6	98.9	89.2	81.1	93.3	96.4	105.1	100.2	–
Metal forming machine tools	3542	98.5	114.1	104.0	99.2	93.5	89.4	85.0	87.6	93.7	96.6	97.1	104.6	–
Ball and roller bearings	3562	85.5	103.1	97.5	105.8	95.4	94.3	83.3	86.3	94.4	92.1	95.6	101.2	–
Transformers	3612	89.1	96.9	89.3	108.4	110.6	106.9	99.6	99.1	97.6	99.3	99.4	94.6	–
Switchgear and switchboard apparatus	3613	83.3	101.5	93.4	102.8	103.2	99.5	101.3	106.1	107.4	110.6	110.7	109.3	–
Motors and generators	3621	87.8	100.7	93.0	99.3	96.7	100.4	102.4	104.3	107.9	110.5	112.3	115.9	–
Household cooking equipment	3631	68.7	84.9	97.8	108.9	103.9	105.7	112.6	120.8	131.9	135.6	158.4	168.1	–
Household refrigerators and freezers	3632	71.7	95.6	94.5	112.3	114.4	117.4	116.1	127.1	127.5	136.8	133.5	131.6	–
Household laundry equipment	3633	70.7	88.5	93.6	108.1	102.1	103.9	105.4	112.2	117.5	118.2	123.1	133.0	–
Household appliances, not elsewhere classified	3639	70.4	85.2	88.8	102.6	99.1	100.4	94.7	103.7	109.8	110.0	113.1	117.3	–
Electric lamps	3641	88.3	90.1	96.4	105.2	103.2	106.9	108.4	124.8	131.9	126.9	131.1	146.9	–
Lighting fixtures	3645,46,47,48	78.1	93.8	89.2	94.6	93.3	88.7	91.0	96.3	102.2	107.0	113.8	116.5	–
Motor vehicles and equipment	371	70.5	85.7	87.7	97.8	90.8	93.1	96.9	109.6	115.7	121.2	121.7	125.2	–
Railroad transportation, revenue traffic	401	77.7	96.4	89.5	104.7	107.3	111.5	115.8	141.9	152.6	162.1	178.6	208.3	–
Railroad transportation, car miles	401	89.1	101.4	98.3	102.9	107.9	107.6	110.1	128.9	137.7	138.9	148.2	166.8	–
Petroleum pipelines	4612,13	79.5	97.8	95.7	101.7	93.0	86.0	89.2	94.3	104.5	104.9	107.0	106.6	–
Telephone communications	4811	62.1	74.6	85.9	110.8	118.1	124.4	129.1	145.1	143.0	149.8	161.3	166.1	–
Electric utilities	491,93 pt.	77.1	88.4	92.9	95.4	94.0	93.0	89.5	90.9	94.4	93.5	96.2	101.0	–
Gas utilities	492,93 pt.	102.1	104.5	101.4	103.4	102.1	98.1	89.0	81.1	83.6	82.1	73.0	74.8	–
Retail food stores	54	107.0	102.3	98.8	98.3	100.3	97.1	95.5	95.5	96.1	96.6	94.6	92.8	–
Franchised new car dealers	5511	86.1	96.3	95.0	97.7	99.6	98.1	100.4	109.4	110.4	109.7	110.7	105.3	–
Gasoline service stations	5541	74.6	86.2	85.3	107.4	105.1	106.7	111.8	122.5	129.1	134.3	143.9	145.7	–
Apparel and accessory stores	56	81.3	99.5	105.0	112.9	117.9	123.9	126.4	132.9	141.0	146.5	153.7	146.4	–
Men's and boys clothing stores	5611	82.7	103.4	102.3	108.6	107.1	116.4	116.6	120.6	127.4	135.0	139.5	135.0	–
Women's ready-to-wear stores	5621	76.5	94.2	106.5	116.0	117.9	127.8	142.0	151.3	158.3	162.8	176.4	171.9	–

See footnotes at end of table.

47. Continued—Annual productivity indexes for selected industries

(1977 = 100)

Industry	SIC	1970	1973	1975	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Family clothing stores	5651	75.2	109.1	109.5	108.2	123.7	132.4	140.7	149.2	145.8	138.5	136.0	130.9	–
Shoe stores	5661	95.3	100.5	95.1	112.8	110.3	114.2	110.2	107.6	110.1	117.4	125.8	124.0	–
Furniture, furnishings, and equipment stores	57	80.1	95.3	91.9	107.6	107.4	112.6	109.2	118.4	129.4	133.5	144.6	145.2	–
Furniture and home furnishings stores	571	79.3	96.3	90.1	104.8	98.0	101.2	97.6	104.1	113.1	108.7	115.5	116.0	–
Appliance, radio, television, and music stores	572,73	81.2	94.1	94.8	112.4	124.0	132.4	128.7	143.4	155.1	180.0	199.5	199.8	–
Eating and drinking places	58	100.6	103.4	100.8	99.5	99.8	97.3	96.9	95.3	91.1	87.9	89.7	90.4	–
Drug and proprietary stores	5912	83.4	97.1	94.2	103.8	107.0	107.6	107.9	111.4	106.2	106.5	105.6	105.9	–
Liquor stores	5921	–	100.9	96.3	96.6	102.2	104.0	108.1	101.6	98.7	107.1	98.0	91.6	–
Hotels, motels, and tourist courts	7011	85.1	92.1	89.7	100.0	95.0	91.6	88.8	95.4	102.1	97.5	92.8	88.0	–
Laundry and cleaning services	721	94.7	98.6	96.6	97.7	91.0	88.4	90.6	90.4	92.3	87.3	85.0	84.0	–
Beauty and barber shops	723,24	–	100.7	98.7	107.4	102.9	109.2	108.3	114.0	103.9	98.6	97.3	99.2	–
Beauty shops	723	–	100.7	98.7	107.4	102.9	109.2	108.3	114.0	103.9	98.6	97.3	99.2	–

– Data not available.

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

Country	Annual average		1987	1988				1989	
	1987	1988	IV	I	II	III	IV	I	II
Total labor force basis									
United States	6.1	5.4	5.8	5.6	5.4	5.4	5.3	5.1	5.2
Canada	8.8	7.7	8.1	7.8	7.6	7.8	7.7	7.5	7.6
Australia	8.0	7.2	7.9	7.5	7.4	6.9	6.8	6.6	6.1
Japan	2.9	2.5	2.7	2.7	2.5	2.6	2.4	2.4	2.3
France	10.5	10.3	10.3	10.3	10.3	10.4	10.2	10.2	10.1
Germany	6.3	6.3	6.3	6.3	6.3	6.3	6.1	5.8	5.7
Italy [1], [2]	7.7	7.8	7.9	7.8	7.8	7.8	7.8	7.6	7.8
Sweden	1.9	1.6	1.7	1.7	1.6	1.6	1.4	1.4	1.3
United Kingdom	10.2	8.2	9.4	9.0	8.6	8.0	7.5	7.0	6.5
Civilian labor force basis									
United States	6.2	5.5	5.9	5.7	5.5	5.5	5.3	5.2	5.3
Canada	8.8	7.8	8.1	7.8	7.7	7.8	7.7	7.6	7.6
Australia	8.1	7.2	8.0	7.6	7.5	7.0	6.8	6.6	6.1
Japan	2.9	2.5	2.7	2.7	2.5	2.6	2.4	2.4	2.3
France	10.8	10.5	10.6	10.6	10.5	10.6	10.4	10.4	10.4
Germany	6.4	6.4	6.4	6.4	6.4	6.4	6.3	5.9	5.8
Italy[1], [2]	7.9	7.9	8.1	7.9	7.9	8.0	7.9	7.7	8.0
Sweden	1.9	1.6	1.7	1.7	1.6	1.6	1.4	1.4	1.3
United Kingdom	10.2	8.3	9.5	9.0	8.6	8.0	7.6	7.0	6.6

[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.

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.

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

(Numbers in thousands)

Employment status and country	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Labor force										
United States	104,962	106,940	108,670	110,204	111,550	113,544	115,461	117,834	119,865	121,669
Canada	11,231	11,573	11,899	11,926	12,109	12,316	12,532	12,746	13,011	13,275
Australia	6,519	6,693	6,810	6,910	6,997	7,135	7,300	7,588	7,758	7,974
Japan	55,210	55,740	56,320	56,980	58,110	58,480	58,820	59,410	60,050	60,860
France	22,660	22,800	22,950	23,160	23,140	23,300	23,360	23,440	23,520	23,620
Germany	26,250	26,520	26,650	26,700	26,650	26,760	26,970	27,090	28,360	28,550
Italy	20,850	21,120	21,320	21,410	21,590	21,670	21,800	22,290	22,350	22,660
Netherlands	5,630	5,860	6,080	6,140	6,170	6,260	6,280	6,370	6,490	6,560
Sweden	4,262	4,312	4,327	4,350	4,369	4,385	4,418	4,443	4,480	4,530
United Kingdom	26,350	26,520	26,590	26,720	26,750	27,170	27,370	27,540	27,860	28,110
Participation rate[1]										
United States	63.7	63.8	63.9	64.0	64.0	64.4	64.8	65.3	65.6	65.9
Canada	63.4	64.1	64.8	64.1	64.4	64.8	65.3	65.7	66.2	66.7
Australia	61.6	62.1	61.9	61.7	61.4	61.5	61.8	63.0	63.0	63.3
Japan	62.7	62.6	62.6	62.7	63.1	62.7	62.3	62.1	61.9	61.9
France	57.5	57.2	57.1	57.1	56.6	56.6	56.3	56.1	55.8	55.7
Germany	53.3	53.2	52.9	52.6	52.3	52.4	52.6	52.6	55.0	55.2
Italy	48.0	48.2	48.3	47.7	47.5	47.3	47.2	47.8	47.9	48.4
Netherlands	54.1	55.3	56.6	56.5	56.1	56.2	55.7	55.9	56.3	56.4
Sweden	66.6	66.9	66.8	66.8	66.7	66.6	66.9	67.0	67.3	67.8
United Kingdom	62.6	62.5	62.2	62.2	61.9	62.5	62.6	62.6	63.0	63.3
Employed										
United States	98,824	99,303	100,397	99,526	100,834	105,005	107,150	109,597	112,440	114,968
Canada	10,395	10,708	11,001	10,618	10,675	10,932	11,221	11,531	11,861	12,244
Australia	6,111	6,284	6,416	6,415	6,300	6,494	6,697	6,974	7,129	7,398
Japan	54,040	54,600	55,060	55,620	56,550	56,870	57,260	57,740	58,320	59,310
France	21,300	21,330	21,200	21,240	21,170	20,980	20,920	20,950	20,990	21,130
Germany	25,470	25,750	25,560	25,140	24,750	24,790	24,960	25,230	26,550	26,730
Italy	19,930	20,200	20,280	20,250	20,320	20,390	20,490	20,610	20,590	20,870
Netherlands	5,340	5,510	5,540	5,510	5,410	5,490	5,640	5,730	5,840	5,900
Sweden	4,174	4,226	4,219	4,213	4,218	4,249	4,293	4,326	4,396	4,458
United Kingdom	24,940	24,670	23,800	23,720	23,610	23,990	24,310	24,460	25,010	25,780
Employment-population ratio[2]										
United States	59.9	59.2	59.0	57.8	57.9	59.5	60.1	60.7	61.5	62.3
Canada	58.7	59.3	59.9	57.1	56.8	57.5	58.5	59.4	60.4	61.6
Australia	57.8	58.3	58.4	57.3	55.3	56.0	56.6	57.9	57.9	58.7
Japan	61.4	61.3	61.2	61.2	61.4	61.0	60.6	60.4	60.1	60.4
France	54.0	53.5	52.8	52.3	51.8	51.0	50.4	50.2	49.8	49.8
Germany	51.7	51.7	50.8	49.6	48.6	48.5	48.7	49.0	51.5	51.7
Italy	45.9	46.1	45.9	45.2	44.7	44.5	44.4	44.2	44.1	44.6
Netherlands	51.3	52.0	51.6	50.7	49.2	49.3	50.0	50.2	50.6	50.7
Sweden	65.3	65.6	65.1	64.7	64.4	64.5	65.0	65.2	66.0	66.7
United Kingdom	59.2	58.1	55.7	55.2	54.7	55.2	55.6	55.6	56.6	58.0
Unemployed										
United States	6,137	7,637	8,273	10,678	10,717	8,539	8,312	8,237	7,425	6,701
Canada	836	865	898	1,308	1,434	1,384	1,311	1,215	1,150	1,031
Australia	408	409	394	495	697	641	603	613	629	576
Japan	1,170	1,140	1,260	1,360	1,560	1,610	1,560	1,670	1,730	1,550
France	1,360	1,470	1,750	1,920	1,970	2,320	2,440	2,490	2,530	2,490
Germany	780	770	1,090	1,560	1,900	1,970	2,010	1,860	1,810	1,820
Italy	920	920	1,040	1,160	1,270	1,280	1,310	1,680	1,760	1,790
Netherlands	290	350	540	630	760	770	640	640	650	660
Sweden	88	86	108	137	151	136	125	117	84	72
United Kingdom	1,420	1,850	2,790	3,000	3,140	3,180	3,060	3,080	2,850	2,330
Unemployment rate										
United States	5.8	7.1	7.6	9.7	9.6	7.5	7.2	7.0	6.2	5.5
Canada	7.4	7.5	7.5	11.0	11.8	11.2	10.5	9.5	8.8	7.8
Australia	6.3	6.1	5.8	7.2	10.0	9.0	8.3	8.1	8.1	7.2
Japan	2.1	2.0	2.2	2.4	2.7	2.8	2.6	2.8	2.9	2.5
France	6.0	6.4	7.6	8.3	8.5	10.0	10.4	10.6	10.8	10.5
Germany	3.0	2.9	4.1	5.8	7.1	7.4	7.5	6.9	6.4	6.4
Italy	4.4	4.4	4.9	5.4	5.9	5.9	6.0	7.5	7.9	7.9
Netherlands	5.2	6.0	8.9	10.3	12.3	12.3	10.2	10.0	10.0	10.1
Sweden	2.1	2.0	2.5	3.1	3.5	3.1	2.8	2.6	1.9	1.6
United Kingdom	5.4	7.0	10.5	11.2	11.7	11.7	11.2	11.2	10.2	8.3

[1] Labor force as a percent of the civilian working-age population.
[2] Employment as a percent of the civilian working-age population.

NOTE: See "Notes on the data" for information on breaks in series for Germany, Italy, the Netherlands, and Sweden.

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

(1977 = 100)

Item and country	1960	1970	1973	1976	1977	1978	1980	1981	1982	1983	1984	1985	1986	1987	1988
Output per hour															
United States	62.2	80.8	93.4	97.1	100.0	101.5	101.4	103.6	105.9	112.0	118.1	123.6	127.7	132.0	136.2
Canada	50.7	75.6	90.3	94.8	100.0	101.1	98.2	102.9	98.3	105.4	114.4	117.3	117.7	120.5	124.3
Japan	23.2	64.8	83.1	94.3	100.0	108.0	122.7	127.2	135.0	142.3	152.5	161.1	163.7	176.5	190.0
Belgium	33.0	60.4	78.8	95.3	100.0	106.1	119.2	127.6	135.2	148.1	155.0	158.6	164.5	170.5	–
Denmark	37.2	65.6	83.3	98.2	100.0	101.5	112.3	114.2	114.6	120.2	119.6	120.3	116.2	117.2	117.2
France	37.4	71.4	83.8	94.4	100.0	104.6	110.6	113.9	122.0	125.1	127.5	132.7	135.2	136.8	144.1
Germany	40.3	71.2	84.0	96.4	100.0	103.1	108.6	111.0	112.6	119.2	123.7	128.4	128.3	129.9	135.9
Italy	37.2	69.8	83.4	97.9	100.0	106.5	122.1	125.4	128.5	135.3	148.8	156.8	158.3	162.3	167.1
Netherlands	32.4	64.3	81.5	95.8	100.0	106.4	113.9	116.9	119.4	127.9	139.2	145.1	144.8	145.9	153.2
Norway	54.3	81.3	94.4	100.4	100.0	101.2	107.5	108.0	109.2	117.2	124.1	126.8	125.9	132.2	–
Sweden	42.3	80.7	94.8	101.7	100.0	102.8	112.7	113.2	116.5	125.5	131.0	136.1	136.0	141.8	145.0
United Kingdom	55.9	80.3	95.4	99.1	100.0	101.4	101.9	107.1	113.5	123.1	129.9	134.1	138.6	147.6	154.9
Output															
United States	52.5	78.6	96.3	93.1	100.0	106.0	103.2	104.8	98.4	104.7	117.5	122.0	124.7	130.1	138.1
Canada	41.3	73.5	93.5	96.5	100.0	104.6	103.6	107.4	93.6	99.6	112.5	118.8	121.9	128.5	136.0
Japan	19.2	69.9	91.9	94.8	100.0	106.7	124.1	129.8	137.3	148.2	165.4	177.0	177.8	190.8	212.3
Belgium	41.9	78.6	96.4	99.7	100.0	101.4	106.8	105.6	110.1	114.7	118.0	119.6	121.4	123.3	–
Denmark	49.2	82.0	95.9	99.6	100.0	99.7	110.1	106.6	108.3	115.6	121.0	124.9	125.9	121.1	118.4
France	36.5	75.5	90.5	95.6	100.0	102.3	104.6	102.9	104.0	103.8	102.6	103.0	102.8	101.8	105.7
Germany	50.0	86.6	96.1	98.0	100.0	101.8	106.6	104.9	102.4	103.6	106.4	110.0	110.8	111.6	116.3
Italy	33.0	69.0	83.5	96.5	100.0	104.9	121.9	119.9	118.7	119.7	125.3	129.0	131.9	137.3	145.3
Netherlands	44.8	84.4	95.8	99.0	100.0	102.8	106.6	106.7	105.0	107.0	113.3	116.7	118.1	118.7	123.8
Norway	54.8	86.5	99.2	102.1	100.0	97.7	99.5	98.6	96.8	97.2	102.7	106.5	106.9	108.3	–
Sweden	52.6	92.5	100.3	106.1	100.0	97.3	104.0	100.6	100.1	105.2	111.5	115.3	114.7	119.2	124.0
United Kingdom	71.2	94.9	104.7	98.1	100.0	100.6	91.8	86.3	86.4	88.8	92.5	94.8	95.6	101.0	108.2
Total hours															
United States	84.4	97.3	103.1	95.9	100.0	104.4	101.7	101.1	92.9	93.5	99.5	98.7	97.7	98.6	101.4
Canada	81.4	97.2	103.6	101.8	100.0	103.4	105.5	104.3	95.2	94.5	98.3	101.2	103.6	106.6	109.4
Japan	82.7	107.9	110.7	100.6	100.0	98.8	101.2	102.0	101.7	104.2	108.5	109.8	108.6	108.1	111.7
Belgium	127.1	130.2	122.3	104.6	100.0	95.5	89.6	82.8	81.4	77.5	76.1	75.4	73.8	72.3	–
Denmark	132.4	125.1	115.2	101.4	100.0	98.3	98.0	93.4	94.5	96.2	101.2	103.8	108.4	103.3	101.0
France	97.6	105.7	107.9	101.3	100.0	97.8	94.6	90.3	85.2	83.0	80.4	77.6	76.1	74.4	73.4
Germany	123.8	121.7	114.4	101.6	100.0	98.7	98.1	94.6	91.0	86.9	86.1	85.7	86.4	85.9	85.5
Italy	88.9	98.9	100.1	98.6	100.0	98.5	99.8	95.6	92.4	88.5	84.2	82.3	83.3	84.6	87.0
Netherlands	138.4	131.2	117.6	103.3	100.0	96.6	93.6	91.2	88.0	83.6	81.4	80.5	81.5	81.3	80.8
Norway	101.1	106.4	105.1	101.7	100.0	96.5	92.6	91.3	88.6	82.9	82.8	84.0	84.9	81.9	–
Sweden	124.4	114.6	105.7	104.3	100.0	94.6	92.3	88.9	85.9	83.9	85.1	84.7	84.3	84.0	85.5
United Kingdom	127.3	118.1	109.8	99.0	100.0	99.1	90.1	80.6	76.2	72.2	71.2	70.7	69.0	68.5	69.8
Compensation per hour															
United States	36.5	57.4	68.8	92.1	100.0	108.2	132.4	145.2	157.5	162.4	168.0	176.4	183.0	186.9	193.5
Canada	27.5	47.9	60.0	90.3	100.0	107.6	131.3	151.1	167.0	177.2	185.6	194.4	203.5	214.0	227.1
Japan	8.9	33.9	55.1	90.7	100.0	106.6	120.7	129.8	136.6	140.7	144.9	151.4	158.9	162.5	171.3
Belgium	13.8	34.9	53.5	89.5	100.0	107.8	130.2	144.5	150.7	159.8	173.1	183.6	190.8	194.7	–
Denmark	12.6	36.3	56.1	90.4	100.0	110.2	135.9	149.7	162.9	174.2	184.1	196.5	203.5	225.9	230.1
France	15.0	36.3	51.9	87.8	100.0	113.0	148.5	172.0	204.0	225.2	244.9	265.4	278.7	291.4	301.9
Germany	18.8	48.0	67.5	91.2	100.0	107.8	125.6	134.5	141.0	148.3	155.5	164.6	171.5	178.1	185.5
Italy	9.2	27.1	41.2	84.5	100.0	115.2	163.7	197.9	233.3	273.1	313.3	352.0	367.4	391.2	416.3
Netherlands	12.5	39.0	60.5	91.9	100.0	108.4	123.6	129.1	137.5	144.5	148.6	156.9	162.2	167.0	172.8
Norway	15.8	37.9	54.6	88.9	100.0	110.0	128.0	142.8	156.1	173.5	188.3	204.3	224.2	257.4	–
Sweden	14.7	38.5	54.2	91.5	100.0	111.4	133.6	148.1	158.9	173.3	189.7	212.4	228.7	244.8	261.1
United Kingdom	15.2	31.4	47.9	88.4	100.0	116.7	168.6	193.4	211.7	226.6	242.3	258.8	277.8	295.7	319.3
Unit labor costs: National currency basis															
United States	58.7	71.0	73.7	94.9	100.0	106.6	130.6	140.1	148.7	145.0	142.2	142.7	143.3	141.7	142.1
Canada	54.2	63.4	66.5	95.3	100.0	106.5	133.7	146.7	170.0	168.1	162.3	165.7	172.8	177.5	182.7
Japan	38.4	52.3	66.4	96.2	100.0	98.7	98.4	102.0	101.2	98.9	95.0	94.0	97.1	92.1	90.2
Belgium	41.7	57.8	67.9	93.9	100.0	101.6	109.2	113.2	111.5	107.9	111.7	115.8	116.0	114.2	–
Denmark	33.8	55.4	67.4	92.1	100.0	108.6	121.0	131.1	142.2	144.9	153.9	163.3	175.1	192.8	196.3
France	40.2	50.8	62.0	93.0	100.0	108.0	134.3	151.0	167.2	179.9	192.0	200.0	206.2	213.0	209.6
Germany	46.6	67.4	80.3	94.6	100.0	104.5	115.7	121.2	125.2	124.4	125.8	128.3	133.7	137.1	136.4
Italy	24.7	38.8	49.4	86.3	100.0	108.1	134.0	157.8	181.6	201.9	210.6	224.5	232.0	241.0	249.1
Netherlands	38.5	60.7	74.3	96.0	100.0	101.8	108.5	110.4	115.2	113.0	106.8	108.1	112.0	114.4	112.8
Norway	29.2	46.6	57.8	88.5	100.0	108.7	119.1	132.2	142.9	148.0	151.8	161.1	178.1	194.7	–
Sweden	34.8	47.7	57.2	90.0	100.0	108.4	118.6	130.9	136.3	138.1	144.8	156.1	168.2	172.6	180.0
United Kingdom	27.2	39.1	50.2	89.2	100.0	115.0	165.5	180.6	186.5	184.1	186.5	193.0	200.4	200.4	206.2
Unit labor costs: U.S. dollar basis															
United States	58.7	71.0	73.7	94.9	100.0	106.6	130.6	140.1	148.7	145.0	142.2	142.7	143.3	141.7	142.1
Canada	59.4	64.5	70.6	102.7	100.0	99.3	121.5	130.0	146.3	144.9	133.2	128.9	132.1	142.3	157.8
Japan	28.5	39.1	65.6	86.9	100.0	126.8	116.8	123.8	108.8	111.5	107.2	105.6	154.4	170.5	188.4
Belgium	30.0	41.7	62.7	87.2	100.0	115.8	134.0	109.6	87.2	75.6	69.3	69.9	93.1	109.5	–
Denmark	29.5	44.4	67.2	91.5	100.0	118.4	129.0	110.3	102.3	95.1	89.3	92.5	129.9	169.0	174.8
France	40.3	45.2	68.6	95.8	100.0	117.9	156.4	136.4	124.9	116.1	108.1	109.5	146.3	174.2	172.9
Germany	25.9	42.9	70.4	87.3	100.0	121.0	147.9	124.9	119.7	113.1	102.6	101.2	143.0	177.0	180.3
Italy	35.1	54.7	75.0	91.8	100.0	112.4	138.4	122.4	118.4	117.3	105.9	103.8	137.4	164.0	168.8
Netherlands	25.1	41.2	65.6	89.1	100.0	115.7	134.1	108.9	105.8	97.1	81.6	80.0	112.2	138.6	139.9
Norway	21.8	34.7	53.5	86.4	100.0	110.4	128.4	122.5	117.8	107.9	99.0	99.8	124.7	153.7	–
Sweden	30.1	41.1	58.7	92.3	100.0	107.2	125.3	115.4	96.9	80.4	78.2	81.1	105.4	121.5	131.1
United Kingdom	43.7	53.7	70.5	92.3	100.0	126.5	220.6	209.6	186.8	160.0	142.9	143.5	168.6	188.3	210.5

– Data not available.

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

Industry and type of case[1]	Incidence rates per 100 full-time workers[2]								
	1979	1980	1981	1982	1983	1984	1985	1986	1987
PRIVATE SECTOR[3]									
Total cases	9.5	8.7	8.3	7.7	7.6	8.0	7.9	7.9	8.3
Lost workday cases	4.3	4.0	3.8	3.5	3.4	3.7	3.6	3.6	3.8
Lost workdays	67.7	65.2	61.7	58.7	58.5	63.4	64.9	65.8	69.9
Agriculture, forestry, and fishing[3]									
Total cases	11.7	11.9	12.3	11.8	11.9	12.0	11.4	11.2	11.2
Lost workday cases	5.7	5.8	5.9	5.9	6.1	6.1	5.7	5.6	5.7
Lost workdays	83.7	82.7	82.8	86.0	90.8	90.7	91.3	93.6	94.1
Mining									
Total cases	11.4	11.2	11.6	10.5	8.4	9.7	8.4	7.4	8.5
Lost workday cases	6.8	6.5	6.2	5.4	4.5	5.3	4.8	4.1	4.9
Lost workdays	150.5	163.6	146.4	137.3	125.1	160.2	145.3	125.9	144.0
Construction									
Total cases	16.2	15.7	15.1	14.6	14.8	15.5	15.2	15.2	14.7
Lost workday cases	6.8	6.5	6.3	6.0	6.3	6.9	6.8	6.9	6.8
Lost workdays	120.4	117.0	113.1	115.7	118.2	128.1	128.9	134.5	135.8
General building contractors:									
Total cases	16.3	15.5	15.1	14.1	14.4	15.4	15.2	14.9	14.2
Lost workday cases	6.8	6.5	6.1	5.9	6.2	6.9	6.8	6.6	6.5
Lost workdays	111.2	113.0	107.1	112.0	113.0	121.3	120.4	122.7	134.0
Heavy construction contractors:									
Total cases	16.6	16.3	14.9	15.1	15.4	14.9	14.5	14.7	14.5
Lost workday cases	6.7	6.3	6.0	5.8	6.2	6.4	6.3	6.3	6.4
Lost workdays	123.1	117.6	106.0	113.1	122.4	131.7	127.3	132.9	139.1
Special trade contractors:									
Total cases	16.0	15.5	15.2	14.7	14.8	15.8	15.4	15.6	15.0
Lost workday cases	6.9	6.7	6.6	6.2	6.4	7.1	7.0	7.2	7.1
Lost workdays	124.3	118.9	119.3	118.6	119.0	130.1	133.3	140.4	135.7
Manufacturing									
Total cases	13.3	12.2	11.5	10.2	10.0	10.6	10.4	10.6	11.9
Lost workday cases	5.9	5.4	5.1	4.4	4.3	4.7	4.6	4.7	5.3
Lost workdays	90.2	86.7	82.0	75.0	73.5	77.9	80.2	85.2	95.5
Durable goods									
Lumber and wood products:									
Total cases	20.7	18.6	17.6	16.9	18.3	19.6	18.5	18.9	18.9
Lost workday cases	10.8	9.5	9.0	8.3	9.2	9.9	9.3	9.7	9.6
Lost workdays	175.9	171.8	158.4	153.3	163.5	172.0	171.4	177.2	176.5
Furniture and fixtures:									
Total cases	17.6	16.0	15.1	13.9	14.1	15.3	15.0	15.2	15.4
Lost workday cases	7.1	6.6	6.2	5.5	5.7	6.4	6.3	6.3	6.7
Lost workdays	99.6	97.6	91.9	85.6	83.0	101.5	100.4	103.0	103.6
Stone, clay, and glass products:									
Total cases	16.8	15.0	14.1	13.0	13.1	13.6	13.9	13.6	14.9
Lost workday cases	8.0	7.1	6.9	6.1	6.0	6.6	6.7	6.5	7.1
Lost workdays	133.7	128.1	122.2	112.2	112.0	120.8	127.8	126.0	135.8
Primary metal industries:									
Total cases	17.3	15.2	14.4	12.4	12.4	13.3	12.6	13.6	17.0
Lost workday cases	8.1	7.1	6.7	5.4	5.4	6.1	5.7	6.1	7.4
Lost workdays	134.7	128.3	121.3	101.6	103.4	115.3	113.8	125.5	145.8
Fabricated metal products:									
Total cases	19.9	18.5	17.5	15.3	15.1	16.1	16.3	16.0	17.0
Lost workday cases	8.7	8.0	7.5	6.4	6.1	6.7	6.9	6.8	7.2
Lost workdays	124.2	118.4	109.9	102.5	96.5	104.9	110.1	115.5	121.9
Machinery, except electrical:									
Total cases	14.7	13.7	12.9	10.7	9.8	10.7	10.8	10.7	11.3
Lost workday cases	5.9	5.5	5.1	4.2	3.6	4.1	4.2	4.2	4.4
Lost workdays	83.6	81.3	74.9	66.0	58.1	65.8	69.3	72.0	72.7
Electric and electronic equipment:									
Total cases	8.6	8.0	7.4	6.5	6.3	6.8	6.4	6.4	7.2
Lost workday cases	3.4	3.3	3.1	2.7	2.6	2.8	2.7	2.7	3.1
Lost workdays	51.9	51.8	48.4	42.2	41.4	45.0	45.7	49.8	55.9
Transportation equipment:									
Total cases	11.6	10.6	9.8	9.2	8.4	9.3	9.0	9.6	13.5
Lost workday cases	5.5	4.9	4.6	4.0	3.6	4.2	3.9	4.1	5.7
Lost workdays	85.9	82.4	78.1	72.2	64.5	68.8	71.6	79.1	105.7
Instruments and related products:									
Total cases	7.2	6.8	6.5	5.6	5.2	5.4	5.2	5.3	5.8
Lost workday cases	2.8	2.7	2.7	2.3	2.1	2.2	2.2	2.3	2.4
Lost workdays	40.0	41.8	39.2	37.0	35.6	37.5	37.9	42.2	43.9
Miscellaneous manufacturing industries:									
Total cases	11.7	10.9	10.7	9.9	9.9	10.5	9.7	10.2	10.7
Lost workday cases	4.7	4.4	4.4	4.1	4.0	4.3	4.2	4.3	4.6
Lost workdays	67.7	67.9	68.3	69.9	66.3	70.2	73.2	70.9	81.5

See footnotes at end of table.

51. 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]								
	1979	1980	1981	1982	1983	1984	1985	1986	1987
Nondurable goods									
Food and kindred products:									
Total cases	19.9	18.7	17.8	16.7	16.5	16.7	16.7	16.5	17.7
Lost workday cases	9.5	9.0	8.6	8.0	7.9	8.1	8.1	8.0	8.6
Lost workdays	141.8	136.8	130.7	129.3	131.2	131.6	138.0	137.8	153.7
Tobacco manufacturing:									
Total cases	9.3	8.1	8.2	7.2	6.5	7.7	7.3	6.7	8.6
Lost workday cases	4.2	3.8	3.9	3.2	3.0	3.2	3.0	2.5	2.5
Lost workdays	64.8	45.8	56.8	44.6	42.8	51.7	51.7	45.6	46.4
Textile mill products:									
Total cases	9.7	9.1	8.8	7.6	7.4	8.0	7.5	7.8	9.0
Lost workday cases	3.4	3.3	3.2	2.8	2.8	3.0	3.0	3.1	3.6
Lost workdays	61.3	62.8	59.2	53.8	51.4	54.0	57.4	59.3	65.9
Apparel and other textile products:									
Total cases	6.5	6.4	6.3	6.0	6.4	6.7	6.7	6.7	7.4
Lost workday cases	2.2	2.2	2.2	2.1	2.4	2.5	2.6	2.7	3.1
Lost workdays	34.1	34.9	35.0	36.4	40.6	40.9	44.1	49.4	59.5
Paper and allied products:									
Total cases	13.5	12.7	11.6	10.6	10.0	10.4	10.2	10.5	12.8
Lost workday cases	6.0	5.8	5.4	4.9	4.5	4.7	4.7	4.7	5.8
Lost workdays	108.4	112.3	103.6	99.1	90.3	93.8	94.6	99.5	122.3
Printing and publishing:									
Total cases	7.1	6.9	6.7	6.6	6.6	6.5	6.3	6.5	6.7
Lost workday cases	3.1	3.1	3.0	2.8	2.9	2.9	2.9	2.9	3.1
Lost workdays	45.1	46.5	47.4	45.7	44.6	46.0	49.2	50.8	55.1
Chemicals and allied products:									
Total cases	7.7	6.8	6.6	5.7	5.5	5.3	5.1	6.3	7.0
Lost workday cases	3.5	3.1	3.0	2.5	2.5	2.4	2.3	2.7	3.1
Lost workdays	54.9	50.3	48.1	39.4	42.3	40.8	38.8	49.4	58.8
Petroleum and coal products:									
Total cases	7.7	7.2	6.7	5.3	5.5	5.1	5.1	7.1	7.3
Lost workday cases	3.6	3.5	2.9	2.5	2.4	2.4	2.4	3.2	3.1
Lost workdays	62.0	59.1	51.2	46.4	46.8	53.5	49.9	67.5	65.9
Rubber and miscellaneous plastics products:									
Total cases	17.1	15.5	14.6	12.7	13.0	13.6	13.4	14.0	15.9
Lost workday cases	8.2	7.4	7.2	6.0	6.2	6.4	6.3	6.6	7.6
Lost workdays	127.1	118.6	117.4	100.9	101.4	104.3	107.4	118.2	130.8
Leather and leather products:									
Total cases	11.5	11.7	11.5	9.9	10.0	10.5	10.3	10.5	12.4
Lost workday cases	4.9	5.0	5.1	4.5	4.4	4.7	4.6	4.8	5.8
Lost workdays	76.2	82.7	82.6	86.5	87.3	94.4	88.3	83.4	114.5
Transportation and public utilities									
Total cases	10.0	9.4	9.0	8.5	8.2	8.8	8.6	8.2	8.4
Lost workday cases	5.9	5.5	5.3	4.9	4.7	5.2	5.0	4.8	4.9
Lost workdays	107.0	104.5	100.6	96.7	94.9	105.1	107.1	102.1	108.1
Wholesale and retail trade									
Total cases	8.0	7.4	7.3	7.2	7.2	7.4	7.4	7.7	7.7
Lost workday cases	3.4	3.2	3.1	3.1	3.1	3.3	3.2	3.3	3.4
Lost workdays	49.0	48.7	45.3	45.5	47.8	50.5	50.7	54.0	56.1
Wholesale trade:									
Total cases	8.8	8.2	7.7	7.1	7.0	7.2	7.2	7.2	7.4
Lost workday cases	4.1	3.9	3.6	3.4	3.2	3.5	3.5	3.6	3.7
Lost workdays	59.1	58.2	54.7	52.1	50.6	55.5	59.8	62.5	64.0
Retail trade:									
Total cases	7.7	7.1	7.1	7.2	7.3	7.5	7.5	7.8	7.8
Lost workday cases	3.1	2.9	2.9	2.9	3.0	3.2	3.1	3.2	3.3
Lost workdays	44.7	44.5	41.1	42.6	46.7	48.4	47.0	50.5	52.9
Finance, insurance, and real estate									
Total cases	2.1	2.0	1.9	2.0	2.0	1.9	2.0	2.0	2.0
Lost workday cases	.9	.8	.8	.9	.9	.9	.9	.9	.9
Lost workdays	13.3	12.2	11.6	13.2	12.8	13.6	15.4	17.1	14.3
Services									
Total cases	5.5	5.2	5.0	4.9	5.1	5.2	5.4	5.3	5.5
Lost workday cases	2.5	2.3	2.3	2.3	2.4	2.5	2.6	2.5	2.7
Lost workdays	38.1	35.8	35.9	35.8	37.0	41.1	45.4	43.0	45.8

[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) X 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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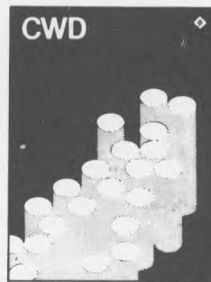
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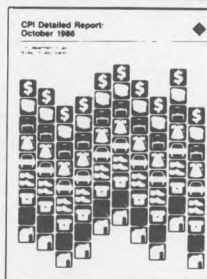
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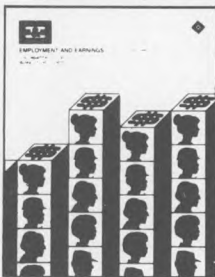
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4. The competition will be open to anyone except members of the
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Schedule of release dates for BLS statistical series

Series	Release date	Period covered	Release date	Period covered	Release date	Period covered	MLR table number
Productivity and costs:							
Nonfarm business and manufacturing	November 2	3rd quarter					2; 44–47
Nonfinancial corporations			December 6	3rd quarter			2; 44–47
Employment situation	November 3	October	December 8	November	January 5	December	1; 4–21
Producer Price Indexes	November 9	October	December 15	November	January 12	December	2; 34–37
Occupational injuries and illnesses	November 15	1988					51
Consumer Price Index	November 21	October	December 19	November	January 18	December	2; 31–33
Real earnings	November 21	October	December 19	November	January 18	December	14–17
U.S. Import and Export Price Indexes	November 22	October	December 21	November	January 25	4th quarter	38–43