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# MONTHLY LABOR REVIEW

U.S. Department of Labor  
Bureau of Labor Statistics  
November 1987

*In this issue:*  
Comparing the old and new CPI

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**MONTHLY LABOR REVIEW**

**NOVEMBER 1987**

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Robert W. Fisher, Executive Editor

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# Labor Month In Review

**WORKPLACE SAFETY.** The National Research Council published a study critical of the Nation's occupational safety and health statistics and recommended improvements.

The study, commissioned by the Bureau of Labor Statistics, was prepared by a panel of 12 representatives of industry, labor, State agencies, and the academic community. The National Research Council's Committee on National Statistics selected the panel. The Research Council is the operating arm of the National Academies of Sciences and Engineering, a private research organization chartered by Congress to examine questions of science and technology at the request of Federal agencies.

**Panel recommendations.** After 18 months of study, the panel concluded that current statistical systems are inadequate for maintaining an effective program of preventing workplace injuries and illnesses, that some of the available data are not well used, that there is no agreed-upon estimate of occupational fatalities, that better evaluation is needed of both under- and overreporting of occupational injuries, and that measurement of occupational illnesses remains elusive, in part, because some occupational diseases are difficult even for physicians to recognize.

The panel's 24 specific recommendations included these:

- Modify the BLS annual survey to collect more detail about *severe* occupational injuries and illnesses, that is, those resulting in hospitalization, outpatient surgery, or death.
- Include more specific categories of injuries, such as amputations, burns, cuts, and fractures.
- Distinguish between acute and chronic illnesses.
- Find out more about how well employers

understand the guidelines for maintaining occupational injury and illness records.

- Compare *reports* submitted by establishments in the annual BLS survey with *records* kept by employers.

- Study medical information recorded by hospitals about occupational injuries and determine to what extent these injuries are reflected in establishment records.

- Conduct sample surveys of employees to obtain information on possible injuries obtained in the workplace and seek to relate these injuries to employer records.

- Work with State agencies to compare occupational fatalities from death certificates and workers compensation records with information in employer records.

- Modify the BLS Supplementary Data System by redirecting funds to offer grants to States willing to provide data for detailed analysis of a wide range of specific injuries.

The panel supported the principle that BLS protect the confidentiality of the survey data it receives from individual establishments and that such data should *not* be transmitted to the Occupational Safety and Health Administration for enforcement purposes.

**BLS actions.** Commissioner of Labor Statistics Janet L. Norwood welcomed the Research Council study and indicated that BLS will pay close attention to the panel's criticisms and make the necessary improvements. The commissioner said that BLS will carefully study all of the panel's recommendations, discuss them with BLS labor and business advisory committees, with other Federal agencies, and with cooperating States. In planning additional actions, she added, BLS will take into account their cost effectiveness, resource and budget implications, and the paperwork burden on survey respondents.

Norwood noted that, in some cases, BLS already has new actions under way. One is a pilot study of employer recordkeeping practices. The study, in 200

manufacturing establishments in Massachusetts and Missouri, is being conducted by OSHA, with BLS technical support. It is designed to test procedures for evaluating employer recordkeeping under BLS/OSHA requirements. Preliminary results from 180 of the 200 establishments show that

—159 of the 180 establishments, or about 90 percent, were in compliance with the requirement to maintain an OSHA log. Those that were not, generally were small establishments, half of which had no recordable cases.

—A large number of the 180 establishments made errors in recording individual injuries and illnesses. The errors involved overrecording as well as underrecording. Total injuries and illnesses were underrecorded by about 10 percent. Two of the establishments were responsible for most of this undercount.

—Injuries and illnesses involving lost workdays were underrecorded by about 25 percent in the 180 establishments, while nonfatal cases without lost workdays were overrecorded by about 10 percent.

Norwood emphasized that because of the small number (200) of establishments visited, statistical implications that can be drawn from this pilot study are limited. She said that BLS will do more detailed analysis of these data and will use the results of the study in Bureau efforts to inform employers about recordkeeping requirements.

The 176-page Research Council report, *Counting Injuries and Illnesses in the Workplace*, has been published by National Academy Press, 2101 Constitution Ave., N.W., Washington, DC 20418. □



# Comparison of the revised and the old CPI

*During the first 6 months of 1987, the revised all items CPI-U, based on 1982-84 expenditure patterns, increased 2.7 percent, and the old series, based on 1972-73 expenditures, rose 3.1 percent*

MARY LYNN SCHMIDT

The Bureau of Labor Statistics introduced a revised Consumer Price Index (CPI) with the release of January 1987 data in February. Periodic revisions of the expenditure weights are necessary so that the CPI reflects price changes of the current spending patterns. Updated expenditure weights were based upon data tabulated from 1982, 1983, and 1984 Consumer Expenditure Surveys (CES), replacing the old expenditure weights based on the 1972-73 CES. The revised expenditure weights reflect the geographic distribution of consumers as of the 1980 census of population, replacing the 1970 census distribution.

As in previous revisions, for a period of 6 months following the introduction of the CPI based on revised weights, BLS continued to compile and publish a CPI using the old expenditure weights (hereafter called old series). Unlike earlier revisions, however, these old series overlap indexes were not based on the old sample of items and outlets, but on the prices collected in the new sample of items and outlets. The old series indexes, therefore, can differ from the revised indexes only as result of differences in their expenditure weights. These differences reflect definitional changes in some item strata, as well as the changes in consumer preferences between 1972-73 and 1982-84.

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The difference in movements between the old series and revised indexes can be analyzed in terms of the effects of various items on the respective CPI all items indexes. The effect of an item or group of items is how much the all items index changes as a result of the change in a particular item or group.

Both the old series and the revised CPI were linked to the indexes for December 1986 to provide a continuous series. The linking was accomplished by setting the index levels of the revised CPI (with the updated expenditure weights and samples) equal to the index levels published for the old series in December 1986. Each index was moved upward or downward from the December 1986 level in accordance with subsequent weighted changes in prices.

The CPI is divided into seven major expenditure groups—food and beverages, housing, apparel and upkeep, transportation, medical care, entertainment, and other goods and services. The expenditure weight for each item within an expenditure group is an estimate of total expenditure by the index population for that item.

In a fixed-weight index such as the CPI, the quantity of any item used in calculating the index remains the same each month. In a revision, the quantity weights change to reflect changes in consumption that have taken place. Relative importances show the share of total expenditures that would occur if quantities consumed actually remained constant while only prices to consumers changed. Items whose prices

rise faster than average become relatively more important in the market basket. The new expenditure weights introduced in the revision of the CPI reflect the revised quantities implicit in the new expenditure levels. The relative importances as of December 1986, based on the 1972-73 and the 1982-84 expenditure patterns, are shown in table 1 for the Consumer Price Index for all urban consumers (CPI-U).

This article compares the behavior of the old and the revised CPI-U's for the 6 months following the revision (January through June 1987).<sup>1</sup> It discusses the differences between the two CPI-U's for items in seven major expenditure categories and examines the effect of each category on the all items index. The all items CPI rose 2.7 percent during the first 6 months of 1987. (See table 1.) The old series index rose 3.1 percent during the same period. Most of this 0.4-percentage point difference (0.395 before rounding) reflects the revised weights for energy and used cars. While differences at aggregate levels of the index come primarily from differences in the relative weights of items in the index,

differences at lower levels (like motor fuels and new vehicles) come from combinations of different weights for more detailed items and/or difference in the population distribution between the two indexes.

As an initial step in comparing the old series and revised indexes, we will look at those categories that have lower relative importances in the revised CPI—food and beverages, transportation, and medical care. Then we will look at the four categories with larger relative importances in the revised CPI—housing, apparel and upkeep, entertainment, and other goods and services—of which housing had, by far, the largest difference.

### Food and beverages

The December 1986 relative importance for the food and beverages category was 17.824 percent, based on the updated 1982-84 expenditure patterns, a good deal less than the 20.123 percent based on 1972-73 expenditures. While part of this smaller importance is attributable to a 7-percent

**Table 1. Comparison of the revised and old series Consumer Price Indexes for all urban consumers for the first 6 months of 1987, relative importance, percent change, and effect of selected categories on the all items index**

Category	Relative importance <sup>1</sup> (Dec. 1986)			Percent change			Effect (percent) <sup>1</sup>		
	Revised CPI	Old series	Difference	Revised CPI	Old series	Difference	Revised CPI	Old series	Difference
All items .....	100.000	100.000	0.000	2.7	3.1	-0.4	2.725	3.120	-0.395
Food and beverages .....	17.824	20.123	-2.299	2.6	2.7	-.1	.476	.554	-.078
Food .....	16.246	19.008	-2.762	2.7	2.8	-.1	.443	.535	-.092
Food at home .....	9.974	12.687	-2.713	3.3	3.4	-.1	.328	.423	-.095
Food away from home .....	6.272	6.321	-.049	1.8	1.8	.0	.115	.111	.004
Alcoholic beverages .....	1.578	1.115	.463	2.1	1.7	.4	.033	.019	.014
Housing .....	42.947	38.131	4.816	2.5	2.6	-.1	1.087	1.002	.085
Shelter .....	27.822	23.022	4.800	2.4	2.1	.3	.664	.483	.181
Renters' costs .....	8.000	7.599	.401	3.0	1.9	1.1	.235	.145	.090
Rent, residential .....	6.094	6.597	-.503	1.3	1.3	.0	.075	.081	-.006
Other renters' costs .....	1.906	1.002	.904	8.3	6.3	2.0	.159	.063	.096
Lodging while out of town .....	1.676	.639	1.037	9.4	9.3	.1	.158	.060	.098
Lodging while at school .....	.193	.275	-.082	.4	.8	-.4	.001	.002	-.001
Homeowners' costs .....	19.600	14.901	4.699	2.1	2.2	-.1	.427	.331	.096
Fuel and other utilities .....	7.909	7.536	.373	4.5	5.7	-1.2	.354	.432	-.078
Fuel oil .....	.267	.741	-.474	11.6	11.3	.3	.031	.083	-.052
Electricity .....	2.742	2.518	.224	9.4	10.5	-1.1	.258	.265	-.007
Utility (piped) gas .....	1.321	1.745	-.424	3.2	3.7	-.5	.042	.065	-.023
Household furnishings and operation .....	7.216	7.572	-.356	1.0	1.1	-.1	.069	.086	-.017
Apparel and upkeep .....	6.335	5.005	1.330	1.7	1.7	.0	.108	.085	.023
Apparel commodities .....	5.767	4.175	1.592	1.6	1.5	.1	.094	.063	.031
Apparel services .....	.568	.830	-.262	2.3	2.6	-.3	.013	.022	-.009
Transportation .....	17.217	19.893	-2.676	3.9	5.2	-1.3	.674	1.037	-.363
New vehicles .....	5.607	4.027	1.580	-.2	-.3	.1	-.011	-.011	.000
Used cars .....	1.249	4.086	-2.837	7.4	7.4	.0	.092	.301	-.209
Motor fuels .....	2.903	3.752	-.849	16.8	16.6	.2	.488	.621	-.133
Medical care .....	5.420	6.870	-1.450	3.2	3.4	-.2	.176	.237	-.061
Medical care commodities .....	1.083	1.132	-.049	3.8	3.8	.0	.041	.043	-.002
Medical care services .....	4.337	5.738	-1.401	3.1	3.4	-.3	.134	.193	-.059
Entertainment .....	4.403	4.290	.113	1.8	1.7	.1	.078	.074	.004
Entertainment commodities .....	2.120	2.427	-.307	1.6	1.9	-.3	.035	.046	-.011
Entertainment services .....	2.283	1.864	.419	1.8	1.5	.3	.043	.028	.015
Other goods and services .....	5.855	5.687	.168	2.2	2.3	-.1	.126	.132	-.006
Special indexes:									
Energy .....	7.360	8.932	-1.572	11.2	11.6	-.4	.822	1.036	-.214
All items less energy .....	92.640	91.068	1.572	2.1	2.3	-.2	1.904	2.084	-.180
All items less energy and used cars .....	91.391	86.982	4.409	2.0	2.0	.0	1.811	1.783	.028

<sup>1</sup> Because of independent rounding, components may not add to indicated totals.



reduction in the size of the average consumer unit, it is also a continuation of a long-term trend of generally declining importance of food and beverages in consumer expenditures. Because of lower relative importance in the revised index, during the first 6 months of 1987, the overall effect of food and beverages on the all items index was .476 percent for the revised measure, compared with .554 percent for the old series. (See table 1.)

While the percent changes over the January-June 1987 period differed little between the revised and old series for either the food at home or food away from home components, there were some differences in effects on the all items index. The food at home effect on the all items index in the revised CPI was .328, while in the old series, it was .423. This difference reflects the smaller relative importance of grocery store foods in the revised index. The relative proportion of groups within the foods at home component did not shift substantially, however, resulting in very similar price movements at the aggregate level for both the new and old series. The effect of food away from home differed little between the revised and old series because there was no major difference in the relative importances.

### Transportation

The second major category with a smaller relative importance is transportation, which changed from 19.893 percent, based on 1972-73 consumer expenditure patterns, to 17.217 percent, based on 1982-84 expenditures. This lower weight resulted largely from smaller relative importances of motor fuels and used automobiles.

While total consumer expenditures for gasoline increased between the two survey periods, it increased substantially less than the rise in gasoline prices because of a decline in the number of gallons of gasoline used per consumer unit. The Arab oil embargo of 1973-74, which resulted in a sharp increase in gasoline prices, led to unprecedented energy conservation interest in the United States, including legislating standards for fuel efficiency for new cars and lower speed limits throughout the country. Therefore, the revised relative importance of 2.903, based on 1982-84 expenditures, is nearly one-fourth less than the 3.752 percent, based on 1972-73 expenditures.

During the 6-month period, January-June 1987, gasoline prices increased nearly 17 percent in both series, substantially more than the average of other items. This increase was a direct consequence of the December 1986 agreement between members of the Organization of Petroleum Exporting Countries (OPEC) to cut production of crude oil supplies, followed by several non-OPEC members also restraining output and, thereby, reducing the supply of gasoline. Reflecting these changes, the difference in effect of gasoline between the revised CPI and old series was  $-.133$  during this period.

The second factor in the lower relative importance of the transportation component was the shift in the weights of new and used vehicles—the 1982-84 based relative importance

of used vehicles is sharply lower and that for new vehicles, substantially higher. This shift reflects a conceptual change in the treatment of trade-ins for new and used cars. In the old series, all expenditures for vehicles were valued at their net transaction price, that is, the negotiated price less any trade-in value. In the revised CPI, the value of all trade-ins have been deducted from the used car weight rather than against its corresponding new or used car purchase. This treatment reflects the net purchases of each by the index population from other groups. The revised used car index represents the value of used cars purchased from business and government sectors plus the value added by used car dealers who buy the vehicle from one consumer and sell to another. The resulting relative importance of new vehicles in the revised index is 5.607 percent—nearly 40 percent greater than in the old series. The higher relative importance of new vehicles is partially because of this definitional change in the index, but much of the increase reflects greater consumption of vans, small trucks, and motorcycles, as well as higher quality vehicles. A small difference between the average movement in new vehicle prices in the revised CPI and the old series during the first 6 months of 1987 offset the weight difference in the two series and resulted in the same overall effect on the all items index.

The December 1986 relative importance of used cars, based on the 1982-84 expenditure pattern, was less than one-third of that in the old series. With virtually no difference in price change of used cars between the old series and revised CPI during the 6-month period, there was a difference of  $-.209$  in the effect of the two used cars series on their respective all items indexes.

The difference in the transportation effects between the revised CPI and the old series during the first 6 months of 1987 was larger than in any other major category. Used cars and motor fuels accounted for  $-.342$  of the  $-.363$  difference for transportation, which, in turn, was equal to almost all of the difference at the all items level.

### Medical care

While total economywide spending for health care has been expanding rapidly, health care financing by government and employers has grown even faster. Thus, because the CPI covers only purchases by consumers, there was an approximately one-fifth reduction in the relative importance of medical care in the CPI, from 6.870 percent, based on the 1972-73 consumer expenditure pattern, to 5.420 percent, based on 1982-84 expenditures. Because of its smaller relative importance, medical care had a .061-percentage point smaller effect on the all items CPI in the revised index.

### Housing

Among the major groups, the largest difference in relative importances between the old series and the revised CPI was in the housing category. The relative importance of the housing index is now 42.947 percent, based on updated 1982-84 expenditures, compared with 38.131 percent,

based on updated 1972–73 expenditures. Price movements in housing during the first 6 months of 1987 were essentially the same for both the old series and revised CPI, so that the difference in effects between the two indexes (.085 percentage point) was virtually all attributable to the difference in relative importance.

Shelter costs in the revised CPI had a larger effect than in the old series. This was primarily due to the larger weight in the revised measure for homeowners' costs and lodging while out of town. The 1982–84 based relative importance of homeowners' costs was nearly one-third larger than in the old series (19.600 to 14.901). This reflects both increases in the proportion of homeowners and changes in the housing stock and makeup between 1972–73 and 1982–84.

The increased relative importance for lodging while out of town reflects a definitional change. The definition of lodging while away from home, a component of other renters' cost, has been expanded to include an imputed value for owners' use of their vacation property. This was an element of consumer expenditures not previously included in the CPI. According to data from the 1982–84 CES, 6 percent of all consumer units own some sort of vacation property for their own use. The broader definition resulted in the relative importance of lodging while out of town increasing from .639 percent in the old series to 1.676 percent in the revised CPI.

The relative importance of the residential rent component in the renters' cost index is slightly lower at 6.094 percent, based on the 1982–84 expenditures, compared with 6.597 percent based on 1972–73 expenditures. This reflected proportionately fewer renters, in addition to the shift towards exclusion of utilities from rental payments, as more landlords converted to individual utility meters.

The difference in effects of the fuel and other utility component on the overall CPI partially offset that of shelter costs. A smaller price increase than for the old series more than offset the greater weight of this component in the revised CPI. The price change for the individual fuel components were generally similar, but substantial differences in the relative importance between the old series and the revised measure were responsible for the smaller percentage change in the revised index. This shift in relative importance reflects a geographic shift of the population into the southern and western regions as well as changing relative prices among the fuels between the early 1970's and early 1980's. The relative importance of home heating oil is

nearly two-thirds lower, .267 percent, compared with .741 percent in the old series; utility (piped) gas is one-quarter lower, 1.321 percent, compared with 1.745 percent. The shifts also reflect the fact that the number of homes with air conditioning rose 45 percent between 1970 and 1980. But, the relative importance of electricity is larger—2.742 percent, compared with 2.518 percent.

### Apparel and upkeep

The revised relative importance of apparel and upkeep is 6.335 percent, one-fourth greater than the 5.005 percent in the old series. The revised relative importance reflects greater importance in all major components of apparel commodities, particularly women's apparel. Comparisons of the effects of the new and old apparel series showed a difference of only .023 percentage points, reflecting its higher relative importance in the new series.

### Entertainment

The relative importance of the entertainment category is only slightly higher in the revised CPI. The overall price change in the entertainment component during the first 6 months of 1987 was essentially the same in both indexes, resulting in virtually no difference in their effects. However, because entertainment services have greater importance in the revised index, they had a greater effect on the all items revised index than on the old series. Similarly, the lesser importance of entertainment commodities resulted in an offsetting smaller effect.

### Other goods and services

The relative importance of other goods and services are only slightly higher in the revised index. Shifts within this category, however, are notable. They include relatively more expenditures on day care and nursery schools and especially personal expenses such as legal fees, personal financial services, and funeral services. Somewhat offsetting these shifts were smaller relative importances for personal care goods and services, as well as for tobacco products. The percent changes in the 6-month period, January–June 1987, showed only a small difference between the old series and the revised indexes. Combining the small difference in relative importance and price movements between the revised CPI and the old series resulted in a difference in effects of only  $-.006$  percentage point in this category. □

#### —FOOTNOTE—

<sup>1</sup> Previous *Monthly Labor Review* articles on the 1987 CPI revision described the availability of local area indexes, new series titles, and spending patterns. See John Marcoot, "Revision of the Consumer Price Index is now underway," April 1985, pp. 27–38; John Marcoot and Richard Bahr, "The

revised Consumer Price Index: changes in definitions and availability," July 1986, pp. 15–23; and Charles Mason and Clifford Butler, "New basket of goods and services being priced in revised CPI," January 1987, pp. 3–22.



# Women's work plans: contrasting expectations and actual work experience

*Eighty percent of women with work plans were in the labor force, while 50 percent who did not plan to work were employed; those women with consistent work expectations earned higher wages*

LOIS B. SHAW AND DAVID SHAPIRO

The human capital literature in the past decade has emphasized that women's early work expectations affect their subsequent earnings and occupations.<sup>1</sup> If women expect to withdraw from the labor market when they have children, they may have little incentive to invest in work-related skills early in their working lives. They may look for jobs that pay well initially but offer few prospects for on-the-job training and advancement. They may also choose occupations in which skill depreciation will be limited during periods of labor market withdrawal.<sup>2</sup> These considerations lead to the prediction that the earnings of women who plan for continuous labor force participation will increase more rapidly than those of women who expect to experience work interruptions.

We use questions from the National Longitudinal Surveys of Labor Market Experience of Young Women (NLS) to examine how young women's plans affect their subsequent work experiences and earnings.<sup>3</sup> We find that those young women who planned to be in the labor market at age 35 were indeed more likely to be employed when they reached that age. More importantly, planning to work yielded a significant net wage advantage: among women in their mid-thirties, those who, throughout their twenties, had consistently planned to work had wages that were nearly 30

percent higher than those of women who had never planned to work, even after controlling for work experience and other determinants of wage rates. This wage advantage was even greater for those women who were employed in occupations in which they had expected to be employed.

Beginning in 1968, young women, ages 14 to 24, in the National Longitudinal Survey sample were asked at each interview whether they wanted to be working when they reached age 35. By 1980, the oldest women in the sample had actually reached age 35, making a comparison of plans and actual work behavior possible. Using data from the first 5 years of the NLS, Steven Sandell and David Shapiro showed that young women were considerably underestimating the likelihood that they would work outside the home in the future.<sup>4</sup> Sandell and Shapiro also presented evidence indicating that women who had work plans found jobs with more potential for training and advancement, albeit lower initial wages, than women who did not expect to be working. We followed the NLS young women over 7 more years to determine how well their plans were realized, why plans were sometimes not realized, and the extent to which early work plans contributed to subsequent wages. If young women underestimate their future employment and have lower wages as a result, this factor will contribute to male-female earnings differences among adults. To the extent that this is indeed the case, it suggests that young women need to be provided with better information about the likelihood of future employment and the importance of planning ahead for their working lives.

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In the next section, we describe and provide an overview of the NLS data on work expectations. Then, we examine the association between early work plans and actual adult work behavior, and later extend that analysis and explore the factors that influence whether or not a young woman's work expectations are realized. Finally, we analyze the relationship between early work plans and subsequent earnings of women, and follow with a summary and conclusions.

### Work expectations of young women

Two versions of a question concerning women's work expectations have been used in the NLS. In the initial round of the surveys (1968), respondents were asked "Now I would like to talk to you about your future plans. What would you like to be doing when you are 35 years old?" In the following years, the question was changed to read "Now I would like to talk to you about your future *job* plans. What *kind of work* would you like to be doing when you are 35 years old?" (Emphasis added to indicate changes from the previous version.) In the second version as well as the first, keeping house or raising a family was a possible response. Because the questions mention both plans and preferences, which may not always reflect actual plans, respondents may have interpreted the questions in more than one way. However, interpreting their actions as reflecting their plans, as we do here, appears to produce plausible results.

As mentioned previously, evidence presented by Sandell and Shapiro suggested that young women, as a group, underestimated their future work activity. Table 1 provides further evidence of this phenomenon. Focusing on white women respondents who were ages 34–36 in 1980, the table shows the percentage who reported plans to work at age 35 in each survey year for 1968–78.<sup>5</sup> Except for the 1977 and 1978 surveys, young women consistently underpredicted (in the aggregate) the likelihood that they would be working at age 35. It should be noted that their initial expectations were also lower than the actual labor force participation of women who were age 35 in 1968. Young women either expected to

work less than their elders or were poorly informed about the likelihood that a 35-year-old woman would be employed. There is a clear trend for work expectations to approximate more closely actual work activity as the women approach age 35.<sup>6</sup> Hence, it appears that expectations regarding future market work activity were essentially adaptive, beginning at a low level when respondents were in their early twenties and rising (more or less) steadily over time. Looking at future work plans by educational attainment in 1980, we see that women who had attended college were consistently more likely than their noncollege counterparts to anticipate working at age 35, and the differences in work expectations between college and noncollege women appear to have widened somewhat over time.

The aggregated data on future work expectations reveal a fairly steady trend. A somewhat different perspective is provided by comparing the responses of individuals over time. Table 2 shows the number of times in the first seven interviews (covering the period from 1968 to 1975) that respondents ages 34–36 in 1980 indicated they planned to be working in the labor market at age 35. Overall, the frequency distribution is fairly evenly divided across the four work-plans groups. However, the distribution of responses for the total sample conceals large differences in responses by educational attainment. Although a great deal of variation occurred in both groups, better educated women were most likely to have indicated plans for work at least six times and least likely to have planned to work only once or not at all; for women who had never attended college, the reverse was true.

Just over half of the total group responded consistently from year to year (they had plans to work in at least 6 years out of 7 or did not express plans to work in at least 6 years out of 7). Those individuals whose responses to questions about plans were more mixed over the 7 years fall into two broad groupings: women who shifted from having no future work plans to having such plans and all other women. Examination of the detailed data on the sequencing of work expectations of individuals over time (not shown here) indicated that approximately 12 percent of the total group in table 2 fell into the former category, while more than one-third were in the latter category.<sup>7</sup> Thus, four principal patterns of work expectations emerged: women who consistently anticipate working at age 35 throughout their twenties; those who consistently indicate no plans for future work; women who shift to having future work expectations at some time during their twenties; and those who give highly variable responses over time.

### Linking work plans to work behavior

In this section, we examine the association between early work plans and subsequent work behavior: expectations about future work reported in the first seven rounds of the National Longitudinal Surveys are linked to labor force participation in 1980 and to cumulative work experience (weeks worked) between 1976 and 1980. This juxtaposition

**Table 1. Percent of women planning to work, 1968–78, and percent actually in the labor force in 1980, by educational attainment**

Year of survey	Educational attainment		
	Twelve years or less	Thirteen years or more	Total
	Percent planning to work		
1968 .....	31	37	33
1969 .....	39	46	42
1970 .....	41	52	45
1971 .....	43	54	47
1972 .....	47	66	54
1973 .....	50	65	55
1975 .....	49	69	57
1977 .....	60	69	64
1978 .....	64	75	68
	Percent in labor force		
1980 .....	58	74	64



enables us to determine the extent to which women's early work plans are realized, and thereby provides useful information about the predictive reliability of the responses.

Table 3 shows the labor force participation rates and average number of years worked between 1976 and 1980 for NLS respondents ages 34–36 in 1980, according to the number of times between 1968 and 1975 that respondents indicated they had plans for work at age 35. Perhaps most striking is that nearly half of the women who had consistently indicated no plans for work at age 35 were in the labor force in 1980. At the same time, however, the data in table 3 reveal a strong association between early work plans and subsequent work activity. This association reflects not simply an independent effect of work expectations on labor force activity—it also reflects the relationship between work expectations and other factors that directly influence work activity. For example, better educated women report greater expectations of work at age 35, and it is well known that better educated women have higher labor force participation rates than their lesser educated counterparts. Hence, part of the association between early work plans and subsequent work activity evident in table 3 results from the intervening effect of educational attainment: the data reflect the fact that women with work plans also tend to have more schooling than those who do not plan to work.<sup>8</sup>

To isolate the net association between early work expectations and later labor force activity, we have estimated reduced-form labor-supply equations for the NLS respondents ages 34–36 in 1980. Table 4 reports the results of a probit analysis of the factors influencing labor force participation in 1980. The explanatory variables include the respondent's educational attainment, other family income, marital status, number and ages of children, and early plans for work at age 35. Results of estimating an ordinary least squares regression for work experience between 1976 and 1980 are reported in table 5.

In both equations, early plans for work are significantly related to work activity at age 35. The equations imply that, compared to women with no plans, women who indicated in each year from 1968 to 1975 that they would like to be working at age 35 have a labor force participation rate more than 30 percentage points higher and have worked about nine-tenths of a year more between 1976 and 1980. These results indicate that work activity of consistent planners is

**Table 2. Percent distribution of women by the number of times they indicated plans to work in first seven surveys, by educational attainment**

Number of times with plans to work	Educational attainment		
	Twelve years or less	Thirteen years or more	Total
Total .....	100	100	100
0-1 .....	34	18	28
2-3 .....	25	23	24
4-5 .....	21	26	23
6-7 .....	20	33	25
Sample size .....	396	231	627

**Table 3. 1980 labor force participation rates and 1976–80 work experience, by number of times respondent indicated plans to work**

Number of times with plans to work	1980 labor force participation rates (percent)	1976-80 work experience <sup>1</sup>	Sample size <sup>2</sup>
Total .....	64	2.1	588
0-1 .....	49	1.6	163
2-3 .....	63	2.0	148
4-5 .....	66	2.3	136
6-7 .....	82	2.7	141

<sup>1</sup> Expressed in years (number of weeks worked between 1976 and 1980 divided by 52).

<sup>2</sup> For work experience; slightly larger sample for 1980 labor force participation rates.

approximately 50 percent greater than that of women with no work plans, other things equal.<sup>9</sup> Coefficients of the other variables in the equations are almost all statistically significant with the expected signs.

The evidence present in this section suggests a fairly strong association between early work plans and later work behavior. Even after controlling for other factors that affect female work activity, early work expectations are significantly related to the subsequent work behavior of white women. This correlation suggests that the association between actual work behavior and the work expectations measure reflects not only the effects of readily quantified variables such as educational attainment, but that it also reflects the effects of unmeasured variables. For example, even at the same educational level, some women are more career-oriented than others, and some enjoy homemaking activities while others do not.

### Factors affecting work participation

In this section, we examine the factors associated with the realization of earlier plans for each of three groups of women: those who consistently planned to work at age 35; those who consistently indicated no work plans; and all others. Table 6 summarizes the results of two probit equations for labor force participation in 1980 for the three groups. The first equation for each group uses the basic labor supply model used earlier in the article. For purposes of considering deviations of actual participation from expected participation, however, it would be desirable to have measures of change in variables that are known to influence labor force participation. For example, women who expected to be married or to have (or not have) children at age 35, may not have had their expectations realized. Similarly, some women may have hoped to devote themselves exclusively to their families at age 35, but their husbands' unemployment or slow advancement may have precluded the women remaining at home. Other women may have misperceived the relative rewards of career and housewife roles. Unfortunately, the National Longitudinal Surveys contain data on expectations in only one of these areas: number of children. In the second equation for each group, then, we use two dummy variables indicating whether the respondent had more or fewer children in 1980 than she had expected

to have in 1973; these variables are substituted for the age of children variables of the first equation.

Examination of the coefficients in each equation in table 6 indicates that these three groups of women differed significantly with respect to the responsiveness of their labor supply to schooling, income, and children.<sup>10</sup> Differences in educational attainment were most important as a determinant of labor force participation among women who did not consistently express plans for work at age 35. Among women who did consistently express such plans, schooling was not significantly related to labor force participation. With schooling viewed as a proxy for a woman's potential wage rate, these results suggest that women with strong expectations of market work manifest a rather inelastic labor supply—not unlike that of adult men. Women with weaker work expectations, by contrast, exhibit more elastic labor supply.

Other family income is inversely related to the probability that a woman will be in the labor force, and the effect of other income becomes weaker as one moves from women who had no work expectations to women with consistently strong expectations. Other things equal, the absence of a husband appears to contribute to an increased likelihood of being in the labor force only for women who consistently expressed no work plans.<sup>11</sup>

Having more children reduces labor force participation for all three groups of women. The presence of preschool-age children is not significantly related to the labor force participation of women without work plans, but it is a highly significant deterrent to labor force participation among women with intermediate and strong early work plans. While having fewer children than expected did not contribute to higher labor force participation among women, having more children than expected did result in a significantly lower likelihood of being in the labor force among women with intermediate work plans. A smaller effect among women with strong work plans was not quite statistically significant at conventional levels.

Overall, then, among women who had consistently expressed no plans for work at age 35, the principal determinants of labor force participation at age 35 were schooling,

**Table 4. Probit maximum likelihood estimates for labor force participation equation, controlling for work plans**

Independent variables	Coefficient	t	Partial at maximum	Partial at mean
Plans for work at age 35 <sup>1</sup> . . . . .	.137	4.81	.055	.047
Educational attainment . . . . .	.169	5.83	.067	.057
Other family income <sup>2</sup> . . . . .	-.030	-4.55	-.012	-.010
Not 'married, spouse present' . . . . .	.160	0.69	.064	.054
Number of children . . . . .	-.252	-3.80	-.101	-.086
Youngest child age 0-5 . . . . .	-.568	-3.84	-.227	-.193
Youngest child age 12 or over . . . . .	.447	2.22	.178	.152
No children . . . . .	-.116	-0.38	-.046	-.039
Constant . . . . .	-.927	—	—	—
-2 × log likelihood ratio . . . . .	180.3	—	—	—
Mean of dependent variable . . . . .	.655	—	—	—
Sample size . . . . .	553	—	—	—

<sup>1</sup> Number of times between 1968 and 1975 that the respondent indicated plans to work at age 35.

<sup>2</sup> Not including respondent's earnings; measured in thousands of dollars.

**Table 5. Work experience equation, controlling for work plans<sup>1</sup>**

Independent variables	Coefficient	t
Plans for work at age 35 <sup>2</sup> . . . . .	.128	4.83
Educational attainment . . . . .	.111	4.62
Years with child age 0-5 <sup>3</sup> . . . . .	-.369	-7.52
Years married <sup>3</sup> . . . . .	-.188	-4.26
Married more than once . . . . .	.392	2.38
Constant . . . . .	1.269	—
R <sup>2</sup> . . . . .	.216	—
F ratio . . . . .	33.41	—
Sample size . . . . .	588	—
Mean of dependent variable . . . . .	2.11	—

<sup>1</sup> Dependent variable is years worked between 1976 and 1980, measured by dividing the number of weeks worked during the interval by 52.

<sup>2</sup> Number of times between 1968 and 1975 that the respondent indicated plans to work at age 35.

<sup>3</sup> Between 1976 and 1980.

other family income, number of children, and marital status. However, among women who had consistently indicated plans for work at age 35, fertility (including both ages and numbers of children) was the sole significant determinant of labor force participation. The labor force participation of women in the intermediate group was responsive to their educational attainment, other family income, and fertility.

### Meeting expectations?

These results are useful in understanding what determines whether or not a young woman's early work expectations are realized. Half of the women who consistently indicated no plans for work at age 35 were nonetheless in the labor force at that age. The results in table 6 suggest several possible reasons for "unexpected" labor force participation. First, economic insecurity, whether due to the absence of a husband or to low income, caused some women to work although they had not planned to do so. Second, higher levels of education (and hence greater earnings potential) led to changes in plans, either because the earnings forgone by remaining at home were too great or because the housewife role was less satisfactory than the women had anticipated, especially for women with access to good jobs.<sup>12</sup> Third, women with small families could more easily change their plans and go to work if either of the first two factors came into play. However, it is interesting to note that the age of the youngest child was not a significant influence for this group of women who were strongly committed to home-oriented activities.

About 1 in 6 women with strong early work expectations were not in the labor force at age 35; these women were primarily those who had a preschooler or perhaps, in some cases, had more children than originally expected. Some women with large families may also have found combining work and childraising more difficult than they had anticipated.<sup>13</sup> This family-work conflict appears to cut across all education and income levels. However, it should be noted again that the great majority of women who were strongly committed to work were able to realize their plans; and some



of those who did not were likely to have been out of the labor force only temporarily.

### Relating work plans to higher wages

We have seen that many women in their mid-thirties were working in 1980 even though they had not been consistently planning to work. How important an effect does planning ahead have on women's wages? To answer this question, we estimated wage equations for the National Longitudinal Surveys' respondents ages 34-36 in 1980. The dependent variable was the natural logarithm of the hourly wage rate, and explanatory variables were years of school completed, years of work experience (the number of years that the respondent was employed for 6 months or more), years of tenure at the current job, residence in a Standard Metropolitan Statistical Area, and residence in the South. In addition, we also included a variable measuring the number of times between 1968 and 1975 that the respondent indicated plans for work at age 35, as well as interaction terms between this work-plans variable and years of work experience and job tenure. The human capital hypothesis that women with greater expectations of market work would have experience-wage profiles that are steeper and begin lower than those of women without strong work expectations implies that the coefficient of the plans-experience interaction term should be positive while the coefficient of the work-plans variable itself should be negative.<sup>14</sup>

Equation 1 of table 7 reports the estimated coefficients of the wage equation described in the preceding paragraph. Schooling, work experience, tenure, and residence in a Standard Metropolitan Statistical Area are all significantly related to wages. However, the plans-experience interaction term has a negative and insignificant (rather than the hypothesized positive) coefficient, and the work-plans variable is positively (rather than negatively) and significantly related to wages. The plans-tenure interaction is also insignificant. Excluding the interaction terms (equation 2) yields similar results: women with early plans for work are paid significantly more, other things equal, than their counterparts without early expectations of future market work. The coefficient of the work-plans variable in equation 2 implies that a woman with plans to work at age 35 in each of the first 7 years of the NLS would at age 35 be paid almost 30 percent more, other things equal, than a woman with no work plans.<sup>15</sup>

The evidence in table 7 thus provides support for the human capital hypothesis that early work plans will result in higher future wages. We find that, among white women in their mid-thirties (with an average of more than 10 years of work experience), those with stronger early expectations of adult work activity have significantly higher wage rates. However, no evidence was found for the difference in experience-wage profiles implied by human capital theory and found earlier by Sandell and Shapiro.<sup>16</sup> The difference between our present findings and this earlier result may be due in part to the narrower age range used in our analysis.<sup>17</sup>

Our results lend support to the finding of Reuben Gronau<sup>18</sup> that the skill requirements of women's jobs and hence the amount of on-the-job training they receive are unrelated to their plans for quitting. Gronau argues that regardless of their work plans, women's opportunities to obtain skill-intensive jobs may be limited because of employers' misconceptions about women's work attachment.

In an effort to explore further the link between early work expectations and subsequent earnings, we examined the occupations that women with plans for work indicated they would like to be engaged in at age 35. In equation 3, we replaced the single work-plans variable with two variables measuring the number of times the respondent expressed plans for work in the specific (3-digit) occupation in which she was employed in 1980 and the number of times she indicated plans for work in other occupations. To the extent that job skills are occupation-specific, early plans for work in the 1980 occupation should have a greater impact on wages than plans for work in other occupations. To the extent that job skills are transferable across occupations, however, early work plans for other occupations should still contribute to higher wages in 1980. The results indicate that both plans for the specific 1980 occupation and plans for other occupations are significantly related to 1980 wage rates, and the coefficient of the specific-occupation plans variable is almost twice as large as the coefficient of the other-occupation plans variable.<sup>19</sup> Apparently, women who make realistic plans and acquire necessary skills fare best in the labor market.

**Table 6. Probit maximum likelihood estimates for labor force participation equations, by number of times respondent indicated work plans**

Independent variables	Number of times with plans to work					
	0-1		2-5		6-7	
	(1)	(2)	(1)	(2)	(1)	(2)
Educational attainment . . .	.138**	.143**	.231**	.171**	.083	.077
Other family income <sup>1</sup> . . .	-.035**	-.034**	-.029**	-.030**	-.030	-.024
Not "married, spouse present" . . .	.835	.769†	.241	.129	-.482	-.383
Number of children . . .	-.254*	-.220*	-.220*	-.262**	-.362*	-.338*
Youngest child age 0-5 . . .	-.161	—	-.796**	—	-.804*	—
Youngest child age 12 or over . . .	.214	—	.775**	—	-.024	—
No children . . .	-.571	—	.025	—	2.449	—
More children than expected <sup>2</sup> . . .	—	-.472	—	-.789*	—	-.602
Fewer children than expected <sup>3</sup> . . .	—	-.335	—	.094	—	.169
Constant . . .	-.544	-.629	-1.339	-.509	1.679	1.416
-2 × log likelihood ratio . . .	40.1	40.3	89.5	71.5	29.6	25.8
Mean of dependent variable . . .	.493		.657		.838	
Sample size . . .	152		271		130	

<sup>1</sup> In thousands of dollars.

<sup>2</sup> Dummy variable equal to one if the actual number of children in 1980 exceeds the number of children expected in 1973; otherwise equal to zero.

<sup>3</sup> Dummy variable equal to one if the actual number of children in 1980 falls short of the number of children expected in 1973; otherwise equal to zero.

NOTE: Coefficient in probit equation is significant at: \*\* .01 level.  
\* .05 level.  
† .10 level.

## Conclusions

When they were in their early twenties, young women in the National Longitudinal Surveys sample greatly underestimated their future work involvement. Expectations for working at age 35 gradually increased, but up until about 3 years before the women actually reached that age, women in the sample continued to underestimate the likelihood of working.

Plans for working were significant independent predictors of actual work behavior. After controlling for other factors affecting labor force participation, a woman who consistently planned to work had a probability of working that was about 30 percentage points higher than did a woman who consistently planned not to work. More than 80 percent of the women who answered the plans to work question positively at least 6 times out of 7 were actually in the labor force in 1980. However, nearly half of the women who had expressed no intention to work in at least 6 of 7 interviews were nevertheless actually in the labor force when they reached age 35. For this latter group, economic factors had the largest impact on actual labor force participation; these women apparently worked although they planned not to because divorce or their husbands' low income made working necessary or because their own level of education made the earnings forgone by staying at home too large to ignore. Women who had planned to work at age 35 were likely to do so unless they had large families or a preschool child.

Planning to work yielded a significant wage advantage. Women who had consistently planned to work had wages that were nearly 30 percent higher than those of women who had never planned to work. However, unlike the earlier results reported by Sandell and Shapiro, ours showed no evidence of greater returns to work experience among women who had planned to work. Our research implies that planning their working lives is important for women's wages, but that this effect must operate, not through faster

**Table 7. Wage equations, controlling for work plans**

Independent variables	(1)		(2)		(3)	
	$\hat{\beta}$	t	$\hat{\beta}$	t	$\hat{\beta}$	t
Plans for work at age 35 <sup>1</sup> . . . . .	.054	2.17	.036	3.58	—	—
Plans for work in 1980 occupation <sup>2</sup> . . . . .	—	—	—	—	.054	3.55
Plans for work in other occupations <sup>3</sup> . . . . .	—	—	—	—	.029	2.66
Plans for work x years of work experience . . . . .	-.002	-0.96	—	—	—	—
Year of work experience . . . . .	.035	3.12	.025	4.46	.025	4.34
Plans for work x tenure at current job . . . . .	.001	0.53	—	—	—	—
Tenure at current job . . . . .	.027	2.21	.033	5.32	.031	4.95
Educational attainment . . . . .	.069	7.21	.069	7.25	.066	6.90
Residence in Standard Metropolitan Statistical Area . . . . .	.144	2.96	.141	2.92	.145	3.00
Residence in South . . . . .	-.032	-0.68	-.034	-0.72	-.034	-0.71
Constant . . . . .	4.619	—	4.690	—	4.738	—
$\bar{R}^2$ . . . . .	.361	—	.364	—	.367	—
F ratio . . . . .	22.35	—	29.75	—	25.95	—
Sample size . . . . .	303	—	303	—	303	—

<sup>1</sup> Number of times between 1968 and 1975 that respondent indicated plans to work at age 35.

<sup>2</sup> Number of times respondent indicated plans to work in 1980 occupation.

<sup>3</sup> Number of times respondent indicated plans to work in other occupations.

wage growth, but through their having better paid jobs at all levels of work experience.

Young women in their late teens and early twenties today appear to have much stronger work expectations than the women we studied here.<sup>20</sup> Therefore, in the future fewer women may find themselves in low-wage jobs because they had never planned to work.<sup>21</sup> Whether young women have also become more adept at occupational planning is not certain. Our research shows that women whose occupational plans are realized have higher wages than their counterparts who do not achieve their occupational goals. This finding suggests that providing young women with information about labor market trends and prospects has a potentially high payoff. □

### FOOTNOTES

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<sup>1</sup>See, for example, Jacob Mincer and Solomon W. Polachek, "Family Investments in Human Capital: Earnings of Women," *Journal of Political Economy*, March/April 1974 supplement, pp. S76-S108; Jacob Mincer and Solomon W. Polachek, "An Exchange: Theory of Human Capital and the Earnings of Women: Women's Earnings Reexamined," *Journal of Human Resources*, Winter 1978, pp. 118-34; Solomon W. Polachek, "Differences in Expected Post-School Investment as a Determinant of Market Wage Differentials," *International Economic Review*, June 1975, pp. 451-70; Solomon W. Polachek, "Discontinuous Labor Force Participation and Its Effects on Women's Market Earnings," in Cynthia B. Lloyd, ed., *Sex Discrimination and the Division of Labor* (New York, Columbia University Press, 1975), pp. 90-122; and Yoram Weiss and Reuben Gronau, "Expected Interruptions in Labour Force Participation and Sex-Related Earnings Growth," *Review of Economic Studies*, 1981, pp. 607-19.

<sup>2</sup> Polachek has been the leading proponent of this view. In addition to the papers cited in the previous footnote, see also Solomon W. Polachek, "Occupational Segregation: An Alternative Hypothesis," *Journal of Contemporary Business*, 1976, pp. 1-12; Solomon W. Polachek, "Sex Differences in College Major," *Industrial and Labor Relations Review*, July 1978, pp. 498-508; and Solomon W. Polachek, "Occupational Segregation Among Women: Theory, Evidence and a Prognosis," in Cynthia B. Lloyd, Emily Andrews, and Curtis Gilroy, eds., *Women and the Labor Market* (New York, Columbia University Press, 1979), pp. 137-57. The ability of the human capital approach to account for observed male-female differences in wages and occupations has been questioned in Steven H. Sandell and David Shapiro, "The Theory of Human Capital and the Earnings of Women: A Reexamination of the Evidence," *Journal of Human Resources*, Winter 1978, pp. 103-117; Mary Corcoran and Greg J. Duncan, "Work History, Labor Force Attachment, and Earnings Differences Between the Races and Sexes," *Journal of Human Resources*, Winter 1979, pp. 3-20; Paula England, "The Failure of Human Capital Theory to Explain Occupational Sex Segregation," *Journal of Human Resources*, Summer 1982, pp. 358-70; and Andrea H. Beller, "Occupational Segregation by Sex: Determinants and Changes," *Journal of Human Resources*, Summer 1982, pp. 371-92.



<sup>3</sup> A complete description of the NLS young women's sample may be found in Center for Human Resources Research, *The National Longitudinal Surveys Handbook* (The Ohio State University, 1986).

<sup>4</sup> Steven H. Sandell and David Shapiro, "Work Expectations, Human Capital Accumulation, and the Wages of Young Women," *Journal of Human Resources*, Summer 1980, pp. 335-53.

<sup>5</sup> In a preliminary analysis, black women's work plans were only weakly associated with later work behavior. Either black women were more likely to encounter obstacles to the realization of their plans or they interpreted the question differently from white women. Because sample sizes are small and the results are not clear cut, analyses throughout the entire article are limited to the white sample.

<sup>6</sup> It seems plausible to suggest that part of the increase between 1968 and 1969 in the percentage of women planning to work at age 35 resulted from the change in the wording of the question. The trend toward greater work expectations over time is, nonetheless, readily apparent even without the data for 1968.

<sup>7</sup> Among those women in the latter category, just over half manifested no clear pattern over time in their work expectations. The remainder of these women fell into three groups: those who initially had no plans for work at age 35, then for a time expressed such plans before finishing with no future work plans; a converse group, consisting of women who began with expectations of future work, then for a time expressed no such plans before returning to their initial expectations; and a small group of women who began with plans for future work but eventually abandoned those plans.

<sup>8</sup> Regressions of educational attainment on family background variables plus a dummy variable for plans to work at age 35 as expressed in 1968 or 1969 indicate that young women with expectations of future work complete an average of roughly half a year of schooling more than those without future work plans, other things equal. Because schooling undoubtedly influences work expectations, as well as vice versa, this half-year difference should not be regarded as the "effect" of work expectations on schooling.

<sup>9</sup> These results were obtained by evaluating the labor force participation and weeks worked equations at the mean of all explanatory variables except work plans. Number of times planning to work was first set equal to seven and then equal to zero and the results compared to obtain the reported measures of the effect of work plans.

<sup>10</sup> A test for the significance of differences between equations is not readily available for probit analysis. However, we used the Chow test to determine whether the comparable ordinary least squares equations for the three groups were significantly different from each other. Each pairwise comparison revealed significant differences. Because the probit and ordinary least squares results were similar, we conclude that equations for the three groups are probably significantly different. To obtain slope coefficients at different values of the dependent variable in these equations, the probit coefficients may be multiplied by the following: at the maximum, which is also approximately the mean for 0-1 plans, by .399; at the mean for 2-5 plans, by .368; and at the mean for 6-7 plans, by .245.

<sup>11</sup> The coefficients on this variable do not consistently attain conventional levels of statistical significance. Note, however, that most of the total effect of not having a husband will be reflected in lower other family income, and the largest (in absolute value) effects of this variable are for women without future work plans. Overall, then, it appears that the absence of a husband contributes indirectly and, to a lesser degree, directly to higher labor force participation, with both effects being strongest among women with the weakest attachment to the work force.

<sup>12</sup> Labor market conditions for well-educated women may well have improved during the 1970's, leading to job opportunities that were better than women had earlier anticipated. Elsewhere we have presented evidence that the payoff to education among women in their early thirties was greater

in 1978 than in 1967, and that women's labor force participation was more responsive to their earnings potential at this later date. See David Shapiro and Lois B. Shaw, "Growth in the Labor Force Attachment of Married Women: Accounting for Changes in the 1970s," *Southern Economic Journal*, October 1983, pp. 461-73.

<sup>13</sup> Women with strong work plans had slightly larger families, but fewer preschool children, than other women in 1980. The birth expectations of all three groups were similar as of 1973.

<sup>14</sup> The plans-tenure interaction term tests for differential investment behavior in the current spell of employment. However, because average tenure was 5 years, many women may have changed their work plans after their current employment began. In this case, any effect of early plans on investment would be attenuated. See Sandell and Shapiro, "Work Expectations," for further discussions.

<sup>15</sup> Because the wage equation is semilogarithmic, the effect of 7 versus 0 years of plans for work is calculated as  $(e^{7(.036)} - 1) = .287$ .

<sup>16</sup> See Sandell and Shapiro, "Work Expectations." To test more fully for the presence of differences in the slopes and starting points of the experience-wage profiles, we examined the robustness of our results in several ways. We first estimated wage equations with a quadratic specification of work experience and with the corresponding interaction terms. The quadratic terms and corresponding interactions were not significant. Similarly, elimination of either interaction term from equation 1 of table 7 did not change the basic results. Finally, we used the lambda probit technique (James J. Heckman, "Sample Selection Bias as Specification Error," *Econometrica*, January 1979, pp. 153-61) to correct for possible sample selection bias. The coefficient on lambda was insignificant and the coefficients on other variables in the analysis were affected very little. In addition, we examined the frequency distributions of work experience for women with differing work expectations. Our thought was that the absence of significant differences in the experience-wage profiles might reflect a paucity of observations of women who combined strong expectations of future work with very limited work experience, and of women without work plans, but with extensive work experience. However, this was not the case; considerable variation in accumulated work experience was evident within each work-plans group.

<sup>17</sup> When the regressions in table 7 were repeated for the entire NLS sample, ages 26-36, the results were similar to those of Sandell and Shapiro, "Work Expectations,"; women with work plans had lower initial wages, but steeper wage growth paths than women with no plans for working. This finding suggests that combining the experiences of different cohorts may sometimes produce spurious wage-growth profiles that do not describe the experience of any one age group.

<sup>18</sup> Reuben Gronau, *Sex-Related Wage Differentials and Women's Interrupted Labor Careers—The Chicken or the Egg*, Working Paper No. 1002 (Cambridge, MA, National Bureau of Economic Research, October 1982).

<sup>19</sup> It should be noted that our occupational work-plans variables undoubtedly contain a good deal of measurement error, particularly given our use of 3-digit occupational codes. For example, a respondent might have plans for the same occupation each year, but slight variations in how she describes the occupation could lead to coding errors. Also, we have not made any allowance here for the existence of "families" of occupations (clusters of 3-digit occupations that share common skill requirements to a high degree).

<sup>20</sup> David Shapiro and Joan E. Crowley, "Aspirations and Expectations of Youth in the United States: Part 2. Employment Activity," *Youth and Society*, September 1982, pp. 33-58.

<sup>21</sup> Of course, the extent to which women will be disproportionately concentrated in low-wage jobs will depend not only on their work plans, but also on employers' perceptions of women's work commitment and their willingness to hire women for high-skill jobs.

# Successful worker training programs help ease impact of technology

*Fast pace of technology proves need for skill upgrading and worker retraining; labor contracts and State initiatives can be models for such programs*

STEVEN DEUTSCH

The impact of technological change beginning with the large-scale introduction of factory automation in the 1950's and 1960's has sparked major interest in worker training and retraining. Many Bureau of Labor Statistics studies have explored job displacement, job changes, and the impact of technology upon the work force.<sup>1</sup> In the 1960's, substantial growth in public sector and service sector employment made some of the factory dislocation effects appear less serious at the national level. However, extensive application of microelectronics since the late 1970's has increased interest in upgrading workers' skills and retraining employees for job shifts.

The dislocation phenomenon has been of substantial magnitude, particularly in traditional manufacturing, but in non-manufacturing as well. Studies by the Bureau of Labor Statistics and the Office of Technology Assessment have documented the seriousness of the problem and the great need for retraining efforts.<sup>2</sup> As the issue of worker retraining gains more attention, it is critical to explore successful efforts at technology planning and worker retraining in order to assist in policy formation and program developments. This is especially important since the growth of high tech jobs is modest and the evidence suggests a preponderance of new job creation is in low-paid employment.<sup>3</sup> The impact of

technological change upon employment, skills training, and the work environment will continue to be a major theme in the coming years.<sup>4</sup> This article highlights some innovative and important approaches to employee training and retraining in anticipation of and in response to technological change. These include both collectively bargained arrangements and new State initiatives that are suggestive for future developments.

## Aerospace

Worker retraining needs are most understood in industries where the technology has changed dramatically, like the aerospace industry. Anticipating change is part of ongoing corporate planning and the best use of new technology is a high priority in the scheme to remain competitive. Involving the work force in this planning and gearing up in advance for retraining have been built into the arrangements at Boeing Aircraft Co. and the International Association of Machinists and Aerospace Workers (IAM). Their contract states:

### *Section 20.2 Technology Briefings.*

In order that employees can better prepare themselves for the skill requirements of the future, and in fulfillment of its obligation to provide information to the Union, the Company will, not less than annually, provide a briefing to the Union of the company's plans for the introduction of new technology which may affect the employees. For the purpose of these briefings, new technology shall be defined as industrial robots, flexible manufacturing systems, CAD/CAM (Computer-Aided Design/Computer-Aided Manufacturing) and graphite composite automation. . . . During these briefings, the Company will inform the Union of anticipated

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schedules of introduction of new technology, and will identify areas of skill impacts and any intended training programs associated with those impacts. Additional related subjects may be added to the briefings upon mutual agreements, and established technologies may be deleted. The Union, and its representatives, will protect the confidentiality of Company sensitive and proprietary information disclosed in the briefings.

### **Section 20.3 Training Program.**

Section 20.3(a) Joint Training Advisory Committee. A joint training advisory committee shall be established, composed of three representatives of the Company and three members of the Union's Staff designated by the Union. Within one year from the date of this agreement the Training Advisory Committee will develop a recommended training program for current and laid-off Company employees who desire to become better qualified for employment by the company in jobs involving new technology as defined in Section 20.2, or other skills identified by the Company (Collective Bargaining Agreement, 1983: 117-18).

New technology has reduced Boeing's work force and changed its skill requirements. Numerical control machines in shop production and computer-aided designing have resulted in critical job shifts for workers.<sup>5</sup> The Boeing-IAM training program was negotiated with the hope that a jointly supported effort would upgrade employees' skills, making those with obsolete skills once again employable by the firm. It is still too early to measure the results, but communications between the company the union seem to be proceeding well, and the initial assessment of skill needs and training suggests that the program is properly focused and potentially valuable.

One of the more interesting International Association of Machinists and Aerospace Workers cases occurred at the U.S. Naval Research Lab in Annapolis, MD. There, the union succeeded in building into the collective bargaining agreement technology-relevant language, which provided for no job displacement because of technology and also prohibited time-motion studies and electronic workplace monitoring. In the conversion of the machine shops to numerical control machines, all workers were given numerical control machine training and the union worked with management to redesign the machines both for productivity and worker consideration. The training, conducted by Arundel Community College, shifted from direct training of machinists to a "train the trainer" effort so that upgraded workers would constantly be able to train other workers. This concept is one that is deserving of broader attention by other companies and unions.

Also, the union has moved to implement technology training at its national education center. All union members who participate in educational programs receive computer instruction. In addition, special programs on technological change are being developed to prepare union officials to respond effectively to such change.<sup>6</sup> This is a critical part of the International Association of Machinists and Aerospace Workers strategy to represent its membership in the context of technological change. The philosophy of the union is

contained in its "Worker's Technology Bill of Rights,"<sup>7</sup> which is a cornerstone of its approach to dealing with job security, retraining, and the broader issues of job protection for its work force and economic health of the country.

### **Auto assembly**

The automobile assembly industry also has undergone enormous changes in the application of technology, production systems, and corporate restructuring. Early automation in the 1950's and 1960's offered a preview of the widespread changes in the late 1970's and the 1980's. Technology, job skill obsolescence, and retraining have been longstanding issues in the industry. In 1982, both Ford Motor Co. and General Motors negotiated agreements with the United Auto Workers (UAW) union calling for worker retraining programs, to be financed by an employer contribution of 5 cents per hour. This amounts to about \$10 million yearly for Ford and \$40 million for General Motors. The 1982 negotiations also established the UAW-Ford National Development and Training Center and the UAW-General Motors Skill Development and Training Center. The February 13, 1982, letter of understanding between Ford and the UAW suggests some of the retraining objectives:

Provide individual and group training, retraining and development opportunities to enhance the dignity and on-the-job skills and abilities of employees which can lead to greater job security and personal development.

Seek ways of arranging (and, in some cases, providing) for training, retraining and development assistance for employees displaced by new technologies, new production techniques and shifts in customer product preference.

The 1982 Ford-UAW agreement states:

In view of the Corporation's interest in affording maximum opportunity for employees to progress with advancing technology, the Corporation shall make available, short-range, special training programs for those employees who have the qualification to perform the new or changed work, where such programs are reasonable and practicable (Agreement, 1983: 432).

One of the most heralded success cases of a joint company-union effort concerning job dislocation is the Ford-UAW program in Milpitas, CA.<sup>8</sup> Like other successful training programs, this one was well funded, jointly administered with a union, extensive in its range of programmatic activities, and within the broader company-union employee involvement bargaining agreement and philosophy.

In 1982, Ford announced that it would begin to close the Milpitas plant in 1983 (finally closed in 1984). The advance notice given the work force was required by contract, and the posture of the company was one of cooperating with the union and government to best provide the needed support services, counseling, basic education, skills retraining, and job search training for the more than 2,000 affected employees. The work force at this plant was overwhelmingly male and married, had an average age of 42, and had an average of almost 16 years service among the hourly work-

ers; furthermore, more than one-third of the workers had less than 11 years of schooling. In short, it was a highly stable work force with modest work experience and training outside auto production—something characteristic of much of the displaced worker population in the United States in recent years.<sup>9</sup> The advance notice and careful planning allowed for the development of a placement center with both financial and technical support from the UAW–Ford National Development and Training Center and, in this instance, also from the Job Training Partnership Act Title III, Trade Adjustment Assistance, and the State of California Training Employment Panel (a State-funded program in operation since 1982 designed to assist and train workers who are displaced or likely to have major job impacts as a result of corporate restructuring and technological change).

The Ford–UAW program started with the testing and counseling of affected workers and the provision of in-plant planning seminars and basic adult education; then, the program continued helping to identify opportunities for targeted vocational retraining, including the negotiated tuition payment for such institutional training. Finally, training in job search skills was given and targeted employment opportunities with on-the-job training were provided.<sup>10</sup> The United Autoworkers Union reports that 2,800 persons enrolled for in-plant vocational training orientation sessions, and 750 enrolled in full-time vocational retraining programs, with 500 receiving technical training. Furthermore, 438 employees went through a job search skills workshop, and 800 took adult basic education courses with 183 completing high school diplomas or equivalents.

An updated report to the U.S. Department of Labor confirms that only 17.6 percent of the Milpitas displaced workers remained unemployed 2 years after closure; also, a strong correlation exists between participation in the testing and assessment programs (70 percent) and the education and training programs (30 percent) and success at gaining new employment and in obtaining higher wage positions after termination at Ford. On-the-job training opportunities led to the greatest post-layoff employment and suggest the importance of linking job retraining to real employment opportunities.

More than 84,000 UAW–General Motors dislocated members have received services since the early 1980's, and more than 81 percent have found employment either within or outside General Motors. Initially, most programs were targeted for dislocated workers, but the emphasis has shifted to providing services for active General Motors employees. At Ford more recently, the emphasis has been increasingly on skills enhancement, life/education planning, educational and training assistance, targeted training, education fairs, and so on.

### Telecommunications

American Telephone and Telegraph (AT&T), prior to its division into separate companies in 1983, was the world's largest private employer and considered by many analysts as

a model of corporate efficiency and economic health. In recent years, the telecommunications industry has gone through dramatic changes in technology resulting in major shifts in occupations and job tasks. For example, in 1950, there were 250,000 telephone operators; by 1983, this number had dropped to 83,000 and was declining further, while the amount of telephone service had expanded.<sup>11</sup> Starting with the 1980 contract with the Communications Workers of America (CWA), the employer was required to give at least 6 months' advance notice "for any major technical change (including changes in equipment, organization, or methods of operation) which affects employees represented by the union." This agreement was renewed in 1983 and 1986. Between 1982 and 1984, employment in telecommunications declined 11 percent, or 114,000 workers, and by 1985 the decline was 13 percent.<sup>12</sup>

Few industries have had a more dramatic development and application of new technology than telecommunications. Added to that has been the substantial corporate restructuring and new competitive environment. The 1983 AT&T–CWA contract, recognizing that technology was having a profound impact on jobs, included a key section on retraining. Equally important, the contract also recognized that "technological change" was likely to result in some layoffs or other adverse effects and established programs to protect employees. Under that contract extending the 1980 provision, an employee laid off because of technological change is eligible for severance benefits that can amount to up to 2 years' pay, depending on the worker's length of service. It also enabled displaced workers who are preparing for other lines of work to receive up to \$2,500 in relocation and retraining costs, with a continuance in their health insurance coverage.

At the bargaining table in 1983, the negotiators agreed informally that \$36 million was to be spent by AT&T and the Bell companies for retraining employed workers over the 3-year life of the agreement. Although the money was not contractually stipulated, some impressive programs were developed over those years in which the company and union actively, and in a cooperative fashion, developed retraining programs designed to upgrade skills in anticipation of the technological shifts in the industry.<sup>13</sup> The training programs initiated by management, with Communication Workers of America oversight through a joint union-management Training Advisory Board, included a mix of home-study (basic skills and electronics to increase women's opportunities) and college training, but concentrated heavily on the former.

Some of the best training programs have been strongly based upon a joint labor-management approach,<sup>14</sup> coupled with the larger quality-of-working life approach the company and union have developed since 1980.<sup>15</sup> For example, Northwestern Bell, based in Omaha, NE, has a joint labor-management training board that contracted with 43 community colleges and vocational–technical schools in the region to provide career counseling and training. More than one-



third of the eligible employees enrolled in counseling, training, or both, and the college course dropout rate was less than 5 percent. The program also provides career counseling prior to substantive courses. Open-ended career counseling broadens the repertory of courses that might be selected and thus, provides training for employment beyond the Bell company; however, it is not as open ended as some programs, such as the United Auto Workers union plan with Ford and General Motors. The emphasis in all of the CWA-AT&T-Bell Companies retraining programs is for employed personnel and not displaced workers, although there was a 14-percent job loss between the 1983 and 1986 contracts.

Another of the success cases in the telecommunications industry involves training employees in cost accounting, new billing procedures, and electronics. This effort at Pacific Northwest Bell has been highly cost-effective for the company as it provided an expansion of contracted services and thus, helped to assure job security for the work force.<sup>16</sup> This effort went beyond the contractual obligations of the company in the 1983 agreement, but the program is an illustrative and useful model for the post-1986 contract and the new jointly administered training program funds.

In 1986, the Communications Workers of America negotiated separately with AT&T and the Bell operating companies. In most of these contracts, the companies agreed to fund off-hours training programs. The contract with AT&T provides \$7 million per year to the CWA-AT&T Alliance for Employee Growth and Development, a jointly owned and administered corporation, to provide career counseling and retraining efforts for active employees and those who are laid off, providing they enroll within 6 months. The training will be delivered by schools and colleges. This effort targets the 155,000 CWA-represented employees at AT&T; somewhat similar efforts are built into the contracts with the Bell operating companies, although the contracts do not call for the creation of independent jointly administered training corporations. Career counseling, general skills training including basic and remedial education, and job-specific training both for the company and any new employer are to be included in these programs. The high participation rates and low dropout rates in experimental training programs in the industry are encouraging. The move to a jointly run labor-management program with AT&T, well funded and heavily designed to improve job security and skills upgrading, suggests that this effort may reap solid benefits in the near future.

### **Human Resource Development Institute**

The Human Resource Development Institute is the employment and training arm of the AFL-CIO and has operated a number of programs since the 1960's. In 1982, substantial programs focused on displaced workers and the Human Resource Development Institute had a field staff of 100; this staff was drastically cut back because of slashed Federal expenditures for employment and training and the shift from the Comprehensive Employment and Training Act to the

Job Training Partnership Act. With a small staff, the Human Resource Development Institute runs workshops on developing an effective model program, and targets training of labor union members for Job Training Partnership Act committees and as staff for displaced worker programs. Most of the programs are "tier one" level, meaning that labor union members participate in peer counseling, labor market and job analysis, vocational testing and counseling, and referral to job training.

Fundamental to the Human Resource Development Institute operation is a philosophy that accents peer counseling, noting the success in such efforts with alcohol and drug treatment, runaway youth programs, and so on. The Human Resource Development Institute Job Clubs use trained displaced workers as counselors for other workers; the assumption is that affected workers know best what is involved in the job, including the necessary skills and technical knowledge. This program also "reaffirms the value in 'workers' work" and rejects the implicit assumption that after 20 years in a steel plant, a laid-off worker's life has no value—something that the Human Resource Development Institute staff believe contributes to self-depreciation and demoralization.

A major thrust of the Human Resource Development Institute in the past year or so has been assistance to unions pushing for career development within union collective bargaining agreements. Out of a computer-aided instructional model in their Job Training Partnership Act Title III program in Baton Rouge, LA, the Human Resource Development Institute is getting various employers in the steel industry (LTV and Bethlehem, among others) and the United Steelworkers of America union to include such career development and training in their contracts, anticipating both continuing employment loss in the basic steel industry and the need for skills upgrading in response to the technological changes in basic steel and steel parts production. Laid-off steelworkers will thus be eligible for company-financed job retraining, building upon job skills and work experience.<sup>17</sup>

One of the "second tier" training programs that the Human Resource Development Institute has developed has been the Southeast Wisconsin Displaced Worker Center in the Kenosha, WI, area. Here, American Motors Corp. went from 7,000 employees to 2,800, with additional layoffs expected. In contrast to the United Auto Workers union agreement with General Motors and Ford, at American Motors no training fund was established. Therefore, in 1985 as the situation became more severe, the United Auto Workers moved to set up an assistance program. American Motors provided \$1,600 to get a grant proposal writer, provided through the Human Resource Development Institute, enabling the first Job Training Partnership Act Title III funds to come in October 1985. The Human Resource Development Institute did staff training (9 out of 12 staff are displaced American Motors workers), and 1,700 displaced workers attended the opening meeting in January 1986. From January to September 1986, 48 4-day job search workshops were conducted dealing with stress and coping skills.

The first targeted group were those who enrolled and had to quit due to financial constraints; 823 were certified eligible and 780 enrolled under the Job Training Partnership Act auspices. On-the-job training has been contracted with the State job service; classroom training has taken place at Gateway Technical Institute and the University of Wisconsin at Parkside. The Southeast Wisconsin Displaced Worker Center must operate under Job Training Partnership Act guidelines; for example, wages must be 60 percent of those received before layoff (about \$13 per hour). Thus, to receive \$8.60 plus per hour, many of the trainees have to commute substantial distances to new jobs, because the immediate area is experiencing a highly depressed wage market with high unemployment. A job developer was added to the staff in June 1986, and after a needs assessment revealed that 1 person out of 5 in Kenosha County is functionally illiterate, a literacy council was started. Most autoworkers needed little educational background for their employment and virtually no on-the-job skills were learned at American Motors. The program has identified those who need special remedial skills training so that they may reenter the labor market and successfully compete.

The United Auto Workers union has sought to obtain Trade Adjustment Assistance Act support to complement the Job Training Partnership Act funding for the Southeast Wisconsin Displaced Worker Center. This allows for up to 2 years of stipends for training, something disallowed under the Job Training Partnership Act. Also, a special grant for on-the-job training was provided for fall 1986 in anticipation of some worker recalls as Chrysler planned to lease the facility from American Motors. But, the Job Training Partnership Act limitations (no stipend, but support services such as mileage, day care, small assistance for tools and relocation) were a serious challenge for this program. The Human Resource Development Institute and local project staff emphasize that new technology requires more training with longer training periods and that Job Training Partnership Act Title III is limited in this regard. Thus, they have done some slotted training in the technical school and sought second-year funding through the Trade Adjustment Assistance Act and the State of Wisconsin so that displaced autoworkers may learn police science, nursing, and other fields that require more training. Some of the technical college programs teach machine operators numerical control machine, computer repair, engineering, and matched skills that lead to ongoing career development training. This project concludes that "short-term training (Job Training Partnership Act) leads only to short-term jobs."

### State initiatives

The cases reviewed thus far are private sector negotiated cases involving employers and unions. In addition, there have been some interesting new initiatives taken at the State level, typically in partnership with labor and management. California and Massachusetts provide good illustrations and possible models.

*California.* The State of California experienced a substantial number of plant closings starting in the late 1970's and accelerating in the early 1980's, a pattern similar to that in much of the country. Many of the plants were large manufacturing facilities for Fortune 500 corporations including Ford, General Motors, Kaiser, Firestone, and Atari. Mainly as a reaction to the challenge of retraining displaced workers and upgrading the skills of the work force because of technological change, the State created the California Employment Training Panel in 1982. It is funded by a tax on employers linked to unemployment insurance payments and has had \$55 million annually to spend on retraining programs. The Employment Training Panel "states that a principal goal of active retraining is to encourage the adoption of new technology, thus helping California businesses to stay productive and competitive. The effect, besides avoiding immediate loss of jobs, is to make future employment more secure."<sup>18</sup> This makes the Employment Training Panel different from the Job Training Partnership Act Title III programs because eligibility for the Title III programs is displacement or announcement of layoffs.

The initial impetus for the Employment Training Panel legislation was the rash of plant closings, mostly affecting blue-collar production workers in the late 1970's and early 1980's; however, one-third of the Employment Training Panel programs have been targeted towards white-collar workers. The electronics firms in Silicon Valley have experienced a changed economic climate due to international competition, and a recent report states that 17,500 jobs have been lost in the past 2 years with more losses predicted.<sup>19</sup> The theory and the practice of the Employment Training Panel, according to one evaluation, is that "the availability of Panel funds provides companies with the incentive to retrain a work force with outdated skills, rather than laying off employees. Companies are encouraged to take a long-range view towards their employees."<sup>20</sup> The reality in the electronics industry is harsher and the evidence shows considerable variations between employers that have attempted to avoid layoffs and those companies that have moved to hiring temporary employees and have provided no advance notice or retraining options to employees who have been terminated or given extended layoffs.<sup>21</sup>

The enabling legislation makes it clear that targeted workers include those whose jobs are vulnerable as well as those who have been displaced; it allows for up to 18 months of training.<sup>22</sup> The California evidence suggests that it is 30 percent more expensive to train persons who are unemployment insurance recipients (those out of work) than employed workers who are likely to be displaced.<sup>23</sup> This conclusion, more than likely, holds true for most cases and gives strong support to the move to provide training prior to layoff and in anticipation of employment changes.

*Massachusetts.* In the 1970's and 1980's, the State of Massachusetts suffered substantial job losses in declining



industries, losing more than 30,000 jobs from 1981 to 1984. While only 12 percent of all State workers are within those declining industries, in some communities such industries account for more than one-half of the work force.<sup>24</sup> In that context, the State passed Chapter 208, "An Act Alleviating the Impact of Major Dislocations of Employment and to Assist in the Reemployment of Dislocated Workers." This law was passed in 1984 with \$15 million in State funding designed to assist workers and communities affected by plant closings and major layoffs. It became operational in January 1985, and thus has a short history to judge its success. Furthermore, the economy of the State shifted dramatically, and Massachusetts now has the lowest unemployment rate of any major industrial State in the Nation and is near the bottom of all 50 States in total unemployment.

The 1984 Act established the Industrial Services Program (ISP) to provide statewide technical assistance and financing to businesses, workers, and communities. First, it offers funding through the Economic Stabilization Trust to assist in corporate restructuring, change of ownership, employee buyouts, and other efforts to save jobs. Second, an early warning system exists to analyze State economic trends and to monitor industries and businesses likely to experience plant closings. Third, the Industrial Services Program oversees and coordinates dislocated worker programs through Job Training Partnership Act Title III. State funds are used to provide programs for worker assistance, emergency assistance, and industrywide job creation programs. This legislation and program activity are broad and integrated and seek to both ameliorate the problems of dislocation and to prevent economic difficulties. A summary flyer on the program reveals the comprehensive nature of its objectives:

The goals of the ISP are to integrate capital financing resources with reemployment resources, and to adopt an active role in identifying and assisting firms that are, or are likely to be, in financial difficulty. Additional ISP goals are to expand the capacity of the employment and training system through additional funding and a wider array of program options; to use resources to actively promote economic growth in the state, through productivity increases, improvement in workers' earnings, education curricula to upgrade work force academic and occupational skills, and development of new products, markets and ownership structures to improve the long term viability of firms.

Part of the 1984 Act established the Massachusetts "Social Compact," whereby all employers are encouraged to provide 90 days' advance notification in the event of an extended layoff or plant closing. This was based on the evidence that such advance notice is critical to successful adaptation by the work force to gain reemployment and for the agencies involved in worker assistance, job retraining, and job search and placement. Firms that fail to give such notice are then expected to provide some continued pay as severance. A provision of the law mandated that 90 days of continued health benefits would be available to those covered after the job loss.

In addition to programs targeting displaced workers, Massachusetts sought to engage State funding in linked programs of training and economic development. The Bay State Skills Corporation Act states, "It is an important function of government to increase opportunities for gainful employment, to assist in promoting a productive and expanding economy, to encourage the flow of business and industry support to educational institutions, and otherwise to improve the prosperity and general welfare of the inhabitants of the commonwealth."<sup>25</sup> Out of this approach the Bay State Skills Corporation was created, as one mechanism for the State to foster technological preeminence. The Corporation states in one of its flyers, "As long as government compensates only for its failing industries, it can at best merely slow the rate of economic stagnation. By encouraging its technologically successful companies, Massachusetts controls the transition from declining industries to its future—computers, robotics, numerically controlled machines, biotechnology and others. . ."<sup>26</sup>

The Bay State Skills Corporation is project-specific and requires private sector corporate participation in each jointly funded effort. State and private funds, channeled through an educational institution, provide training for workers with special emphasis on training in new technologies. Projects have included programs like training displaced bank tellers as computerized money machine repairers in addition to more professionally advanced levels of training. The recent annual report states that the 4 years of the program have involved more than 600 companies and 200 educational institutions and that 91 percent of trainees get full-time employment in the private sector. In 1985, more than \$5.7 million was awarded to 85 educational institutions in the State. The program has fast start-up phases and flexible program duration periods from 12 weeks to 2 years of training. It emphasizes the cooperation between educational institutions, private employers, and the State; it not only requires a mix of State and corporate funding but active involvement of company personnel in planning, designing, operating, teaching, monitoring, and evaluating the training programs. This program has been inspirational for other States in the country and has attracted interest from other industrial nations.

### Expanding State training efforts

The Center for Policy Research and Analysis of the National Governors' Association has been active in promoting new State initiatives and recently cosponsored a conference with the Bay State Skills Corporation to help in such dissemination. More than 20 States have established rapid response teams to assist dislocated workers and industries, and while Job Training Partnership Act Title III funds cannot be used until a layoff or closing has been announced, States have been providing funds for worker retraining before firms are threatened with closing.<sup>27</sup>

The move towards more activity at the State level appears a partial response to the deemphasis on Federal programs

during the 1980's and the thrust toward cost-sharing of job retraining by employers and government. Interest in the Canadian Industrial Adjustment Service has been accelerating in this country and several recent reports have called upon that system as a model.<sup>28</sup>

It seems clear that the short-run response to technological change and worker retraining in the United States will depart from that in other industrial countries.<sup>29</sup> Some people have

called for more participatory efforts and a huge increase in Federal Government involvement in worker retraining. Such legislation is currently pending in the Congress.<sup>30</sup> For the moment, the illustrations drawn from the voluntary efforts in collectively negotiated agreements and some State programs may inspire more effort to provide the needed training of the American work force in this era of rapid technological change at the workplace. □

—FOOTNOTES—

<sup>1</sup> Bureau of Labor Statistics reports include Jerome A. Mark, "Technological change and employment: some results from BLS research," *Monthly Labor Review*, April 1987, pp. 26–29; and Ronald E. Kutscher and Valerie A. Personick, "Deindustrialization and the shift to services," *Monthly Labor Review*, June 1986, pp. 3–13.

<sup>2</sup> See Paul O. Flaim and Ellen Sehgal, "Displaced workers of 1979–83: how have they fared?" *Monthly Labor Review*, June 1985, pp. 3–16; and *Technology and Structural Unemployment: Reemployment of Adults*, OAT-ITE 250 (U.S. Congress, Office of Technology Assessment, February 1986).

<sup>3</sup> Richard W. Riche, Daniel E. Hecker, and John U. Burgan, "High technology today and tomorrow: a small piece of the employment pie," *Monthly Labor Review*, November 1983, pp. 50–58; and Barry Bluestone and Bennett Harrison, *The Great American Job Machine: The Proliferation of Low Wage Employment in the U.S. Economy* (U.S. Congress, Joint Economic Committee, December 1986).

<sup>4</sup> Richard M. Cyert and David C. Mowery, eds., *Technology and Employment: Innovation and Growth in the U.S. Economy* (Washington, DC, National Academy Press, 1987).

<sup>5</sup> *Computerized Manufacturing Automation: Employment, Education and the Workplace*, OAT-CIT 235 (U.S. Congress, Office of Technology Assessment, April 1984).

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<sup>7</sup> International Association of Machinists and Aerospace Workers, *Let's Rebuild America* (Washington, DC, Kelly Press, 1984).

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<sup>16</sup> Margaret Hilton, "Lying down together II: joint union-management training enhances productivity and revenues at Pacific Northwest Bell," *Training and Development Journal*, Summer 1986.

<sup>17</sup> United Steelworkers of America, *Responding to Economic Dislocation: Assistance Program for Unemployed Steelworkers and a Directory of District Programs*, 1986.

<sup>18</sup> Office of Technology Assessment, *Technology and Structural Unemployment*, p. 207.

<sup>19</sup> Andrew Pollack, "A somber Silicon Valley is 'changed forever,'" *New York Times*, Oct. 5, 1986.

<sup>20</sup> Arthur Young, *Study of the California Employment Panel* (Los Angeles, CA, Arthur Young and Co., 1985).

<sup>21</sup> *Plant Closing: Advance Notice and Rapid Response-Special Report*, OAT-ITE 250 (U.S. Congress, Office of Technology Assessment, 1986).

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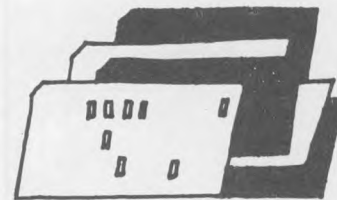
<sup>28</sup> See, for example, *Economic Adjustment and Worker Dislocation in a Competitive Society* (U.S. Department of Labor, December 1986); Office of Technology Assessment, *Technology and Structural Unemployment*; and Office of Technology Assessment, *Plant Closing*.

<sup>29</sup> Foreign approaches and contrasts with the United States are explored in Steven Deutsch, "International experiences with technological change," *Monthly Labor Review*, March 1986, pp. 35–40.

<sup>30</sup> This position is argued by Ray Marshall, *Unheard Voices: Labor and Economic Policy in a Competitive World* (New York, Basic Books, 1987) and is expressed in the Economic Dislocation and Workers Adjustment Act of 1987, the Education and Training for American Competitiveness Act of 1987, and the Trade and International Economic Policy Act of 1987.



# Research Summaries



## White-collar salaries vary widely in the service industries

C. JOSEPH COOPER, JR.

Workers employed by firms providing engineering and research services typically earned more on average than their counterparts in other service industries in March 1987. This finding is based on the Bureau of Labor Statistics' first nationwide white-collar pay survey of all private service industries. (See table 1 for examples of pay relationships in selected occupations and service industries.) Because previous BLS white-collar pay surveys covered other sectors of the economy, this year's results cannot be directly compared with earlier survey data.<sup>1</sup> The March 1987 study yielded average salary information for workers in 26 occupations and 93 work levels, spanning a broad range of duties and responsibilities.

The March 1987 survey reflects changes to broaden coverage of the white-collar pay survey to more industries, including health care services, and to smaller establishments.<sup>2</sup> The service sector findings will be combined with updated information from establishments studied in 1986; the results will be used to make annual pay comparisons between Federal white-collar workers and their counterparts in private industry. Rotating industry coverage in different years allows BLS to obtain a broader scope of pay data within current budgetary limits.

In addition to the type of service that a firm performs, skill and experience also affect white-collar pay. (See table 2.) Among the professional jobs studied, salaries averaged \$19,588 a year for beginning accountants and \$26,355 for beginning engineers, while the averages for senior levels of both jobs (level V) were approximately \$50,000. For top level engineers (VIII) surveyed, salaries averaged \$78,049.<sup>3</sup>

In the clerical and technical areas, differing skill levels also contributed to the wide variations in pay. Salaries for four levels of general clerks ranged from \$10,338 a year for clerks who follow detailed procedures in performing simple and repetitive tasks (level I) to \$19,151 for those who use

some knowledge and judgment to complete various nonroutine assignments (level IV). Pay for five levels of secretaries ranged from \$15,285 to \$29,014.

Computer operators are classified on the basis of responsibility for problem solving, variability of assignments, and scope of authority for corrective actions required by their equipment. Level I operators, whose work assignments consist of on-the-job training, averaged \$14,067 a year. The largest group surveyed, level II, averaged \$16,812; the highest publishable level (IV) averaged \$24,673.

Drafters averaged between \$12,450 at level I (trace or copy finished drawings) and \$31,634 at level V (work closely with designers preparing unusual, complex, or original designs).

Statistically reliable data on pay were obtained for three jobs in the nursing field. One of these, registered nurse, was the most numerous of the professional and administrative jobs studied. Over 80 percent of the nurses were at level II, which designates those who exercise considerable independence in difficult nursing situations. They averaged \$24,127 a year.

The other two jobs, nursing assistant and licensed practical nurse, are included among the survey's technical support occupations, which include computer operator, drafter, engineering technician, and photographer. Nursing assistants numbering 441,000 had average salaries from \$8,558 for level I to \$14,369 for level III, the highest level for which pay data met Bureau publication standards. Of the three levels of licensed practical nurses, level II incumbents accounted for most of the licensed practical nurses covered, and their salaries averaged \$16,487 a year.

**Table 1. Average pay relatives by type of service and selected occupations, March 1987**  
[All services = 100]

Selected occupations	Engineering and research	Business	Health	Education
Accountants III . . . . .	107	105	98	96
Accounting clerks II . . . . .	110	102	99	94
General clerks III . . . . .	109	102	98	95
Secretaries II . . . . .	105	103	99	88
Key entry operators I . . . . .	115	95	103	99
Computer operators II . . . . .	107	102	97	93
Computer programmers II . . . . .	100	101	96	89
Systems analysts II . . . . .	103	101	95	91

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**Table 2. Average salaries of professional, administrative, technical, and clerical workers in the service industries, by occupation and level, March 1987**

Occupation and level	Number of employees <sup>1</sup>	Average annual salaries <sup>2</sup>	Occupation and level	Number of employees <sup>1</sup>	Average annual salaries <sup>2</sup>
<b>Accountants and auditors</b>			Registered nurses IV	392	\$34,383
Accountants I	2,644	\$19,588	<b>Technical support</b>		
Accountants II	7,056	23,426	Licensed practical nurses I	31,195	14,636
Accountants III	7,129	29,791	Licensed practical nurses II	165,049	16,487
Accountants IV	3,227	38,707	Licensed practical nurses III	2,061	18,837
Accountants V	808	49,291	Nursing assistants I	148,366	8,558
Auditors II	212	25,683	Nursing assistants II	269,803	10,872
Auditors III	275	33,187	Nursing assistants III	22,075	14,369
Auditors IV	112	40,817	Engineering technicians II	2,253	20,149
Public accountants I	14,233	21,006	Engineering technicians III	3,034	24,425
Public accountants II	14,443	23,044	Engineering technicians IV	3,428	30,009
Public accountants III	15,563	27,537	Engineering technicians V	2,535	34,275
Public accountants IV	6,849	33,989	Drafters I	1,848	12,450
<b>Attorneys</b>			Drafters II	4,223	15,898
Attorneys II	186	41,370	Drafters III	6,582	20,742
Attorneys III	458	53,100	Drafters IV	7,128	25,281
Attorneys IV	586	63,711	Drafters V	2,023	31,634
<b>Buyers</b>			Computer operators I	2,616	14,067
Buyers I	1,634	20,492	Computer operators II	12,000	16,812
Buyers II	2,739	25,373	Computer operators III	6,790	21,020
Buyers III	845	33,309	Computer operators IV	2,191	24,673
Buyers IV	451	41,828	Photographers II	2,017	18,046
<b>Programmers and systems analysts</b>			Photographers III	435	26,782
Computer programmers I	5,385	20,980	<b>Clerical</b>		
Computer programmers II	13,587	23,883	Accounting clerks I	7,692	11,569
Computer programmers III	15,102	29,435	Accounting clerks II	33,476	14,424
Computer programmers IV	6,594	36,204	Accounting clerks III	20,392	16,739
Computer programmers V	1,849	43,292	Accounting clerks IV	5,276	20,097
Systems analysts I	5,047	28,607	File clerks I	10,114	11,430
Systems analysts II	15,081	35,386	File clerks II	6,470	13,166
Systems analysts III	9,494	42,687	Key entry operators I	24,832	12,431
Systems analysts IV	4,066	50,658	Key entry operators II	11,067	15,199
Systems analysts V	749	59,841	Messengers	5,916	11,354
<b>Personnel management</b>			Personnel clerks/assistants I	1,297	13,409
Job analysts II	114	23,315	Personnel clerks/assistants II	1,333	16,717
Job analysts III	182	27,433	Personnel clerks/assistants III	1,071	19,359
Directors of personnel I	416	35,167	Personnel clerks/assistants IV	320	23,130
Directors of personnel II	853	43,927	Purchasing clerks/assistants I	1,216	13,425
<b>Engineers</b>			Purchasing clerks/assistants II	1,279	16,502
Engineers I	7,321	26,355	Purchasing clerks/assistants III	346	20,940
Engineers II	14,392	30,151	Secretaries I	24,316	15,285
Engineers III	21,903	35,779	Secretaries II	31,190	18,309
Engineers IV	27,115	42,964	Secretaries III	26,195	20,644
Engineers V	21,285	50,597	Secretaries IV	10,904	24,109
Engineers VI	10,573	59,422	Secretaries V	2,021	29,014
Engineers VII	3,251	67,183	Typists I	6,108	13,016
Engineers VIII	933	78,049	Typists II	2,503	15,106
<b>Registered nurses</b>			General clerks I	5,385	10,338
Registered nurses I	38,257	21,012	General clerks II	26,145	12,178
Registered nurses II	366,888	24,127	General clerks III	27,105	14,767
Registered nurses III	20,402	31,216	General clerks IV	5,595	19,151

<sup>1</sup> Occupational employment estimates relate to the total in all establishments within scope of the survey and not to the number actually surveyed.

<sup>2</sup> Excludes premium pay for overtime and for work on weekends, holidays, and late shifts, but overtime pay for registered and licensed practical nurses working three 12-hour shifts is included. Also excluded are performance bonuses and lump-sum payments of the type negotiated in the auto and aerospace industries, as well as profit-sharing payments, attendance bonuses, Christmas or yearend bonuses, and other nonproduction bonuses. Pay increases—but not bonuses—

under cost-of-living allowance clauses and incentive payments, however, are included.

NOTE: The following occupational levels were surveyed but insufficient data were obtained to warrant publication: Accountant VI; auditor I; chief accountant I–V; attorney I, V, and VI; systems analyst VI; job analyst I and IV; director of personnel III–V; chemist I–VIII; nursing assistant IV; civil engineering technician I–V; engineering technician I; computer operator V and VI; photographer I, IV, and V; file clerk III; personnel clerk/assistant IV; and stenographer I and II.

A DETAILED ANALYSIS of white-collar salaries and complete results of this year's survey are forthcoming in the bulletin, *National Survey of Professional, Administrative, Technical, and Clerical Pay, March 1987*. It will include salary distri-

butions by occupational work level, and relative employment and salary levels by major service industries for 26 occupations. □



<sup>1</sup> The white-collar survey (National Survey of Professional, Administrative, Technical, and Clerical Pay—PATC) is conducted by the Bureau of Labor Statistics, but survey occupations and coverage such as establishment size and the private industries to be included are determined by the President's Pay Agent—the Secretary of Labor and the Directors of the Office of Management and Budget and the Office of Personnel Management. This reflects the use of PATC findings in the pay setting process for Federal employees. The role of the PATC survey is described in George L. Stelluto's "Federal pay comparability: facts to temper the debate," *Monthly Labor Review*, June 1979, pp. 18–28.

<sup>2</sup> See John D. Morton's "BLS prepares to broaden scope of its white-collar pay survey," *Monthly Labor Review*, March 1987, pp. 3–7.

<sup>3</sup> In the survey coding structure, the level designations among various occupations are not synonymous: for example, the first level of attorneys is comparable to the third level of engineers, accountants, and most other professional and administrative occupations. Classification of employees in the occupations and work levels surveyed is based on factors detailed in definitions which are available upon request.

## How do demographic changes affect labor force participation of women?

DANIEL T. LICHTER AND JANICE A. COSTANZO

Since World War II, U.S. labor force participation rates among women have almost doubled, reaching about 55 percent in 1985.<sup>1</sup> Increases in labor force activity have been pervasive for all groups, especially married women and women with young children.

Changes in the demographic composition of the female population, particularly during the past decade or so, have had great potential for altering overall participation rates.<sup>2</sup> For example, William Johnson and Jonathan Skinner have reported that the rise in divorce rates between 1960 and 1980 may explain up to 17 percent of the rise in labor force participation rates of women during that period.<sup>3</sup> Similarly, Ralph Smith has concluded that between 1971 and 1975, the changing demographic composition (for example, marital and family status changes) of women in the labor force accounted for 28 percent of the increase in their rates.<sup>4</sup> Compositional changes are likely to be small over a short time period, however, and therefore should not be expected to greatly affect overall female labor force participation rates.

By examining data covering the 15-year period between 1970 and 1985, we provide evidence on the link between changes in demographic composition and labor force participation rates among women.

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Specifically, we ask: To what extent have changes in fertility rates, marital status, educational levels, and age structure accounted for growth in labor force participation rates of women since 1970?

### Demographic composition

*Fertility.* The labor force participation rates among married women with children, particularly young children, have been steadily increasing since 1970. In 1985, nearly half of all women with children under age 18 were in the labor force, compared with less than 40 percent in 1970.<sup>5</sup> Moreover, the declines in fertility rates, as well as declines in family size, increasing childlessness, and delayed childbearing have freed many women to pursue employment opportunities outside the home. Completed family size, for example, decreased from 2.4 children in 1970 to 1.7 in 1984 among white women, and from 3.1 to 2.2 children among blacks.<sup>6</sup> Recent fertility declines are thus a potentially important demographic source of post-1970 increases in overall female labor force participation rates.

*Marital status.* Substantial variation exists by marital status, with married women exhibiting labor force participation rates much lower than those of the overall female population.<sup>7</sup> Changes since 1970 in the marital status composition of the female population have provided a potentially significant demographic source of growth in female labor force participation. The incidence of divorce, for example, increased from about 14 per 1,000 married women in 1970 to nearly 22 per 1,000 in 1984.<sup>8</sup> In addition, the proportion of never-married women has risen rapidly, especially among young adults, reflecting delayed marriage. For example, the median age at first marriage among women in the United States rose from 20.6 in 1970 to 22.8 in 1984.<sup>9</sup>

*Education.* The educational upgrading of the female population has been a major facet of social change in the United States. For women age 25 or over, median years of schooling increased from 12.1 to 12.6 years between 1970 and 1980, and the percent graduating from high school grew from 52.8 to 65.8.<sup>10</sup> Changes in the educational composition of the female population must be included in any demographic or structural explanation of rising participation rates among the female population. Indeed, increasing educational attainment alters the relative importance of home work versus the labor market for many women. This is clearly revealed in female labor force participation rates that tend to accelerate with increasing educational attainment.

*Age.* Age composition is a major structural aspect of the labor force.<sup>11</sup> Market-related activities are clearly associated with age. The age profile of women in the labor force is curvilinear, reaching its nadir during the child-bearing years and after age 40 or so, when labor force exits begin to rise. One significant facet of labor force age structure can be

linked directly to the post-World War II baby boom. That is, the baby-boom cohort of the 1950's entered the labor force in large numbers during the 1970's. As this cohort aged between 1970 and 1985, declining proportions of women were concentrated in the age categories that typically exhibit lower than average rates of participation (say, those in mid-to late 40's). The "maturing" of the baby-boom cohort thus represents another potentially significant demographic component of change for women in the labor force.

### Accounting for change

We restrict this analysis to women ages 25-49.<sup>12</sup> For most women, schooling has been completed by age 25, and labor force exit rates begin to accelerate significantly after 45 or so.

The extent to which changing demographic composition accounts for the increases in labor force participation rates among women can be evaluated using standard demographic methods of decomposition or components analysis.<sup>13</sup> It is well known that the difference between two crude rates is attributed to differences in both status-specific rates and population composition. Differences in rates between 1970 and 1985 can thus be decomposed into parts attributed to changing propensity to participate (that is, a so-called true or rate effect) and parts attributed to changes in the distribution of women by number of children, marital status, education, and age (composition effects). The categories of population composition we consider here are provided in table 1 for blacks and nonblacks.

The results of the decomposition analysis are presented in table 2. Total labor force participation rates of women increased from 47.90 percent to 71.01 percent between March 1970 and 1985. Of the 23.11-percentage-point increase in labor force participation rates, 12.48, or about 54 percent, is attributable to the changing propensity to participate. (See the "rate effect.") Simply put, a majority share of the in-

**Table 1. Percent distributions of women ages 25-49, by race and selected characteristics, 1970 and 1985**

Characteristics	Black		Nonblack <sup>1</sup>	
	1970	1985	1970	1985
Number of children under age 18:				
0	23.9	32.7	20.5	36.2
1-2	35.5	49.4	46.4	50.0
3 or more	40.6	17.9	33.1	13.8
Marital status:				
Never married	8.5	28.6	3.6	10.9
Married	67.0	41.4	89.4	72.8
Other ever-married	24.5	30.0	7.0	16.4
Years of schooling				
Less than 12	53.0	24.2	30.3	14.2
12	34.2	42.9	48.6	43.7
More than 12	12.8	32.9	21.1	42.1
Age:				
25-32	35.5	42.8	33.3	38.9
33-41	35.3	34.6	34.2	37.1
42-49	29.2	22.6	32.5	24.0

<sup>1</sup> Nonblack includes whites and all other racial groups, except blacks.

**Table 2. Components of change in labor force participation rates for women, by race, 1970-85**

Component	Total	Black	Nonblack <sup>1</sup>
1985	71.01	73.21	70.70
1970	47.90	60.21	46.47
Total effect, or change	23.11	13.00	24.23
Rate effect <sup>2</sup>	12.48	2.07	13.72
Composition effect <sup>3</sup>	10.63	10.93	10.51
Number of children under age 18	4.33	3.78	4.53
Marital status	3.00	-.18	3.05
Education	3.18	7.25	2.82
Age	.11	.08	.10

<sup>1</sup> Nonblack includes whites and all other racial groups, except blacks.

<sup>2</sup> The rate effect is the 1985-70 difference in labor force participation rates of women standardized by number of children, marital status, education, and age.

<sup>3</sup> The total composition effect is equal to the sum of the four composition effects considered here.

crease over this 15-year period is attributed to changes in behavior rather than changes in demographic composition. This further implies that labor force participation rates would have increased during 1970-85, even if the demographic composition of the female population had not changed during this period. The increase in labor force participation rates for women cannot be explained away with compositional arguments.

This conclusion, however, should not be interpreted to mean that changing demographic composition or changes in the supply of women are unimportant facets of change in labor force participation rates. Indeed, 46 percent of the increase since 1970 is directly attributable to changing demographic composition. (See "composition effect," table 2.) Although past studies reveal that compositional effects are not dramatic over a short time, the effects of changing demographic composition are considerably more apparent over a longer period, such as that examined here. Moreover, when we examine the relative importance of each compositional component, data reveal that, on the one hand, changing fertility rates, as measured by number of children, account for 4.33 percentage points (or nearly 20 percent) of the overall post-1970 increase in labor force participation.<sup>14</sup> Marital status and education changes, on the other hand, account for smaller but roughly similar shares (about 13 percent) of the increase. Changing age composition has virtually no effect on labor force participation rates of women. As these results suggest, while not solely responsible for recent increases in labor force activity among women, changing composition nevertheless is clearly an important and too frequently ignored source of growth in labor force participation rates.

As shown in table 2, limiting the analysis to the total (or nonblack) female population also tends to mask substantial racial variations in the mix of compositional and rate effects. In contrast to nonblack women, our analysis reveals that changing composition is primarily responsible for the increase in labor force participation rates for black women,



accounting for 10.93, or nearly 85 percent, of the 13.00 percentage point increase since 1970. This sizable change is mainly attributable to educational upgrading among black women. Indeed, increased education accounts for about two thirds (or 7.25/10.93) of the overall compositional effect and about 55 percent of the overall increase in labor force participation rates for black women during the 1970–85 period. The only other compositional component of any significance is the changing number of children, a demographic component that accounts for about 30 percent of the increase since 1970.

## Implications

The period since 1970 has revealed a continuing pattern of increase in rates of female labor force participation. Rising wage rates and changing attitudes regarding work have clearly contributed to this increase.<sup>15</sup> Our results nevertheless suggest that demographic explanations cannot be entirely dismissed. A substantial share—almost half—of the increase has roots in ongoing patterns of demographic change, especially recent fertility declines, shifts in patterns of marriage and divorce, and educational upgrading. The changing mix of women across various population subgroups thus provides an important demographic explanation of changing female labor force participation rates, particularly for black women.

The results also imply that prospects are good for continuing high labor force participation rates for women. Demographic changes are likely to counterbalance any dampening effects of slowing wage increases or changes in family or work attitudes. Indeed, the changing demographic supply of potential female workers may account for an increasing share of future growth in labor force participation among women.<sup>16</sup> □

### —FOOTNOTES—

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<sup>1</sup> See William G. Bowen and T. Aldrich Finegan, *The Economics of Labor Force Participation* (Princeton, Princeton University Press, 1969); Glen G. Cain, *Married Women in the Labor Force* (Chicago, University of Chicago Press, 1966); and *Employment and Earnings* (Bureau of Labor Statistics, August 1986).

<sup>2</sup> Elizabeth Waldman, "Labor force statistics from a family perspective," *Monthly Labor Review*, December 1983, pp. 16–20.

<sup>3</sup> William R. Johnson and Jonathan Skinner, "Labor Supply and Marital Separation," *American Economic Review*, June 1986, pp. 455–469.

<sup>4</sup> See Ralph E. Smith, "Sources of growth in the female labor force, 1971–75," *Monthly Labor Review*, August 1977, pp. 27–29.

<sup>5</sup> Howard Hayghe, "Rise in mothers' labor force participation includes those with young children," *Monthly Labor Review*, February 1986, pp. 43–45.

<sup>6</sup> National Center for Health Statistics, *Monthly Vital Statistics Report*, Advance Report of Final Natality Statistics, 1984 (Hyattsville, MD, Public Health Service, July 18, 1986).

<sup>7</sup> Howard Hayghe, "Working mothers reach record number in 1984," *Monthly Labor Review*, Dec. 1984, pp. 31–34.

<sup>8</sup> National Center for Health Statistics, *Monthly Vital Statistics Report*, Advance Report of Final Divorce Statistics, 1984 (Hyattsville MD, Public Health Service, Sept. 25, 1986).

<sup>9</sup> National Center for Health Statistics, *Monthly Vital Statistics Report*, Advance Report of Final Marriage Statistics, 1984 (Hyattsville, MD, Public Health Service, June 3, 1987).

<sup>10</sup> U.S. Bureau of Census, *General Social and Economic Characteristics*, United States Summary PC 80–1–C1 (U.S. Government Printing Office, 1983.)

<sup>11</sup> James P. Smith and Finis Welch, "No Time to be Young: The Economic Prospects for Large Cohorts in the United States," *Population and Development Review*, March 1981, pp. 71–83.

<sup>12</sup> Data for this analysis are from the March 1970 and 1985 machine-readable files of the *Current Population Survey*, Bureau of Census.

<sup>13</sup> See Prithwis Das Gupta, "A General Method of Decomposing a Difference Between Two Rates Into Several Components," *Demography*, February 1978, pp. 99–112. Methods of decomposition have a long history in demographic research. Any comparison between two crude rates is affected by differences in population composition (for example, age composition). To eliminate compositional differences, *standardized* rates are often calculated, which eliminate the confounding effects of differences by assigning a similar composition (that is, a "standard" age composition) to each population. Methods of decomposition represent a simple extension of this analytic technique by enabling us to gauge the relative effects of more than one compositional component on crude rate differences.

The general method described by Das Gupta has three primary advantages over other methods of decomposition: (1) the method can be applied to data cross-classified by any number of compositional factors (for example, in the analysis presented here, we use a four-factor model); (2) results are independent of the order in which compositional factors are considered; and (3) the procedure avoids problems with the allocation and interpretation of "interaction" effects among the compositional factors. With regard to the latter point, this is accomplished by calculating the effect of one compositional factor, holding other factors constant at an average level. As a result, a "total" effect (that is, the difference in crude rates) can be uniquely partitioned into a "rate" effect (the difference between two standardized labor force participation rates, using as the "standard population" the weighted average of the 1970 and 1985 female labor force populations, aged 25–49), and "compositional" effects (in this case, one each for changing fertility, marital status, education, and age).

<sup>14</sup> In addition to our examination of the effects of changing numbers of children, we also evaluated the effects of changes in the age composition of children. Because labor force participation rates are lowest among mothers with young children, we replicated our decomposition analysis with women separated into three categories: 0 children less than age 18; some or all less than age 6; and all children age 6–18. This analysis produced results that were similar to those reported in table 2. Changes in the age composition of children accounted for about 14 percent of the overall increase in rates for women.

<sup>15</sup> Given the results reported here, we are unable to partition sources of the "rate" effect, but surely rising real wages and changing attitudes account for a sizeable share of this effect. See David Shapiro and Lois B. Shaw, "Growth in the Labor Force Attachment of Married Women: Accounting for Change in the 1970s," *Southern Economic Journal*, October 1983, pp. 461–473.

<sup>16</sup> See George Masnick and Mary Jo Bane, *The Nation's Families: 1960–1990* (Cambridge, The Joint Center for Urban Studies of MIT and Harvard University, 1980). They project labor force participation rates of women to the year 1990.

## Furniture workers' wages higher under incentive systems

According to a Bureau of Labor Statistics survey of wood household furniture plants in June 1986, incentive pay systems bolstered workers' earnings. Moreover, a disparity in the incidence of incentive pay contributed to the differences in average pay levels in upholstered and nonupholstered furniture plants.<sup>1</sup> The survey included establishments employing 20 workers or more, and examined occupational pay, employee benefits, and selected establishment characteristics, such as method of wage payment and labor-management contract coverage.<sup>2</sup>

Table 1 shows that incentive-paid workers in upholstered furniture plants usually averaged 25 to 50 percent more per hour than timeworkers in the same job; in nonupholstered furniture plants, the advantage was 15 to 25 percent. Incentive pay systems, typically individual piece rates, applied to about two-fifths of the workers in upholstered furniture plants and to one-tenth of the workers in other wood household furniture plants. The use of incentive workers is more extensive in upholstering, which traditionally requires more hand-crafted operations in fabric application and cushion construction. In this regard, upholsterers and sewing-machine operators—largely incentive-paid jobs—together accounted for slightly more than one-third of the production workers in the upholstered furniture industry, but were less than 1 percent of the nonupholstered work force.

Overall, production workers in upholstered furniture plants held an 89-cent-an-hour pay advantage over those workers in nonupholstered plants. (See table 1.) Virtually all of this difference is attributable to relatively large pay premiums for incentive workers in upholstered furniture coupled with the higher incidence of incentive workers in that industry. For example, if the difference in the proportion of workers under incentive systems is taken into account, the average pay advantage for upholstered furniture workers shrinks to 16 cents an hour.<sup>3</sup>

Another key pay characteristic of the two furniture industries is that individual earnings vary substantially from their respective averages. The index of wage dispersion, a technique for measuring such variation, was 32 in nonupholstered furniture plants; in the upholstered sector, the index was 48, one of the highest recorded in any Bureau industry wage survey.<sup>4</sup> Contributing to the wide range of earnings were the relatively broad range of skill requirements (especially in the upholstered sector); the low incidence (about 10 percent) of pay systems providing for a uniform, single rate for a given occupation; and disparate pay levels among the industries' establishments, which were overwhelmingly nonunion (85 percent of the production work force).

Regional pay differences also added variability to the industries' pay structures, with average hourly earnings in nonupholstered furniture ranging from \$4.97 in the Moun-

**Table 1. Average hourly earnings in U.S. wood household furniture plants, selected occupations by method of wage payment, June 1986<sup>1</sup>**

Occupation <sup>2</sup>	Nonupholstered furniture plants			Upholstered furniture plants		
	Time and incentive workers	Time-workers	Incentive workers	Time and incentive workers	Time-workers	Incentive workers
All production workers .....	\$5.85	\$5.75	\$6.84	\$6.74	\$5.79	\$7.98
<b>Assembling</b>						
Assemblers (except chairs) .....	5.69	5.55	6.64	5.06	4.82	5.97
Sewing-machine operators .....	5.71	5.54	6.78	6.68	5.85	7.20
Upholsterers .....	7.03	6.79	7.69	8.35	7.07	8.75
<b>Rough mill</b>						
Double-end-trimmer-and-boring-machine operators .....	6.22	6.04	6.96	6.58	5.92	7.45
Rip-saw operators .....	6.03	5.85	7.41	6.00	5.11	7.47
Variety-saw operators .....	5.84	5.75	6.57	6.24	5.84	7.72
<b>Finishing</b>						
Furniture sanders, hand .....	5.15	5.02	6.26	5.18	4.78	6.83
Furniture sanders, machine .....	5.80	5.66	6.91	5.44	5.17	7.85
Sprayers .....	5.81	5.72	6.60	5.78	5.53	7.65
<b>Miscellaneous</b>						
Furniture packers ..	5.53	5.43	6.52	5.63	5.09	7.73

<sup>1</sup> Excludes premium pay for overtime and for work on weekends, holidays, and late shifts. Incentive payments, such as those resulting from piecework or production bonus systems, and cost-of-living increases (but not bonuses) were included as part of the workers' regular pay. Excluded were performance bonuses and lump-sum payments of the type negotiated in the auto and aerospace industries, as well as profit-sharing payments, attendance bonuses, Christmas or yearend bonuses, and other nonproduction bonuses.

<sup>2</sup> Occupations in this table are those for which comparisons for time and incentive workers in both upholstered and nonupholstered furniture plants are available. For a more extensive look at all occupations studied, see *Industry Wage Survey: Wood Household Furniture, June 1986*, Bulletin 2283 (Bureau of Labor Statistics, August 1987).

tain States to \$6.94 in the Great Lakes States; in upholstered furniture, the range was \$6.53 in the Border States to \$7.74 in the Middle Atlantic States.<sup>5</sup> Even within the same locality, individual earnings were widely scattered. Following are selected indexes of wage dispersion for upholstered furniture plants in Hickory-Statesville, NC, a major industry center, that illustrate this point:

Occupation	Index of dispersion
All production workers .....	55
Sewing-machine operators .....	37
Final inspectors .....	36
Upholsterers .....	40

The survey studied other characteristics of upholstered and nonupholstered furniture plants, finding some similarities and some differences. Both industries, for example, had heavy concentrations of workers in the Southeast, spread about evenly over metropolitan and nonmetropolitan areas. Nationwide, average earnings for production workers in both industries were about 10 percent higher in metropolitan



areas than in nonmetropolitan areas, and about 15 percent higher in union than in nonunion establishments. Moreover, larger plants paid higher wages than smaller plants; the pay premiums for larger establishments averaged 5 percent in nonupholstered plants and 10 percent in upholstered plants.

As for employee benefits, more than nine-tenths of the production workers in both industries were eligible for paid holidays, paid vacations, and various health insurance plans. Establishments typically provided 6 to 10 holidays per year and 1 to 3 weeks of annual vacation pay, depending on the worker's length of service. Health plans covering more than nine-tenths of the workers included hospitalization, surgical, medical, and major medical insurance, typically provided at no cost to the employee. Life, accidental death and dismemberment, and sickness and accident insurance also were common in the industries.

Retirement plans covered two-thirds of the workers in nonupholstered furniture plants and about one-half of those in upholstered furniture plants. These plans typically were financed entirely by the employer.

For each of the two industries, separate reports for States and areas of industry concentration are available from the Bureau of Labor Statistics or any of its regional offices. A comprehensive bulletin on the study, *Industry Wage Survey: Wood Household Furniture, June 1986*, Bulletin 2283, may be purchased from the Bureau of Labor Statistics, Publications Sales Center, P.O. Box 2145, Chicago, IL 60690, or the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. The bulletin provides additional information on occupational pay by region and by size of establishment, and on the incidence of employee benefits. □

#### —FOOTNOTES—

<sup>1</sup> Earnings data exclude premium pay for overtime and for work on weekends, holidays, and late shifts. Incentive payments, such as those resulting from piecework or production bonus systems, and cost-of-living pay increases (but not bonuses) were included as part of the workers' regular pay. Excluded were performance bonuses and lump-sum payments of the type negotiated in the auto and aerospace industries, as well as profit-sharing payments, attendance bonuses, Christmas or yearend bonuses, and other nonproduction bonuses.

<sup>2</sup> For a report on the June 1979 survey, see Carl Barsky, "Occupational wage variation in wood household furniture plants," *Monthly Labor Review*, July 1981, pp. 37-38. Wood television, radio, phonograph, and sewing machine cabinets, and wood kitchen cabinets, included in the 1979 survey of nonupholstered furniture, were excluded in 1986.

<sup>3</sup> To calculate this figure, the proportion of the upholstered furniture work force was adjusted to reflect the proportion in nonupholstered furniture—nine-tenths on time rates and one-tenth on incentive rates. Average hourly earnings by method of wage payment for both industries remained as reported in table 1. When the overall earnings data are recomputed, the average for upholstered furniture is \$6.01—73 cents less than its actual figure, and 16 cents, rather than 89 cents, more than paid nonupholstered furniture workers.

<sup>4</sup> The index of dispersion is computed by dividing the interquartile range (the difference between the third and first quartiles) by the median (the second quartile) and multiplying by 100. In the case of upholstered furniture, it was  $\$3.00 / \$6.20 \times 100 = 48$ . For a detailed analysis of wage

dispersion by industry, see Carl B. Barsky and Martin E. Personick, "Measuring wage dispersion: pay ranges reflect industry traits," *Monthly Labor Review*, April 1981, pp. 35-41. In analyzing the data for their article, the authors considered a dispersion index of 24 or more to be high.

<sup>5</sup> For purposes of the industry wage surveys, geographical classifications are *New England*: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; *Middle Atlantic*: New Jersey, New York, Pennsylvania; *Border States*: Delaware, District of Columbia, Kentucky, Maryland, Virginia, West Virginia; *Southeast*: Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, Tennessee; *Southwest*: Arkansas, Louisiana, Oklahoma, Texas; *Great Lakes*: Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin; *Middle West*: Iowa, Kansas, Missouri, Nebraska, North Dakota, South Dakota; *Mountain*: Arizona, Colorado, Idaho, Montana, New Mexico, Utah, Wyoming; *Pacific*: California, Nevada, Oregon, Washington. Alaska and Hawaii were not included in the study.

## Linking employee fitness programs to lower medical costs and absenteeism

A survey of research on 17 worksite exercise programs supports the view that these activities improve employee fitness and help reduce health risks. Employers also benefit from reduced absenteeism and lower medical costs.

"The findings consistently show improvements in aerobic capacity and exercise habits, as well as other fitness-related measures," according to the study by the Institute of Aerobics Research in Dallas, TX. "In most cases, health risk factors, such as smoking and elevated blood lipids, also respond to the worksite programs."

Participating in such fitness programs is important because sedentary living can have an adverse impact on an individual's health. First, sedentary living habits lead to a low level of physical fitness. For example, a sedentary 35-year-old man has the same physical fitness level as an active 55-year-old man. Second, sedentary living habits and low physical fitness have been linked to diseases such as hypertension, obesity, cancer, and coronary heart disease.

### Benefits

The results from programs that measured the impact of exercise on absenteeism show mostly favorable effects. For example, one company experienced an almost 50-percent drop in average absenteeism among program participants relative to the year prior to the fitness program, while another company reported a net reduction of 4.7 hours of sick leave per employee per year for program participants. Also, one company had a 20.1-percent decrease in average disability days among program participants and two school districts reported a reduction in the number of teacher absences.

In addition, direct medical and health care cost savings also have been documented in several studies of worksite exercise programs. Most studies report the short-term (1- to 2-year) effects of the worksite program on medical care

costs. One company showed a 5-percent decrease in medical costs for program participants and another company realized a 45.7-percent drop in average major medical costs from the pre-entry to post-entry year for program participants. Similarly, one company reported a 48.2-percent difference in medical costs between exercisers and nonexercisers and a school district reported an average \$253.42 reduction in medical care costs for program participants. Two long-term medical care studies extend the findings of the short-term programs, showing decreases in worker compensation costs and significant differences in average medical care costs for program participants versus nonparticipants.

The employee populations at the 17 worksites range in size from about 1,500 at a school district in Texas to "tens

of thousands of employees and spouses" at several locations of a computer manufacturer. Sample sizes for the research studies of the exercise programs "were generally a fraction of the total employed population," the authors note.

The report, *Physical Fitness Programs in the Workplace*, by Gary F. Knadler, Todd Rogers, Brenda S. Mitchell, and Steven N. Blair of the Institute for Aerobics Research, was prepared for the Washington Business Group on Health under a cooperative agreement with the Office of Disease Prevention and Health Promotion, U.S. Department of Health and Human Services. For copies of this report, send \$10 to the Washington Business Group on Health, 229½ Pennsylvania Ave. SE, Washington, DC, 20003. □

### Young women's work expectations

Today, young women expect to spend a much greater fraction of their adult lives working in the labor market than their mothers did.

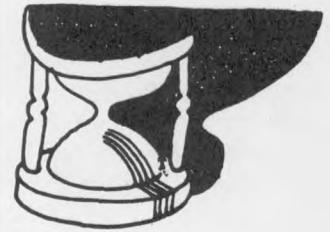
Young women are changing their training and initial job plans as they anticipate greater commitment to the labor force. This is evident in the increased proportion going to college. Women now receive about half of the bachelor's and master's and more than one-third of the doctoral degrees. The sharpest growth in the past decade has been in professional degrees. In 1985, women received 30 percent of the degrees in medicine (up from 13 percent in 1975), 21 percent in dentistry (up from 3 percent in 1975), and 38 percent in law (up from 15 percent in 1975).

Women's college major choices are converging toward those of men. In 1960, 46 percent of degrees awarded to women were in education. Since then, the increased commitment of women to the labor force has led them to choose a greater variety of college majors. In the fall of 1985, only 10 percent of women beginning college intended to major in education, while 28 percent opted for business, making it the most popular major for women as well as for men. Roughly equal numbers of male and female college graduates now major in the arts and humanities, as well as in the biological sciences and management. Although considerably fewer women major in education than before, 76 percent of education majors are women. Women represent only 13 percent of engineering majors, but a decade earlier they represented a mere 2 percent.

—ECONOMIC REPORT TO THE PRESIDENT, TOGETHER WITH THE  
ANNUAL REPORT OF THE COUNCIL OF ECONOMIC ADVISERS,  
TRANSMITTED TO THE CONGRESS JANUARY 1987  
(Washington, Superintendent of  
Documents, 1987), pp. 215-17.



# Major Agreements Expiring Next Month



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

Industry or activity	Employer and location	Labor organization <sup>1</sup>	Number of workers
<b>Private</b>			
Construction	Constructors' Labor Council of West Virginia, Inc. (West Virginia) .. National Electrical Contractors Association, Western Pennsylvania Chapter (Pennsylvania)	Various unions ..... Electrical Workers (IBEW) .....	7,000 2,000
Food products	Campbell Soup Co. (Paris, TX) .....	Food and Commercial Workers ....	1,200
Primary metals	Greater New York Milk Dealers (New York, NY) .....	Teamsters (Ind.) .....	1,800
Transportation equipment	Manufacturers Industrial Relations Assn. (Interstate) .....	Molders .....	2,200
Air transportation	General Dynamics Corp. (Fort Worth, TX) .....	Office and Professional Employees ..	1,500
Utilities	Eastern Airlines (Interstate) .....	Machinists .....	12,000
	Pan American World Airways, ground service (Interstate) .....	Transport Workers .....	5,700
	Atlantic City Electric Co. (New Jersey) .....	Electrical Workers (IBEW) .....	1,000
	Northern States Power Co. (Minneapolis, MN) .....	Electrical Workers (IBEW) .....	3,200
	Pacific Gas and Electric Co. (California) .....	Various unions .....	22,400
Real estate	Cemeteries agreement, New York-New Jersey area (Interstate) .....	Service Employees .....	1,400
Hotels	Greater Chicago Hotel and Motel Assn. (Illinois) .....	Hotel Employees and Restaurant Employees	9,000
Services	Santa Clara Maintenance Contractors Assn. (California) .....	Service Employees .....	1,500
Hospitals	Illinois Assn. of Health Care Facilities (Chicago, IL) .....	Service Employees .....	4,500
	Kaiser-Permanente (Northern California) .....	Nurses Association (Ind.) .....	5,100
<b>Public</b>			
General government	California: San Mateo County, general unit .....	State, County and Municipal Employees	1,500
Education	Colorado: Boulder County Board of Education, teachers .....	Education Association (Ind.) .....	1,300
	Colorado Springs Board of Education .....	Education Association (Ind.) .....	1,650
	Jefferson County Board of Education .....	Classroom School Employees Association (Ind.)	2,750
General government	Illinois: Chicago laborers .....	Various unions .....	3,700
	Chicago white-collar employees .....	State, County and Municipal Employees	7,500
	Chicago blue-collar employees .....	Teamsters (Ind.) .....	2,150
Fire protection	Chicago firefighters .....	Fire Fighters .....	4,800
Law enforcement	Chicago public safety employees .....	Service Employees .....	1,300
Education	Indiana: Gary Board of School Trustees, teachers .....	Teachers .....	1,400
General government	Massachusetts: Boston blue-collar unit .....	State, County and Municipal Employees	4,600
Education	Worcester teachers .....	Education Association (Ind.) .....	1,500
Human services	Michigan: State human services and administrative employees .....	Auto Workers .....	21,180
General government	Minnesota: Hennepin County general unit .....	State, County and Municipal Employees	3,000
Human services	New Jersey: Essex County mental health unit, nonprofessional .....	Employees Association (Ind.) .....	1,500
General government	Trenton municipal employees .....	State, County and Municipal Employees	1,100
	New York: Erie County white-collar employees .....	State, County and Municipal Employees	4,000

See footnote at end of table.

Continued—Major Agreements Expiring Next Month

Industry or activity	Employer and location	Labor organization <sup>1</sup>	Number of workers
	Erie County blue-collar employees .....	State, County and Municipal Employees	2,200
	Nassau County general unit .....	State, County and Municipal Employees	14,000
	New York City Housing Authority .....	Teamsters (Ind.) .....	6,200
	Rensselaer County general unit .....	State, County and Municipal Employees	1,400
	Schenectady County general unit .....	State, County and Municipal Employees	1,300
	Westchester County general unit .....	State, County and Municipal Employees	6,000
Education .....	Ohio: Dayton Board of Education, teachers .....	Education Association (Ind.) .....	1,800
	Cincinnati Board of Education, teachers .....	Teachers .....	3,100
	Cincinnati Board of Education, blue-collar employees .....	State, County and Municipal Employees	2,500
General government .....	Pennsylvania: Pittsburgh blue-collar employees .....	Joint Collective Bargaining Committee (Ind.)	1,050
Law enforcement .....	Pittsburgh Police Department .....	Police (Ind.) .....	1,150
Fire protection .....	Pittsburgh Fire Department .....	Fire Fighters .....	1,000

<sup>1</sup>Affiliated with AFL-CIO except where noted as independent (Ind.).

**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.



# Developments in Industrial Relations



## Ford-UAW contract bolsters job security

Well before the start of negotiations between the United Auto Workers (UAW) and General Motors Corp. (GM) and Ford Motor Co., the parties indicated that their general goals would again be heavily influenced by conditions that have prevailed in the automobile industry since the beginning of the decade. On management's side, there has been the increasing competition in the domestic market from foreign companies which have more recently set up vehicle and parts production plants in the United States. To counter the generally lower costs of the foreign companies, Ford, GM, and Chrysler Corp. have closed marginal plants, modernized plants, moved from internal production of vehicle parts toward purchases from lower cost outside suppliers, pressed the UAW for moderate wage and benefit terms and cost-reducing changes in work rules and job assignments, and increased employee involvement in improving quality. On the union side, bargaining focused on countering the cut in jobs resulting from the companies' efforts to compete more effectively.

The 1987 negotiations, which began in July at both Ford and GM, were further complicated by a major competitive difference between the two companies, raising the possibility that they would break from the tradition of essentially identical agreements that has prevailed since the 1950's. The difference is the higher degree of vertical integration at GM, which produces 70 percent of the parts it uses, compared with about 50 percent at Ford. GM said this gave Ford a cost advantage because parts purchased from outside suppliers are generally less costly than those manufactured internally. Early in 1987, GM announced plans to alleviate the disparity by shifting about 10 percent of its parts production to outside suppliers. At the start of the contract negotiations, GM moved to further reduce the difference by proposing that employees receive performance bonuses linked to the quantity and quality of the output of their particular plant, with employees in parts plants being eligible for smaller maximum amounts than workers in assembly plants. This proposal was rejected by the union.

After bargaining simultaneously with both companies for about a month, the UAW, at the end of August, suspended

negotiations with GM and focused on Ford, in accord with the union's usual "divide and conquer" strategy.

Prior to the mid-September contract expiration and scheduled strike date, Ford and the union had agreed, in principle, on a new job security program, easing the pressure on negotiators, who continued talking until they reached a peaceful settlement.

According to the UAW, the new Guaranteed Employment Numbers (GEN) job security program "moves well beyond" the Protected Employee Program adopted in 1984. Union officials said the new program will "maintain current job levels at all units in all locations and will prevent layoffs for virtually any reason except carefully-defined volume reductions linked to market conditions." If employees are laid off because of volume reductions, Ford must recall them in proportion to any subsequent restoration of production before it can resort to overtime work. Ford is also permitted to lay off workers because of acts of God and other conditions beyond the company's control; the sale of operations as an ongoing business; and in cases where the workers have been assigned or recalled to temporary jobs.

The job security plan is scheduled to begin by January 1, 1988, backed by a \$500 million Ford commitment. It provides for the number of "protected" employees at each plant to be increased when employees on the payroll at the effective date of the contract attain 1 year of seniority; when employees hired or rehired after the effective date of the contract attain 24 months of service; or when laid-off employees are recalled and receive pay for at least 26 weeks in any 52 consecutive weeks (this does not include employees recalled to meet the existing GEN requirements).

Protection will normally be reduced by one employee for every two who retire, quit, or die. If the parties agree on special payments or pension changes to induce employees to leave, the reduction will be on a one-for-one basis. A one-for-one ratio will also apply to plant closings.

At each facility, there will be a pool consisting of employees who would have been laid off if they had not been protected by the plan. All participants will continue to receive the same rate of pay and benefits they received prior to entering the pool. Pool employees may be placed in a training program, assume the work duties of another pool member undergoing training, or be given "nontraditional" assignments inside or outside the bargaining unit.

Workers who decline placement in a pool or who decline an assignment while in a pool will be replaced in the pool

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

by a recalled employee or a new hire. The nonparticipating employees will be subject to layoffs based on their seniority, and will have recall rights only to a nonpool job.

Senior pool members will have first rights to an available job within their geographic zone. If they turn down the offer, the job will be offered successively to pool members in reverse seniority order until the job is filled. Those who decline the job offer will be laid off. If no pool member within a zone accepts the job, it can be offered to out-of-zone employees, who will not lose their pool protection if they decline. In each transfer case, one position will be transferred from the releasing location to the receiving location. Similarly, jobs will follow work shifts to a Ford plant from one that is cutting back operations or closing.

There were a number of changes in the existing "out-source" provisions which regulate Ford's right to purchase parts from other companies. The company agreed to: a broader definition of outsourcing; give greater weight to long-term job stability and the impact on related facilities before purchase decisions are made; establish joint local committees on outsourcing, with unresolvable issues subject to appeal to a joint national committee; and to give the UAW 90 days' notice of outsourcing decisions affecting one job or more, instead of the previous 60 days' notice of decisions affecting 25 jobs or more.

Jobs will also be saved or created as a result of a company pledge to make "appropriate investments in support of its market objectives for Ford U.S.-built cars and trucks." During the negotiations, Ford identified 4,700 jobs in more than 10 facilities that will be created as a result of expansion plans already under consideration, as well as 4,200 jobs at five facilities which were at risk but are now planned to be saved.

From Ford's view, the crucial aspect of the contract is a new cooperative effort with the UAW to aid the company in improving product quality and operating efficiency, as well as increasing security for employees. To this end, the parties will establish a joint National Job Security and Operational Effectiveness Committee to direct and assist similar local committees. By mid-February 1988, each local committee will present plans for improving production quality and efficiency at its facility to the national committee. Provisions can include identification of needed plant investments; establishment of team production approaches for production workers, including changes to merit pay progression schedules if appropriate; identification of nonlabor cost savings; consideration of new forms of work planning in areas such as production and transportation and quality improvement; assuring supervisory support of programs; adoption of procedures to cut chronic absenteeism; giving the committees access to company product and employment plans and productivity records; and review of past outsourcing decisions, followed by consideration of ways to increase "insourcing."

The accord, which runs to September 14, 1990, provides for an immediate 3-percent specified wage increase, ranging from 32.5 cents an hour for employees whose previous base

wage rate was less than \$10.92 an hour to 50.5 cents for those whose base rate was between \$16.75 and \$16.91. The 1984 agreement provided for an immediate increase of 9.5 cents to 47 cents.

The employees will be eligible for possible automatic quarterly cost-of-living pay adjustments calculated at 1 cent an hour for each 0.26-point movement in the BLS Consumer Price Index for Urban Wage Earners and Clerical Workers (1967=100). This is the same as in the 1984 agreement, except that there is no longer a provision for permanently removing 1 cent or 2 cents from each adjustment to help moderate the settlement cost. The union calculated that adjustments would total \$1.73 an hour under the new contract, based on its projection of an average 4.7-percent annual rise in the CPI. Actual adjustments under the 1984 contract totaled 81 cents.

In October of 1988 and 1989, the employees will receive lump-sum performance bonus payments calculated at 3 percent of their earnings during the previous 12 months, including overtime, weekend earnings, holiday work premium pay, and incentive earnings. Under the previous contract, the workers received performance bonuses in October of 1985 and 1986, calculated at 2.25 percent of pay for compensated hours during 12-month periods, including overtime hours (but not overtime premium pay), vacation and holiday pay, shift premiums, and incentive earnings.

The profit-sharing plan, which had yielded payouts averaging \$1,200 in 1985 and \$2,100 in 1986, was liberalized by raising the employees' share to 7.5 percent of profits in excess of 1.8 percent but less than 2.3 percent of sales (a new bracket in the formula), plus 10 percent of profits between 2.3 percent and 4.6 percent of sales, plus 13.5 percent (formerly 12.5 percent) of profits between 4.6 percent and 6.9 percent, plus 16 percent (formerly 15 percent) of profits above 6.9 percent.

Limitations on overtime work during periods when workers are on layoff, which were addressed by the job security requirement that Ford must recall laid-off workers in proportion to any resumption in production, were also addressed by an increase in the overtime penalty. Now the company must pay \$1.25 into the employee training and development fund for each hour of overtime work in excess of 5 percent of all straight-time hours worked. Previously, the penalty was 50 cents for each such hour.

Other terms included increases in health insurance benefits, such as dental care and expansion of hospice care, and increases in levels of life, sickness and accident, and extended disability insurance benefits resulting from increases in the base wage rates to which they are linked; an increase in Ford's funding of the legal services plan to 7.2 cents per hour worked, from 4 cents; an increase in tuition assistance under the development and training program, and adoption of a plan to aid employees in personal financial planning; addition of a paid holiday, the birthday of Dr. Martin Luther King, Jr.; and an increase (in three steps) in the pension rate totaling \$4.20 a month for each year of credited service,



bringing the range to \$26.05 to \$27 effective October 1, 1989, for employees retiring on October 1, 1987, or later.

At the end of September, the UAW reported that 72 percent of its voting members at Ford had approved the new contract.

After negotiations were completed at Ford, the bargaining focus shifted to GM. Despite the production cost disparity between Ford and GM resulting from their differing levels of outsourcing, a GM official said the Ford contract could be tailored to GM because it recognizes the auto industry's "cyclicality." This raised the possibility that the pattern approach could more or less be maintained in the industry.

Chrysler, the third major domestic producer, had settled in concert with GM and Ford until 1979 when it encountered financial difficulties which led to major deviations. As Chrysler has improved its condition, there have been restorations of cuts in compensation, moving the employees toward a return to parity with GM and Ford workers. Chrysler's contract expires in September 1988.

### Teachers' negotiations generally peaceful

The academic year began on a generally peaceful note, as school systems throughout the Nation negotiated new contracts with teachers and related employees without work stoppages. Exceptions were in Chicago, IL, where 29,000 members of the American Federation of Teachers (AFT) walked out, and in Detroit, MI, where 11,500 AFT members struck.

In terms of the number of workers affected, the largest peaceful settlement was in New York City, where AFT Local 2 negotiated a contract for 62,000 teachers and 13,000 guidance counselors, social workers, psychologists, and other professional employees.

Over the 3-year term, salaries were raised 25 percent, bringing annual salaries to \$25,000 for starting teachers and \$50,000 for teachers with 20 years of service and 30 college credits beyond a master's degree. Reportedly, the average salary will be \$39,600 at the beginning of the 1989-90 school year.

Another provision gives the employees a greater voice in such matters as class size and choosing textbooks.

Teachers who are "slipping" professionally can now ask for assistance from an "intervener"—an experienced teacher who will aid them in improving their performance or counsel them to leave the system.

Contract gains by the Board of Education include stretching the progression time from starting salary to top salary to 20 years, from 15 years; requiring teachers to report for work one day earlier at the beginning of the school year; and lengthening each of the contract years by 3 weeks.

Elsewhere in New York State, Rochester public school teachers negotiated a contract under which some teachers could eventually earn up to \$70,000 a year. According to the AFT, which negotiated the 3-year contract, the Rochester salaries were in the top 1 percent in the Nation.

The contract calls for an immediate salary increase of \$4,500 a year for all teachers, bringing the starting rate to \$23,483. In the second and third years, all teachers will receive 11 percent increases, bringing the rate to \$45,773 in the final year for teachers with a master's degree and 11 years of experience.

In addition to the size of the salary increases, the contract was distinguished by a number of changes intended to improve the academic performance of pupils. One change was the classification of employees into four categories:

- Interns—first-year, inexperienced teachers who will work under an experienced teacher for 1 year.
- Residents—teachers who have finished their internship, but have not yet received tenure.
- Professionals—teachers with tenure.
- Lead teachers—a competitive level available to teachers who have at least 10 years of experience and meet high standards of performance.

The lead teachers could earn \$70,000 a year in the final year of the contract. They will be required to work 10 percent more time and waive seniority rights in assignments and transfers. Their time will be split equally between guiding other teachers and leading instructional teams.

Terms for all 2,400 teachers also include a 5-day extension of the school year to 190 days; elimination of seniority as the determining factor in transfers; and broadening of each teacher's responsibilities to include counseling of a group of students in school and in the students' homes.

### Retail trade settlements

In Southern California, 45,000 members of the United Food and Commercial Workers union were covered by a settlement with Albertson's, Lucky Stores, Ralph's, Safeway, Staler Brothers, and Vons food stores. The six chains, which make up the Food Employers Council, had initially sought a wage freeze and cuts in benefits but later agreed to lump-sum payments of \$500 in the first year and \$1,000 in the second year and a 50-cent-an-hour wage increase in the final year. There also were improvements in medical and pension benefits. The union also negotiated a similar 3-year contract for 20,000 Alpha Beta stores in the region.

In New York and New Jersey, 7,000 meat department employees of four grocery store chains negotiated wage increases totaling \$70 to \$80 a week over a 43-month contract term. The employees, who are represented by United Food and Commercial Workers Local 464A, also negotiated a phaseout of a two-tier pay system over an 18-month period, an increase to \$800 (from \$700) in the monthly pension for full-time employees with 35 years of service and an increase to \$450 a month (from \$220) in the normal benefit for part-time workers.

Elsewhere in the retail trade industry, 2,000 employees of the Bradlees discount department store chain in Maryland

and Virginia were covered by 3-year agreements negotiated by United Food and Commercial Workers Local 400. Although the two groups of employees covered by the settlements—1,800 at 15 stores in the Washington, DC, area and 1,000 at the 12 stores in central and southern Virginia—will continue to have different levels of wages and benefits, the negotiated improvements were essentially the same for all of the workers.

Wage increases totaled \$1.15 to \$1.45 an hour over the 3-year contract term for current employees and 75 cents over 24 months for employees hired after August 12.

Other provisions include:

- A new company-financed dental plan effective after 12 months of continuous service for full-time employees and after 18 months of continuous service for part-time employees.
- Two additional paid personal holidays over the term.
- Three weeks of paid vacation after 5 years of employment, instead of 6 years.
- Extending makeup jury duty pay to part-time employees.

About 1,600 employees of Nordstrom, Inc. department stores in Seattle, WA, negotiated a 2-year contract that provides for 10 cents an hour wage increases in each year. Under a new two-tier approach, current employees will continue to be paid at time and one-half rates for work on Sunday, while new hires will be paid at straight-time rates. The workers are members of United Food and Commercial Workers Local 1001.

### Coal operators sign 'me-too' agreement

The first major development in the round of negotiations in soft coal mining occurred when the Bituminous Coal Operators Association (BCOA) named their bargaining team and four of the operators that had withdrawn from the BCOA signed "me-too" contracts with the United Mine Workers. The "me-too" contracts guarantee that employees of the non-BCOA companies will receive the same wage and benefit terms as the employees of the BCOA companies, in return for giving up the right to strike when industry contracts expire on January 31, 1988. The companies are USX Corp.'s Mining Co. unit, Bethlehem Steel Corp's BethEnergy Mines Inc., Island Creek Coal Co., and Drummond Co.

The defections from the BCOA had led to speculation that the defectors planned to bargain individually with the Mine Workers in an effort to win better terms than the BCOA. This possibility was eliminated for the four companies that signed the me-too accords. Similar defections occurred prior to the 1984 BCOA-Mine Workers settlement, but the outcome was still a round of similar contracts at all major producers.

The BCOA negotiating team is led by B.R. Brown of Consolidation Coal Co., who also directed the operators' team in the 1984 and 1981 negotiations. Other team members are Thomas H. Saggau of Peabody Coal Co. and Gary McDowell of AMAX Coal Co.

### Apparel contract features parental leave

A settlement between the Ladies' Garment Workers and five groups of undergarment manufacturers calls for wage increases totaling more than 11 percent, and contains a new parental leave provision. Under the new provision, mothers and fathers retain job rights for up to 6 months of unpaid leave to care for children born or adopted into their family. The union said the provision was in response to changes in the American family, and would be a major goal in 1988 negotiations in various segments of the apparel industry.

During the first year of the 3-year agreement, only employees earning less than \$6.51 an hour will receive a wage increase, ranging up to 35 cents an hour. All employees will receive increases of 6 percent in July 1988 and 5 percent in July 1989. The employers also agreed to provide up to 2 weeks of makeup pay for workers on jury duty and to contribute an amount equal to 0.5 percent of payroll for a new mail-order prescription drug plan.

### New York City, Teamsters settle

New York City and the Teamsters union settled, but leaders of the other unions involved in the current round of negotiations with the city contended that the terms would not be pattern-setting. They said that the terms usually differ because of the special needs and concerns of their members. Overall, negotiations involve 60 unions representing more than 200,000 workers.

However, union leaders did agree that the Teamsters settlement terms were a substantial improvement over the city's initial offer: 3-year contracts providing for 2-percent increases in compensation in each year, and a first-year lump-sum payment equal to 0.5 percent of annual pay.

The Teamsters accord, covering 17,500 employees, provided for a 5-percent pay increase retroactive to July 1, 1987, and an additional 5 percent on July 1, 1988. There also will be a 5-percent increase on July 1, 1989, but it will be applied to rates in effect immediately prior to the settlement, rather than being compounded like the 1988 increase. The three increases equal 15.25 percent of the presettlement pay rates.

### Department store workers negotiate pay increase

About 3,000 workers in San Francisco were covered by 3-year contracts that the Department Store Employees negotiated with Macy's and Emporium-Capwell stores. The union estimated that the wage portion of the settlements would amount to 77 cents an hour, consisting of 10-cent wage increases in each year (30 cents for clerical employees) and lump-sum payments of \$400, \$250, and \$300 in the respective contract years. Part-time employees receive prorated bonuses based on the number of hours they work.

The maximum pension—payable to workers with 35 years of service—was increased to \$294 a month on September 1, 1987, and to \$308 on June 1, 1989.

### **Settlement ends strike at aircraft parts plants**

In California, workers at Rohr Industries' aircraft parts plants in Riverside and Chula Vista were covered by a 3-year contract negotiated by the Machinists union. The settlement, which ended a 9-day work stoppage, did not provide for any general wage increases, but the 4,600 employees will receive annual lump-sum payments equal to 10 percent of earnings during the first year and 6 percent during the other years.

Other wage terms included a 5- to 40-cent-an-hour increase in the starting rates of the lowest job classifications, a 71-cent increase in the maximum rates for all job classifications, and a return to uniform quarterly cost-of-living adjustments for all employees, calculated at 1 cent an hour for each 0.3-point movement in the Consumer Price Index. Under the prior contract, new employees received smaller adjustments than other employees.

Benefit terms included a monthly pension rate of \$24 for each year of service, instead of \$20; company payment of the full cost of optional preferred provider health insurance, instead of 95 percent; \$1 million lifetime major medical coverage, instead of \$250,000; and \$15,000 life insurance, instead of \$10,000.

### **Container rules violate Shipping Acts**

The International Longshoremen's Association's efforts to preserve jobs for its members suffered a blow when the Federal Maritime Commission held to be illegal the collective bargaining provisions which require that loading and unloading of cargo containers within 50 miles of a dock be performed by members of the union. The restriction, first

adopted in a 1959 agreement with the New York Shipping Association and later extended to other ports, reflected the union's concern over the cut in work resulting from the growing use of containers, which substantially reduce cargo handling.

The Maritime Commission conceded that it had no jurisdiction over the contents of the Longshoremen's labor agreements—including the container rules, which have been upheld by the Supreme Court—but maintained that it did have jurisdiction over carriers' tariffs, which also include the container handling restrictions. In its unanimous ruling, the Commission said that the restrictions illegally discriminate against certain shippers by denying them a free choice of methods of transportation. This lack of choice, the Commission said, violates the Shipping Acts of 1916 and 1984 by precluding "entire classes of shippers from fully utilizing containerization" and preventing shippers from determining for themselves "whether off-pier container loading will result in cost savings and efficiencies of service."

### **Safeway begins severance payments in Dallas**

Safeway Stores, Inc. began making severance payments to 6,000 employees who lost their jobs when the company closed its 131-store Dallas, TX, division in April. The distribution results from a "national" accord with the Food and Commercial Workers in which Safeway agreed to make severance payments to affected employees when the company closes entire divisions or sells operations and the new owner does not hire the laid-off employees. The agreement also gives displaced workers priority rights to jobs for which they are qualified in company divisions that continue operating.



# Book Reviews



## Titans of labor

*Labor Leaders in America*. Edited by Melvyn Dubofsky and Warren Van Tine. Urbana, University of Illinois Press, 1987, 396 pp. \$34.95, cloth; \$14.95, paper, University of Illinois Press, Champaign, IL 61820.

Henry Wadsworth Longfellow once noted that the lives of historic figures provide examples that we too can leave footprints in the sands of time. This book, a biographical assemblage of labor leaders who left indelible footprints, is a succinct yet delightful narration of American working class leadership, from the dawn of industrial capitalism to the current state of the labor relations process. Each chapter is a minibiography, and the collective authorship of those segments reads like a "Who's Who" of labor scholars. The common thread running through the fabric of the body is the transformation of youthful and energetic trade union activists into established labor bureaucrats. In their introduction, editors Melvyn Dubofsky and Warren Van Tine clearly set this framework through the personification of J. B. S. Hardman's mythical labor leader XYZ having a debate with HYS—His Younger Self.

The book's format is similar to that of previous multibiographical publications. Charles Madison's *American Labor Leaders*, first published in 1950, immediately draws comparisons. However, Madison did not have access to many of the resources made available over the past three decades. Gary Fink's compendium, *The Biographical Dictionary of American Labor Leaders*, lists hundreds of important figures but does not offer any analysis of the subjects. Like Madison's study, *Labor Leaders in America* focuses on the lives of the major labor figures: William Sylvis, Terence Powderly, Eugene V. Debs, "Big Bill" Haywood, Samuel Gompers, William Green, Philip Murray, John L. Lewis, Walter Reuther, Sidney Hillman, George Meany, and A. Philip Randolph. But, it also devotes three chapters to individuals not always included in similar biographies: Rose Schneiderman, Jimmy Hoffa, and Cesar Chavez. Each chapter is written by a different author, and, while the methodology is sound, there is an absence of continuity in writing style.

As in all compendia of this sort, the sketches are far too limited to completely satisfy the reader's curiosity. Such limitations prevent full elaboration of the lives and times of the subjects and actually create more questions than they answer. For example, some biographers of Samuel Gompers may contest Steven Fraser's statement that Sidney Hill-

man of the Clothing Workers union was "America's first labor statesman. . . ." Similarly, one wonders about how much George Meany's stewardship of the American Federation of Labor and Congress of Industrial Organizations, as characterized by Robert H. Zieger (*American Workers, American Unions, 1920-1985*, Baltimore, MD, Johns Hopkins University Press, 1986), contributed, if at all, to the decline of labor's power in recent years. Such issues cannot be resolved in this type of publication. However, soon to be published biographies, such as Steven Fraser's work on Sidney Hillman and Nelson Lichtenstein's research on Walter Reuther, will satiate scholarly curiosities. And, full-length biographies, such as Nick Salvatore's award winning study of Eugene V. Debs, are already available. Thus, *Labor Leaders in America* admirably fulfills the role for which it was intended, as both a supplement to larger and more comprehensive works and as a less inclusive yet informative sketch on the respective leaders.

The book does have a few flaws. The most noticeable one is the existence of typographical errors. Also, footnotes would have been more beneficial than the general bibliographies which follow each chapter.

Despite the minor shortcomings, this is a valuable resource. There have been considerable philosophical changes in historical interpretation over the past three decades, and *Labor Leaders in America* exemplifies many of those changes. It also illustrates that the figures examined shared a commonality of purpose, even if their methodologies and philosophies differed. Consequently, the fossilized footprints of the respective subjects are of different sizes, but they all point in the same direction.

—HENRY P. GUZDA

Bureau of Labor-Management Relations  
and Cooperative Programs  
U.S. Department of Labor

## Selection of key labor statistics

*Handbook of International Manpower Market Comparisons*. By Kenneth Walsh and Adrian King. Washington Square, NY, New York University Press, 1986. 318 pp. \$90.

This international comparative *Handbook* of key labor market indicators covers all 12 members of the European

Community, Japan, Norway, Sweden, and the United States. Data for the period 1974–83 are presented covering demography (population and activity rates), the labor force (including employment and unemployment), education (enrollments by educational level and graduates by field of study), industrial relations (union membership and strike activity), labor costs, and consumer prices. The format is country-by-country with a summary comparison chapter at the end. Appendixes provide advice on sources of statistics, comparative problems, and names and addresses of agencies in each country where the reader may request additional information.

Most of the data presented in this *Handbook* are obtained from international sources such as the Organization for Economic Cooperation and Development's (OECD's) *Labor Force Statistics*, the International Labour Office's (ILO's) *Yearbook of Labour Statistics*, and the United Nations Education, Cultural and Scientific Organization's (UNESCO's) *Statistical Year Book*. In addition, the Bureau of Labor Statistics' series of comparative total hourly compensation costs in manufacturing industry are used, and national sources have been referred to for data on duration of unemployment.

Depending most heavily on international sources (OECD, ILO, UNESCO), the authors do not delve as deeply as they might have into the national sources. Thus, some data elements listed as "not available" can be obtained from national sources. For example, the authors state that the number of pupils pursuing first level (elementary school) education is not available for the United States. However, such data have been available for many years from the U.S. Department of Education's Center for Education Statistics. Further, the authors are apparently unaware of the relatively new data series (beginning in 1983) on U.S. trade union membership available from the Current Population Survey. They use an older BLS data series which ends in 1980 and refer readers to more recent information which is available at irregular intervals from the Bureau of National Affairs.

The stated purpose of this *Handbook* is to enable "easy access to a selection of key labor market statistics that provide the basis of many cross-national comparisons." In general, this purpose has been fulfilled, although the statistics used in the volume are somewhat out-of-date. Pulling together the most significant labor market indicators, the *Handbook* presents cautionary notes as to their limitations for comparative analysis. The interested reader could easily update most of the statistical series by referring to current issues of the international sources.

Those looking for an indepth analysis of comparative labor market trends will have to look elsewhere. The text of the country sections and the summary chapter are little more than "table reading." There is no discussion of the reasons behind the varying trends and levels of indicators from country to country and no overall perspective on institutional differences and their impact on the statistics.

A novice in the field of international labor market com-

parisons would find this *Handbook* a helpful guide to what types of statistics are available, where they can be obtained, and how cautiously they should be used. The person already well versed in international labor data, however, will find nothing new or insightful here.

—CONSTANCE SORRENTINO  
Division of Foreign Labor Statistics  
Bureau of Labor Statistics

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### Economic and social statistics

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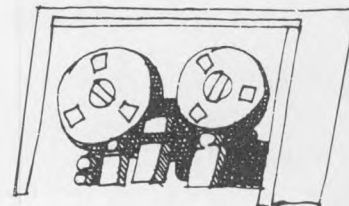
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(Signed) Henry Lowenstern, Editor-in-Chief		



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Nonfinancial corporations .....	.....	.....	December 3	3rd quarter	.....	.....	2; 42-44
Employment situation .....	November 6	October	December 4	November	January 8	December	1; 4-21
Producer Price Index .....	November 13	October	December 11	November	January 15	December	2; 33-35
Consumer Price Index .....	November 20	October	December 18	November	January 20	December	2; 30-32
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## NOTES ON CURRENT LABOR STATISTICS

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

### General notes

The following notes apply to several tables in this section:

**Seasonal adjustment.** Certain monthly and quarterly data are adjusted to eliminate the effect on the data of such factors as climatic conditions, industry production schedules, opening and closing of schools, holiday buying periods, and vacation practices, which might prevent short-term evaluation of the statistical series. Tables containing data that have been adjusted are identified as "seasonally adjusted." (All other data are not seasonally adjusted.) Seasonal effects are estimated on the basis of past experience. When new seasonal factors are computed each year, revisions may affect seasonally adjusted data for several preceding years. (Seasonally adjusted data appear in tables 1-3, 4-10, 13, 14, 17, and 18.) Beginning in January 1980, the BLS introduced two major modifications in the seasonal adjustment methodology for labor force data. First, the data are seasonally adjusted with a procedure called X-11 ARIMA, which was developed at Statistics Canada as an extension of the standard X-11 method previously used by BLS. A detailed description of the procedure appears in *The X-11 ARIMA Seasonal Adjustment Method* by Estela Bee Dagum (Statistics Canada, Catalogue No. 12-564E, February 1980). The second change is that seasonal factors are calculated for use during the first 6 months of the year, rather than for the entire year, and then are calculated at midyear for the July-December period. However, revisions of historical data continue to be made only at the end of each calendar year.

Seasonally adjusted labor force data in tables 1 and 4-10 were revised in the February 1987 issue of the *Review*, to reflect experience through 1986.

Annual revisions of the seasonally adjusted payroll data shown in tables 13, 14, and 18 were made in the July 1986 *Review* using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in table 42 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month to month and from quarter to quarter are published for numerous Consumer and Producer Price Index series. However, seasonally adjusted indexes are not published for the U.S. average All Items CPI. Only seasonally adjusted percent changes are available for this series.

**Adjustments for price changes.** Some data—such as the Hourly Earnings Index in table 17—are adjusted to eliminate the effect of changes in price. These adjustments are made by dividing current dollar values by the Consumer Price Index or the appropriate component of the index, then multiplying by 100. For example, given a current hourly wage rate of \$3 and a current price index number of 150, where 1977 = 100, the hourly rate expressed in 1977 dollars is \$2 ( $\$3/150 \times 100 = \$2$ ). The \$2 (or any other resulting values) are described as "real," "constant," or "1977" dollars.

### Additional information

Data that supplement the tables in this section are published by the Bureau in a variety of sources. News releases provide the latest statistical information published by the Bureau; the major recurring releases are published according to the schedule preceding these general notes. More information about labor force, employment, and unemployment data and the household and establishment surveys underlying the data are available in *Employment and Earnings*, a monthly publication of the Bureau. More data from the household survey are published in the two-volume data book—*Labor Force Statistics Derived From the Current Population Survey*, Bulletin 2096. 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 annual 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 Prices and Price Indexes*. Detailed data on all of the series in this section are provided in the *Handbook of Labor Statistics*, which is published biennially by the Bureau. BLS bulletins are issued covering productivity, injury and illness, and other data in this section. Finally, the *Monthly Labor Review* carries analytical articles on annual and longer term developments in labor force, employment, and unemployment; employee compensation and collective bargaining; prices; productivity; international comparisons; and injury and illness data.

### Symbols

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

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

n.e.c. = not elsewhere classified.

n.e.s. = not elsewhere specified.

## COMPARATIVE INDICATORS

(Tables 1-3)

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

**Labor market indicators** include employment measures from two major surveys and information on rates of change in compensation provided by the Employment Cost Index (ECI) program. The labor force participation rate, the employment-to-population ratio, and unemployment rates for major demographic groups based on the Current Population ("household") Survey are presented, while measures of employment and average weekly hours by major industry sector are given using nonagricultural payroll data. The Employment Cost Index (compensation), by major sector and by

bargaining status, is chosen from a variety of BLS compensation and wage measures because it provides a comprehensive measure of employer costs for hiring labor, not just outlays for wages, and it is not affected by employment shifts among occupations and industries.

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



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

#### Notes on the data

Definitions of each series and notes on the data are contained in later

sections of these notes describing each set of data. For detailed descriptions of each data series, see *BLS Handbook of Methods*, Volumes I and II, Bulletins 2134-1 and 2134-2 (Bureau of Labor Statistics, 1982 and 1984, respectively), as well as the additional bulletins, articles, and other publications noted in the separate sections of the *Review's* "Current Labor Statistics Notes." Historical data for many series are provided in the *Handbook of Labor Statistics*, Bulletin 2217 (Bureau of Labor Statistics, 1985). 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 59,500 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 household work, those not working while attending school, those unable to work because of long-term illness, those discouraged from seeking work because of personal or job-market factors, and those who are voluntarily idle. The **noninstitutional population** comprises all persons 16 years of age and older who are not inmates of penal or mental institutions, sanitariums, or homes for the aged, infirm, or needy, and members of the Armed Forces stationed in the United States. The **labor force participation rate** is the proportion of the noninstitutional population that is in the labor force. The **employment-population ratio** is total employment (including the resident Armed Forces) as a percent of the noninstitutional population.

#### Notes on the data

From time to time, and especially after a decennial census, adjustments are made in the Current Population Survey figures to correct for estimating errors during the preceding years. These adjustments affect the comparability of historical data. A description of these adjustments and their effect on

the various data series appear in the Explanatory Notes of *Employment and Earnings*.

Data in tables 4-10 are seasonally adjusted, based on the seasonal experience through December 1986.

#### Additional sources of information

For detailed explanations of the data, see *BLS Handbook of Methods*, Bulletin 2134-1 (Bureau of Labor Statistics, 1982), chapter 1, and for additional data, *Handbook of Labor Statistics*, Bulletin 2217 (Bureau of Labor Statistics, 1985). A detailed description of the Current Population Survey as well as additional data are available in the monthly Bureau of Labor Statistics periodical, *Employment and Earnings*. Historical data from 1948 to 1981 are available in *Labor Force Statistics Derived from the Current Population Survey: A Databook*, Vols. I and II, Bulletin 2096 (Bureau of Labor Statistics, 1982).

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 290,000 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 all nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 12-17 include production workers in manufacturing and mining; construction workers in construction; and nonsupervisory workers in the following industries: transportation and public utilities; wholesale and retail trade; finance, insurance, and real estate; and

services. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

**Earnings** are the payments production or nonsupervisory workers receive during the survey period, including premium pay for overtime or late-shift work but excluding irregular bonuses and other special payments.

**Real earnings** are earnings adjusted to reflect the effects of changes in consumer prices. The deflator for this series is derived from the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W). The **Hourly Earnings Index** is calculated from average hourly earnings data adjusted to exclude the effects of two types of changes that are unrelated to underlying wage-rate developments: fluctuations in overtime premiums in manufacturing (the only sector for which overtime data are available) and the effects of changes and seasonal factors in the proportion of workers in high-wage and low-wage industries.

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

The **Diffusion Index**, introduced in the May 1983 *Review*, represents the percent of 185 nonagricultural industries in which employment was rising over the indicated period. One-half of the industries with unchanged employment are counted as rising. In line with Bureau practice, data for the 1-, 3-, and 6-month spans are seasonally adjusted, while those for the 12-month span are unadjusted. The diffusion index is useful for measuring the dispersion of economic gains or losses and is also an economic indicator.

#### Notes on the data

Establishment data collected by the Bureau of Labor Statistics are periodically adjusted to comprehensive counts of employment (called "benchmarks"). The latest complete adjustment was made with the release of May 1987 data, published in the July 1987 issue of the *Review*. Consequently, data published in the *Review* prior to that issue are not necessarily comparable to current data. Unadjusted data have been revised back to April 1985; seasonally adjusted data have been revised back to January 1982. These revisions were published in the *Supplement to Employment and Earnings* (Bureau of Labor Statistics, 1987). Unadjusted data from April 1986 forward, and seasonally adjusted data from January 1983 forward are subject to revision in future benchmarks.

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

## COMPENSATION AND WAGE DATA

(Tables 1-3; 22-29)

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

### Employment Cost Index

#### Description of the series

The **Employment Cost Index** (ECI) is a quarterly measure of the rate of change in compensation per hour worked and includes wages, salaries, and employer costs of employee benefits. It uses a fixed market basket of

#### Additional sources of information

Detailed national data from the establishment survey are published monthly in the BLS periodical, *Employment and Earnings*. Earlier comparable unadjusted and seasonally adjusted data are published in *Employment, Hours, and Earnings, United States, 1909-84*, Bulletin 1312-12 (Bureau of Labor Statistics, 1985) and its annual supplement. For a detailed discussion of the methodology of the survey, see *BLS Handbook of Methods*, Bulletin 2134-1 (Bureau of Labor Statistics, 1982), chapter 2. For additional data, see *Handbook of Labor Statistics*, Bulletin 2217 (Bureau of Labor Statistics, 1985).

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 2134-1 (Bureau of Labor Statistics, 1982), chapter 4.

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 and on wages and salaries are available for private nonfarm workers excluding proprietors, the self-employed, and household workers. Both 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 2,200 private nonfarm establishments providing about 12,000 occupational observations and 700 State and local government establishments providing

3,500 occupational observations selected to represent total employment in each sector. On average, each reporting unit provides wage and compensation information on five well-specified occupations. Data are collected each quarter for the pay period including the 12th day of March, June, September, and December.

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

### Definitions

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

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

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

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

### Notes on the data

The Employment Cost Index data series began in the fourth quarter of 1975, with the quarterly percent change in wages and salaries in the private nonfarm sector. Data on employer costs for employee benefits were included in 1980 to produce, when combined with the wages and salaries series, a measure of the percent change in employer costs for employee total compensation. State and local government units were added to the ECI coverage in 1981, providing a measure of total compensation change in the civilian nonfarm economy (excluding Federal employees). Historical indexes (June 1981=100) of the quarterly rates of change are presented in the May issue of the BLS monthly periodical, *Current Wage Developments*.

### Additional sources of information

For a more detailed discussion of the Employment Cost Index, see the *Handbook of Methods*, Bulletin 2134-1 (Bureau of Labor Statistics, 1982), chapter 11, and the following *Monthly Labor Review* articles: "Employment Cost Index: a measure of change in the 'price of labor'," July 1975; "How benefits will be incorporated into the Employment Cost Index," January 1978; "Estimation procedures for the Employment Cost Index," May 1982; and "Introducing new weights for the Employment Cost Index," June 1985.

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

## Collective bargaining settlements

### Description of the series

**Collective bargaining settlements** data provide statistical measures of negotiated adjustments (increases, decreases, and freezes) in compensation

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

Settlement data are measured in terms of future specified adjustments: those that will occur within 12 months after contract ratification—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 hourly earnings, excluding overtime, 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 in 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

Care should be exercised in comparing the size and nature of the settlements in State and local government with those in the private sector because of differences in bargaining practices and settlement characteristics. A principal difference is the incidence of cost-of-living adjustment (COLA) clauses which cover only about 2 percent of workers under a few local government settlements, but cover 50 percent of workers under private sector settlements. Agreements without COLA's tend to provide larger specified wage increases than those with COLA's. Another difference is that State and local government bargaining frequently excludes pension benefits which are often prescribed by law. In the private sector, in contrast, pensions are typically a bargaining issue.

### Additional sources of information

For a more detailed discussion on the series, see the *BLS Handbook of Methods*, Bulletin 2134-1 (Bureau of Labor Statistics, 1982), chapter 10. Comprehensive data are published in press releases issued quarterly (in January, April, July, and October) for private industry, and semi-



annually (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 monthly 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 data appear in the BLS

monthly periodical, *Current Wage Developments*. Historical data appear in the *BLS Handbook of Labor Statistics*.

## Other compensation data

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

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

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

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

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

## PRICE DATA (Tables 2; 30-41)

PRICE DATA are gathered by the Bureau of Labor Statistics from retail and primary markets in the United States. Price indexes are given in relation to a base period (1967 = 100, 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, Volume II, The Consumer Price Index*, Bulletin 2134-2 (Bureau of Labor Statistics, 1984). 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 in primary markets of the United States by producers of commodities in all stages of processing. The sample used for calculating these indexes currently contains about 3,200 commodities and about 60,000 quotations per month selected to represent the movement of prices of all commodities produced in the manufacturing, agriculture, forestry, fishing, mining, gas and electricity, and public utilities sectors. The stage of processing structure of Producer Price Indexes organizes products by class of buyer and degree of fabrication (that is, finished goods, intermediate goods, and crude materials). The traditional commodity structure of PPI organizes products by similarity of end use or material composition.

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

Since January 1987, price changes for the various commodities have been averaged together with implicit quantity weights representing their importance in the total net selling value of all commodities as of 1982. The detailed data are aggregated to obtain indexes for stage-of-processing groupings, commodity groupings, durability-of-product groupings, and a number of special composite groups. All Producer Price Index data are subject to revision 4 months after original publication.

### Notes on the data

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

The Bureau has completed the first major stage of its comprehensive overhaul of the theory, methods, and procedures used to construct the Producer Price Indexes. Changes include the replacement of judgment sampling with probability sampling techniques; expansion to systematic

coverage of the net output of virtually all industries in the mining and manufacturing sectors; a shift from a commodity to an industry orientation; the exclusion of imports from, and the inclusion of exports in, the survey universe; and the respecification of commodities priced to conform to Bureau of the Census definitions. These and other changes have been phased in gradually since 1978. The result is a system of indexes that is easier to use in conjunction with data on wages, productivity, and employment and other series that are organized in terms of the Standard Industrial Classification and the Census product class designations.

### Additional sources of information

For a discussion of the methodology for computing Producer Price Indexes, see *BLS Handbook of Methods*, Bulletin 2134-1 (Bureau of Labor Statistics, 1982), chapter 7.

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 1977 = 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 1980.

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.

## PRODUCTIVITY DATA

(Tables 2; 42-47)

### U. S. productivity and related data

#### Description of the series

The productivity measures relate real physical output to real input. As such, they encompass a family of measures which include single factor 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 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.

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.

#### Additional sources of information

For a discussion of the general method of computing International Price Indexes, see *BLS Handbook of Methods*, Bulletin 2134-1 (Bureau of Labor Statistics, 1982), chapter 8.

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).

**Unit profits** include corporate profits and the value of inventory adjustments per unit of output.

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

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

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

#### Notes on the data

Output measures for the business sector and the nonfarm business sector exclude the constant dollar value of owner-occupied housing, rest of world, households and institutions, and general government output from the constant dollar value of gross national product. 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 output (gross product originating) from the Bureau of Economic Analysis. Compensation and hours data are developed from data of the Bureau of Labor Statistics and the Bureau of Economic Analysis.

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

#### Additional sources of information

Descriptions of methodology underlying the measurement of output per hour and multifactor productivity are found in the *BLS Handbook of Methods*, Bulletin 2134-1 (Bureau of Labor Statistics, 1982), chapter 13. Historical data for selected industries are provided in the Bureau's *Handbook of Labor Statistics*, 1985, Bulletin 2217.



## INTERNATIONAL COMPARISONS (Tables 45–47)

### Labor force and unemployment

#### Description of the series

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

#### Definitions

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

#### Notes on the data

The adjusted statistics have been adapted to the age at which compulsory schooling ends in each country, rather than to the U.S. standard of 16 years of age and over. Therefore, the adjusted statistics relate to the population age 16 and over in France, Sweden, and from 1973 onward, the United Kingdom; 16 and over in Canada, Australia, Japan, Germany, the Netherlands, and prior to 1973, the United Kingdom; and 14 and over in Italy. The institutional population is included in the denominator of the labor force participation rates and employment-population ratios for Japan and Germany; it is excluded for the United States and the other countries.

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

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

#### Additional sources of information

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

### Manufacturing productivity and labor costs

#### Description of the series

Table 47 presents comparative measures of manufacturing labor productivity, hourly compensation costs, and unit labor costs for the United

States, Canada, Japan, and nine European countries. These measures are limited to trend comparisons—that is, intercountry series of changes over time—rather than level comparisons because reliable international comparisons of the levels of manufacturing output are unavailable.

#### Definitions

**Output** is constant value output (value added), generally taken from the national accounts of each country. While the national accounting methods for measuring real output differ considerably among the 12 countries, the use of different procedures does not, in itself, connote lack of comparability—rather, it reflects differences among countries in the availability and reliability of underlying data series.

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

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

#### Notes on the data

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

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

#### Additional sources of information

For additional information, see the *BLS Handbook of Methods*, Bulletin 2134-1 (Bureau of Labor Statistics, 1982), chapter 16 and periodic *Monthly Labor Review* articles. Historical data are provided in the Bureau's *Handbook of Labor Statistics*, Bulletin 2217, 1985. The statistics are issued twice per year—in a news release (generally in May) and in a *Monthly Labor Review* article (generally in December).

## OCCUPATIONAL INJURY AND ILLNESS DATA

(Table 48)

### Description of the series

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

Because the survey is a Federal-State cooperative program and the data must meet the needs of participating State agencies, an independent sample is selected for each State. The sample is selected to represent all private industries in the States and territories. The sample size for the survey is dependent upon (1) the characteristics for which estimates are needed; (2) the industries for which estimates are desired; (3) the characteristics of the population being sampled; (4) the target reliability of the estimates; and (5) the survey design employed.

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

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

### Definitions

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

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

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

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

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

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

**Lost workdays—restricted work activity** are the number of workdays (consecutive or not) on which, because of injury or illness: (1) the employee was assigned to another job on a temporary basis; or (2) the em-

ployee 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 Occupational Safety and Health Statistics.

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 Occupational Safety and Health Statistics.

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 2134-1 (Bureau of Labor Statistics, 1982), chapter 17; *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	1985	1986	1985		1986				1987	
			III	IV	I	II	III	IV	I	II
<b>Employment data</b>										
Employment status of the civilian noninstitutionalized population (household survey) <sup>1</sup>										
Labor force participation rate .....	64.8	65.3	64.7	64.9	65.1	65.2	65.3	65.4	65.5	65.5
Employment-population ratio .....	60.1	60.7	60.1	60.3	60.5	60.6	60.8	60.9	61.1	61.5
Unemployment rate .....	7.2	7.0	7.2	7.1	7.1	7.1	6.9	6.9	6.7	6.2
Men .....	7.0	6.9	7.0	6.9	6.9	7.0	6.9	6.9	6.7	6.3
16 to 24 years .....	14.1	13.7	14.0	14.2	13.5	14.2	13.7	13.4	13.4	13.1
25 years and over .....	5.3	5.4	5.3	5.2	5.3	5.3	5.4	5.4	5.2	4.8
Women .....	7.4	7.1	7.4	7.3	7.3	7.2	6.9	6.8	6.6	6.1
16 to 24 years .....	13.0	12.8	12.9	13.1	13.1	13.1	12.6	12.5	12.6	11.8
25 years and over .....	5.9	5.5	5.9	5.6	5.7	5.7	5.4	5.3	5.1	4.6
Unemployment rate, 15 weeks and over .....	2.0	1.9	2.0	1.9	1.9	1.9	1.9	1.8	1.8	1.7
Employment, nonagricultural (payroll data), in thousands: <sup>1</sup>										
Total .....	97,519	99,610	97,775	98,444	98,901	99,321	99,804	100,397	101,133	101,708
Private sector .....	81,125	82,900	81,303	81,905	82,299	82,670	83,119	83,498	84,183	84,675
Goods-producing .....	24,859	24,681	24,788	24,788	24,767	24,702	24,629	24,624	24,733	24,757
Manufacturing .....	19,260	18,994	19,183	19,133	19,086	19,003	18,939	18,953	18,979	19,015
Service-producing .....	72,660	74,930	72,987	73,656	74,134	74,619	75,175	75,773	76,399	76,951
Average hours:										
Private sector .....	34.9	34.8	34.9	34.9	34.9	34.8	34.7	34.7	34.8	34.8
Manufacturing .....	40.5	40.7	40.6	40.8	40.7	40.7	40.7	40.8	41.0	40.9
Overtime .....	3.3	3.4	3.3	3.4	3.4	3.4	3.5	3.5	3.6	3.7
<b>Employment Cost Index</b>										
Percent change in the ECI, compensation:										
All workers (excluding farm, household, and Federal workers) .....	4.3	3.6	1.6	.6	1.1	.7	1.1	.6	.9	.7
Private industry workers .....	3.9	3.2	1.3	.6	1.1	.8	.7	.6	1.0	.7
Goods-producing <sup>2</sup> .....	3.4	3.1	.6	.6	1.1	.9	.6	.5	.5	.7
Service-producing <sup>2</sup> .....	4.4	3.2	1.8	.5	1.1	.6	.8	.6	1.3	.7
State and local government workers .....	5.7	5.2	3.4	.7	1.0	.6	2.8	.8	.8	.3
Workers by bargaining status (private industry):										
Union .....	2.6	2.1	.8	.5	1.0	.2	.5	.3	.5	.5
Nonunion .....	4.6	3.6	1.4	.6	1.2	.9	.8	.7	1.1	.7

<sup>1</sup> Quarterly data seasonally adjusted.

<sup>2</sup> 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	1985	1986	1985		1986				1987		
			III	IV	I	II	III	IV	I	II	
<b>Compensation data <sup>1, 2</sup></b>											
Employment Cost Index--compensation (wages, salaries, benefits):											
Civilian nonfarm .....	4.3	3.6	1.6	0.6	1.1	0.7	1.1	0.6	0.9	0.7	
Private nonfarm .....	3.9	3.2	1.3	.6	1.1	.8	.7	.6	1.0	.7	
Employment Cost Index--wages and salaries											
Civilian nonfarm .....	4.4	3.5	1.7	.6	1.0	.8	1.1	.6	1.0	.5	
Private nonfarm .....	4.1	3.1	1.3	.6	1.0	.9	.7	.5	1.0	.7	
<b>Price data <sup>1</sup></b>											
Consumer Price Index (All urban consumers): All items .....	3.8	1.1	.7	.9	-4	.6	.7	.3	1.4	1.3	
Producer Price Index:											
Finished goods .....	1.8	-2.3	-1.4	2.5	-3.1	.5	-.7	1.1	.8	1.4	
Finished consumer goods .....	1.5	-3.6	-1.4	2.5	-4.1	.4	-.7	.8	.9	1.8	
Capital equipment .....	2.7	2.1	-1.4	2.5	.2	.6	-.7	2.0	.1	.4	
Intermediate materials, supplies, components .....	-.3	-4.4	-.5	.4	-2.9	-.9	-.2	-.4	1.4	1.8	
Crude materials .....	-5.6	-9.0	-4.5	4.3	-7.6	-1.5	-.5	.6	4.2	5.6	
<b>Productivity data <sup>3</sup></b>											
Output per hour of all persons:											
Business sector .....	1.8	1.9	2.5	1.9	2.8	2.3	1.3	1.5	.2	.4	
Nonfarm business sector .....	1.2	1.6	1.7	1.0	2.3	1.9	1.1	1.5	-.1	.3	
Nonfinancial corporations <sup>4</sup> .....	2.1	1.6	3.3	2.3	2.6	1.8	.7	1.5	0	.3	

<sup>1</sup> 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.

<sup>2</sup> Excludes Federal and private household workers.

<sup>3</sup> 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.

<sup>4</sup> Output per hour of all employees.

3. Alternative measures of wage and compensation changes

Components	Quarterly average						Four quarters ended--					
	1986				1987		1986				1987	
	I	II	III	IV	I	II	I	II	III	IV	I	II
Average hourly compensation: <sup>1</sup>												
All persons, business sector .....	4.8	4.4	3.7	3.3	2.8	2.8	3.2	3.5	3.0	3.6	1.4	3.3
All employees, nonfarm business sector .....	4.5	4.1	3.6	3.4	2.7	2.7	3.9	2.9	2.8	4.0	1.1	3.0
Employment Cost Index--compensation:												
Civilian nonfarm <sup>2</sup> .....	1.1	.7	1.1	.6	.9	.7	4.1	4.0	3.6	3.6	3.4	3.3
Private nonfarm .....	1.1	.8	.7	.6	1.0	.7	3.8	3.8	3.2	3.2	3.1	3.0
Union .....	1.0	.2	.5	.3	.5	.5	2.9	2.5	2.3	2.1	1.6	1.9
Nonunion .....	1.2	.9	.8	.7	1.1	.7	4.2	4.2	3.5	3.6	3.6	3.4
State and local governments .....	1.0	.6	2.8	.8	.8	.3	5.5	5.8	5.2	5.2	5.0	4.7
Employment Cost Index--wages and salaries:												
Civilian nonfarm <sup>2</sup> .....	1.0	.8	1.1	.6	1.0	.5	4.2	4.1	3.5	3.5	3.5	3.2
Private nonfarm .....	1.0	.9	.7	.5	1.0	.7	3.9	3.7	3.1	3.1	3.2	3.0
Union .....	.7	.4	.6	.2	.4	.5	3.2	2.5	2.3	2.0	1.7	1.7
Nonunion .....	1.1	.9	.7	.7	1.2	.8	4.3	4.1	3.4	3.5	3.5	3.3
State and local governments .....	1.0	.4	3.2	.7	.8	.2	5.5	5.7	5.4	5.4	5.2	5.0
Total effective wage adjustments <sup>3</sup> .....	.6	.7	.5	.5	.4	1.0	3.1	2.9	2.3	2.3	2.0	2.2
From current settlements .....	( <sup>4</sup> )	.2	.1	.2	( <sup>4</sup> )	.1	.6	.5	.5	.5	.4	.3
From prior settlements .....	.4	.6	.5	.2	.3	.7	1.7	1.8	1.6	1.7	1.5	1.6
From cost-of-living provision .....	.2	( <sup>4</sup> )	( <sup>4</sup> )	.1	.1	.2	.8	.7	.2	.2	.1	.3
Negotiated wage adjustments from settlements: <sup>3</sup>												
First-year adjustments .....	.8	1.3	.8	2.0	1.2	2.6	2.0	1.6	1.2	1.2	1.2	1.5
Annual rate over life of contract .....	1.5	2.0	1.5	2.1	1.8	2.9	2.5	2.2	1.7	1.8	1.8	2.0
Negotiated wage and benefit adjustments from settlements: <sup>5</sup>												
First-year adjustment .....	.6	.7	.7	2.7	1.7	4.2	2.3	1.4	.9	1.1	1.2	1.9
Annual rate over life of contract .....	1.2	1.6	1.2	2.4	2.4	3.9	2.5	2.0	1.4	1.6	1.7	2.1

<sup>1</sup> Seasonally adjusted.

<sup>2</sup> Excludes Federal and household workers.

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

<sup>4</sup> Data round to zero.

<sup>5</sup> 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		1986				1987								
	1985	1986	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
<b>TOTAL</b>															
Noninstitutional population <sup>1, 2</sup> .....	179,912	182,293	182,713	182,935	183,114	183,297	183,575	183,738	183,915	184,079	184,259	184,421	184,605	184,738	184,904
Labor force <sup>2</sup> .....	117,167	119,540	119,988	120,163	120,426	120,336	120,782	121,089	120,958	121,070	121,719	121,235	121,672	122,038	121,604
Participation rate <sup>3</sup> .....	65.1	65.6	65.7	65.7	65.8	65.7	65.8	65.9	65.8	65.8	66.1	65.7	65.9	66.1	65.8
Total employed <sup>2</sup> .....	108,856	111,303	111,703	111,941	112,183	112,387	112,759	113,122	113,104	113,570	114,173	113,975	114,447	114,817	114,515
Employment-population ratio <sup>4</sup> .....	60.5	61.1	61.1	61.2	61.3	61.3	61.4	61.6	61.5	61.7	62.0	61.8	62.0	62.2	61.9
Resident Armed Forces <sup>1</sup> .....	1,706	1,706	1,716	1,749	1,751	1,750	1,748	1,740	1,736	1,735	1,726	1,718	1,720	1,736	1,743
Civilian employed .....	107,150	109,597	109,987	110,192	110,432	110,637	111,011	111,382	111,368	111,835	112,447	112,257	112,727	113,081	112,772
Agriculture .....	3,179	3,163	3,142	3,162	3,215	3,161	3,145	3,236	3,284	3,290	3,335	3,178	3,219	3,092	3,170
Nonagricultural industries .....	103,971	106,434	106,845	107,030	107,217	107,476	107,866	108,146	108,084	108,545	109,112	109,079	109,508	109,989	109,602
Unemployed .....	8,312	8,237	8,285	8,222	8,243	7,949	8,023	7,967	7,854	7,500	7,546	7,260	7,224	7,221	7,089
Unemployment rate <sup>5</sup> .....	7.1	6.9	6.9	6.8	6.8	6.6	6.6	6.6	6.5	6.2	6.2	6.0	5.9	5.9	5.8
Not in labor force .....	62,744	62,752	62,725	62,772	62,688	62,961	62,793	62,649	62,957	63,009	62,540	63,187	62,933	62,700	63,300
<b>Men, 16 years and over</b>															
Noninstitutional population <sup>1, 2</sup> .....	86,025	87,349	87,556	87,682	87,773	87,868	88,020	88,099	88,186	88,271	88,361	88,442	88,534	88,598	88,683
Labor force <sup>2</sup> .....	65,967	66,973	67,128	67,130	67,407	67,425	67,672	67,764	67,644	67,603	67,816	67,556	67,656	67,925	67,736
Participation rate <sup>3</sup> .....	76.7	76.7	76.7	76.6	76.8	76.7	76.9	76.9	76.7	76.6	76.7	76.4	76.4	76.7	76.4
Total employed <sup>2</sup> .....	61,447	62,443	62,528	62,565	62,833	62,986	63,187	63,335	63,282	63,417	63,562	63,471	63,715	63,918	63,939
Employment-population ratio <sup>4</sup> .....	71.4	71.5	71.4	71.4	71.6	71.7	71.8	71.9	71.8	71.8	71.9	71.8	72.0	72.1	72.1
Resident Armed Forces <sup>1</sup> .....	1,556	1,551	1,560	1,590	1,592	1,593	1,591	1,584	1,575	1,575	1,566	1,559	1,561	1,575	1,581
Civilian employed .....	59,891	60,892	60,968	60,975	61,241	61,393	61,596	61,751	61,707	61,842	61,996	61,912	62,154	62,343	62,358
Unemployed .....	4,521	4,530	4,600	4,565	4,574	4,439	4,484	4,429	4,362	4,186	4,254	4,085	3,941	4,007	3,798
Unemployment rate <sup>5</sup> .....	6.9	6.8	6.9	6.8	6.8	6.6	6.6	6.5	6.4	6.2	6.3	6.0	5.8	5.9	5.6
<b>Women, 16 years and over</b>															
Noninstitutional population <sup>1, 2</sup> .....	93,886	94,944	95,156	95,253	95,341	95,429	95,556	95,639	95,729	95,808	95,898	95,979	96,071	96,140	96,221
Labor force <sup>2</sup> .....	51,200	52,568	52,860	53,033	53,019	52,911	53,110	53,325	53,314	53,467	53,903	53,679	54,016	54,113	53,868
Participation rate <sup>3</sup> .....	54.5	55.4	55.6	55.7	55.6	55.4	55.6	55.8	55.7	55.8	56.2	55.9	56.2	56.3	56.0
Total employed <sup>2</sup> .....	47,409	48,861	49,175	49,376	49,350	49,401	49,572	49,787	49,822	50,153	50,611	50,504	50,733	50,899	50,576
Employment-population ratio <sup>4</sup> .....	50.5	51.5	51.7	51.8	51.8	51.8	51.9	52.1	52.0	52.3	52.8	52.6	52.8	52.9	52.6
Resident Armed Forces <sup>1</sup> .....	150	155	156	159	159	157	157	156	161	160	160	159	159	161	162
Civilian employed .....	47,259	48,706	49,019	49,217	49,191	49,244	49,415	49,631	49,661	49,993	50,451	50,345	50,574	50,738	50,414
Unemployed .....	3,791	3,707	3,685	3,657	3,669	3,510	3,538	3,538	3,492	3,314	3,292	3,175	3,283	3,213	3,291
Unemployment rate <sup>5</sup> .....	7.4	7.1	7.0	6.9	6.9	6.6	6.7	6.6	6.6	6.2	6.1	5.9	6.1	5.9	6.1

<sup>1</sup> The population and Armed Forces figures are not adjusted for seasonal variation.

<sup>2</sup> Includes members of the Armed Forces stationed in the United States.

<sup>3</sup> Labor force as a percent of the noninstitutional population.

<sup>4</sup> Total employed as a percent of the noninstitutional population.

<sup>5</sup> 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		1986				1987								
	1985	1986	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
<b>TOTAL</b>															
Civilian noninstitutional population <sup>1</sup> .....	178,206	180,587	180,997	181,186	181,363	181,547	181,827	181,998	182,179	182,344	182,533	182,703	182,885	183,002	183,161
Civilian labor force .....	115,461	117,834	118,272	118,414	118,675	118,586	119,034	119,349	119,222	119,335	119,993	119,517	119,952	120,302	119,861
Participation rate .....	64.8	65.3	65.3	65.4	65.4	65.3	65.5	65.6	65.4	65.4	65.7	65.4	65.6	65.7	65.4
Employed .....	107,150	109,597	109,987	110,192	110,432	110,637	111,011	111,382	111,368	111,835	112,447	112,257	112,727	113,081	112,772
Employment-population ratio <sup>2</sup> .....	60.1	60.7	60.8	60.8	60.9	60.9	61.1	61.2	61.1	61.3	61.6	61.4	61.6	61.8	61.6
Unemployed .....	8,312	8,237	8,285	8,222	8,243	7,949	8,023	7,967	7,854	7,500	7,546	7,260	7,224	7,221	7,089
Unemployment rate .....	7.2	7.0	7.0	6.9	6.9	6.7	6.7	6.7	6.6	6.3	6.3	6.1	6.0	6.0	5.9
Not in labor force .....	62,744	62,752	62,725	62,772	62,688	62,961	62,793	62,649	62,957	63,009	62,540	63,187	62,933	62,700	63,300
<b>Men, 20 years and over</b>															
Civilian noninstitutional population <sup>1</sup> .....	77,195	78,523	78,722	78,802	78,874	78,973	79,132	79,216	79,303	79,387	79,474	79,536	79,625	79,668	79,740
Civilian labor force .....	60,277	61,320	61,412	61,409	61,703	61,826	61,948	61,973	61,983	61,976	62,156	62,057	62,116	62,053	62,045
Participation rate .....	78.1	78.1	78.0	77.9	78.2	78.3	78.2	78.2	78.2	78.1	78.2	78.0	78.0	77.9	77.8
Employed .....	56,562	57,569	57,607	57,595	57,883	58,101	58,227	58,325	58,410	58,567	58,721	58,620	58,793	58,818	58,957
Employment-population ratio <sup>2</sup> .....	73.3	73.3	73.2	73.1	73.4	73.6	73.6	73.6	73.7	73.8	73.9	73.7	73.8	73.8	73.9
Agriculture .....	2,278	2,292	2,286	2,297	2,303	2,289	2,254	2,300	2,411	2,411	2,441	2,307	2,343	2,254	2,355
Nonagricultural industries .....	54,284	55,277	55,321	55,298	55,580	55,812	55,974	56,024	55,999	56,155	56,280	56,313	56,450	56,564	56,601
Unemployed .....	3,715	3,751	3,805	3,814	3,820	3,725	3,720	3,648	3,573	3,409	3,436	3,437	3,323	3,235	3,089
Unemployment rate .....	6.2	6.1	6.2	6.2	6.2	6.0	6.0	5.9	5.8	5.5	5.5	5.5	5.4	5.2	5.0
<b>Women, 20 years and over</b>															
Civilian noninstitutional population <sup>1</sup> .....	86,506	87,567	87,779	87,856	87,933	88,016	88,150	88,237	88,321	88,395	88,464	88,546	88,632	88,685	88,785
Civilian labor force .....	47,283	48,589	48,920	49,014	49,043	48,923	49,161	49,348	49,355	49,466	49,774	49,714	49,971	49,989	49,882
Participation rate .....	54.7	55.5	55.7	55.8	55.8	55.6	55.8	55.9	55.9	56.0	56.3	56.1	56.4	56.4	56.2
Employed .....	44,154	45,556	45,905	46,020	46,067	46,058	46,261	46,475	46,498	46,751	47,094	47,126	47,288	47,324	47,179
Employment-population ratio <sup>2</sup> .....	51.0	52.0	52.3	52.4	52.4	52.3	52.5	52.7	52.6	52.9	53.2	53.2	53.4	53.4	53.1
Agriculture .....	596	614	614	612	675	621	628	641	589	587	634	615	619	603	585
Nonagricultural industries .....	43,558	44,943	45,291	45,408	45,392	45,437	45,633	45,835	45,909	46,164	46,460	46,512	46,669	46,722	46,594
Unemployed .....	3,129	3,032	3,015	2,994	2,976	2,865	2,900	2,873	2,857	2,715	2,680	2,588	2,683	2,664	2,703
Unemployment rate .....	6.6	6.2	6.2	6.1	6.1	5.9	5.9	5.8	5.8	5.5	5.4	5.2	5.4	5.3	5.4
<b>Both sexes, 16 to 19 years</b>															
Civilian noninstitutional population <sup>1</sup> .....	14,506	14,496	14,496	14,527	14,557	14,558	14,545	14,546	14,555	14,562	14,595	14,621	14,628	14,649	14,637
Civilian labor force .....	7,901	7,926	7,940	7,991	7,929	7,837	7,926	8,028	7,884	7,894	8,063	7,746	7,865	8,260	7,933
Participation rate .....	54.5	54.7	54.8	55.0	54.5	53.8	54.5	55.2	54.2	54.2	55.2	53.0	53.8	56.4	54.2
Employed .....	6,434	6,472	6,475	6,577	6,482	6,478	6,524	6,582	6,460	6,518	6,633	6,511	6,647	6,939	6,636
Employment-population ratio <sup>2</sup> .....	44.4	44.6	44.7	45.3	44.5	44.5	44.9	45.2	44.4	44.8	45.4	44.5	45.4	47.4	45.3
Agriculture .....	305	258	242	253	237	251	264	295	284	292	261	257	258	236	230
Nonagricultural industries .....	6,129	6,215	6,233	6,324	6,245	6,227	6,260	6,287	6,176	6,226	6,372	6,254	6,389	6,703	6,406
Unemployed .....	1,468	1,454	1,465	1,414	1,447	1,359	1,402	1,446	1,424	1,376	1,430	1,235	1,218	1,321	1,297
Unemployment rate .....	18.6	18.3	18.5	17.7	18.2	17.3	17.7	18.0	18.1	17.4	17.7	15.9	15.5	16.0	16.3
<b>White</b>															
Civilian noninstitutional population <sup>1</sup> .....	153,679	155,432	155,723	155,856	155,979	156,111	156,313	156,431	156,561	156,676	156,811	156,930	157,058	157,134	157,242
Civilian labor force .....	99,926	101,801	102,158	102,297	102,455	102,503	102,746	102,893	102,797	102,894	103,573	103,106	103,272	103,614	103,278
Participation rate .....	65.0	65.5	65.6	65.6	65.7	65.7	65.7	65.8	65.7	65.7	66.1	65.7	65.8	65.9	65.7
Employed .....	93,736	95,660	96,000	96,147	96,281	96,533	96,717	96,995	96,998	97,340	98,050	97,716	97,958	98,299	97,995
Employment-population ratio <sup>2</sup> .....	61.0	61.5	61.6	61.7	61.7	61.8	61.9	62.0	62.0	62.1	62.5	62.3	62.4	62.6	62.3
Unemployed .....	6,191	6,140	6,158	6,150	6,174	5,970	6,029	5,898	5,799	5,554	5,524	5,390	5,314	5,315	5,283
Unemployment rate .....	6.2	6.0	6.0	6.0	6.0	5.8	5.9	5.7	5.6	5.4	5.3	5.2	5.1	5.1	5.1
<b>Black</b>															
Civilian noninstitutional population <sup>1</sup> .....	19,664	19,989	20,056	20,089	20,120	20,152	20,187	20,218	20,249	20,279	20,312	20,341	20,373	20,396	20,426
Civilian labor force .....	12,364	12,654	12,652	12,720	12,719	12,707	12,831	12,957	12,844	12,743	12,860	12,863	13,047	13,194	13,027
Participation rate .....	62.9	63.3	63.1	63.3	63.2	63.1	63.6	64.1	63.4	62.8	63.3	63.2	64.0	64.7	63.8
Employed .....	10,501	10,814	10,799	10,895	10,910	10,968	10,997	11,101	11,053	11,090	11,080	11,223	11,401	11,563	11,427
Employment-population ratio <sup>2</sup> .....	53.4	54.1	53.8	54.2	54.2	54.4	54.5	54.9	54.6	54.7	54.6	55.2	56.0	56.7	55.9
Unemployed .....	1,864	1,840	1,853	1,825	1,809	1,739	1,833	1,855	1,791	1,653	1,779	1,640	1,647	1,630	1,599
Unemployment rate .....	15.1	14.5	14.6	14.3	14.2	13.7	14.3	14.3	13.9	13.0	13.8	12.7	12.6	12.4	12.3

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		1986				1987								
	1985	1986	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
<b>Hispanic origin</b>															
Civilian noninstitutional population <sup>1</sup> .....	11,915	12,344	12,432	12,469	12,505	12,540	12,653	12,692	12,732	12,770	12,809	12,848	12,887	12,925	12,965
Civilian labor force .....	7,698	8,076	8,179	8,200	8,226	8,320	8,431	8,457	8,392	8,484	8,586	8,452	8,411	8,544	8,568
Participation rate .....	64.6	65.4	65.8	65.8	65.8	66.3	66.6	66.6	65.9	66.4	67.0	65.8	65.3	66.1	66.1
Employed .....	6,888	7,219	7,286	7,345	7,437	7,446	7,538	7,644	7,639	7,701	7,838	7,730	7,744	7,864	7,869
Employment-population ratio <sup>2</sup> .....	57.8	58.5	58.6	58.9	59.5	59.4	59.6	60.2	60.0	60.3	61.2	60.2	60.1	60.8	60.7
Unemployed .....	811	857	893	855	789	874	893	813	753	783	748	722	667	680	699
Unemployment rate .....	10.5	10.6	10.9	10.4	9.6	10.5	10.6	9.6	9.0	9.2	8.7	8.5	7.9	8.0	8.2

<sup>1</sup> The population figures are not seasonally adjusted.

<sup>2</sup> Civilian employment as a percent of the civilian noninstitutional population.

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

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

**6. Selected employment indicators, monthly data seasonally adjusted**

(In thousands)

Selected categories	Annual average		1986				1987								
	1985	1986	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
<b>CHARACTERISTIC</b>															
Civilian employed, 16 years and over .....	107,150	109,597	109,987	110,192	110,432	110,637	111,011	111,382	111,368	111,835	112,447	112,257	112,727	113,081	112,772
Men .....	59,891	60,892	60,968	60,975	61,241	61,393	61,596	61,751	61,707	61,842	61,996	61,912	62,154	62,343	62,358
Women .....	47,259	48,706	49,019	49,217	49,191	49,244	49,415	49,631	49,661	49,993	50,451	50,345	50,574	50,738	50,414
Married men, spouse present ..	39,248	39,658	39,691	39,780	39,952	40,093	40,102	39,913	40,100	39,967	40,029	40,057	40,241	40,260	40,370
Married women, spouse present .....	26,336	27,144	27,249	27,323	27,333	27,400	27,525	27,817	27,965	28,213	28,495	28,458	28,426	28,196	27,988
Women who maintain families ..	5,597	5,837	5,926	6,016	6,041	6,005	5,985	5,906	5,933	5,972	5,921	5,939	6,013	6,108	6,164
<b>MAJOR INDUSTRY AND CLASS OF WORKER</b>															
Agriculture:															
Wage and salary workers .....	1,535	1,547	1,521	1,562	1,582	1,621	1,650	1,647	1,739	1,589	1,695	1,614	1,619	1,566	1,615
Self-employed workers .....	1,458	1,447	1,460	1,451	1,425	1,400	1,370	1,454	1,418	1,505	1,442	1,386	1,429	1,363	1,417
Unpaid family workers .....	185	169	159	164	198	152	136	126	150	175	170	165	154	159	134
Nonagricultural industries:															
Wage and salary workers .....	95,871	98,299	98,692	98,846	98,869	99,164	99,550	99,748	99,834	100,112	100,834	100,420	100,838	101,334	101,221
Government .....	16,031	16,342	16,333	16,264	16,457	16,443	16,412	16,532	16,568	16,484	16,710	16,956	16,931	16,760	16,915
Private industries .....	79,841	81,957	82,359	82,582	82,412	82,721	83,138	83,216	83,265	83,628	84,124	83,464	83,907	84,574	84,306
Private households .....	1,249	1,235	1,229	1,216	1,183	1,189	1,269	1,204	1,227	1,266	1,266	1,146	1,224	1,172	1,088
Other .....	78,592	80,722	81,130	81,366	81,229	81,532	81,869	82,012	82,038	82,362	82,858	82,318	82,683	83,402	83,218
Self-employed workers .....	7,811	7,881	7,939	7,993	8,179	8,056	8,192	8,187	8,050	8,117	8,142	8,328	8,205	8,216	8,184
Unpaid family workers .....	289	255	275	265	252	239	246	255	273	268	275	274	268	250	300
<b>PERSONS AT WORK</b>															
<b>PART TIME<sup>1</sup></b>															
All industries:															
Part time for economic reasons ..	5,590	5,588	5,544	5,740	5,563	5,596	5,505	5,780	5,456	5,391	5,282	5,184	5,508	5,262	5,241
Slack work .....	2,430	2,456	2,472	2,481	2,510	2,444	2,473	2,535	2,440	2,322	2,223	2,317	2,456	2,515	2,212
Could only find part-time work ..	2,819	2,800	2,772	2,826	2,714	2,867	2,695	2,828	2,698	2,746	2,665	2,579	2,722	2,494	2,702
Voluntary part time .....	13,489	13,935	13,922	14,178	14,021	13,877	14,170	14,061	14,167	13,862	14,573	15,054	14,422	14,634	14,313
Nonagricultural industries:															
Part time for economic reasons ..	5,334	5,345	5,303	5,450	5,319	5,342	5,201	5,459	5,164	5,110	5,029	4,918	5,235	4,998	4,968
Slack work .....	2,273	2,305	2,314	2,314	2,366	2,286	2,281	2,340	2,218	2,137	2,071	2,155	2,295	2,306	2,038
Could only find part-time work ..	2,730	2,719	2,710	2,739	2,626	2,765	2,599	2,742	2,595	2,662	2,594	2,477	2,634	2,433	2,628
Voluntary part time .....	13,038	13,502	13,520	13,736	13,567	13,455	13,750	13,597	13,682	13,399	14,069	14,485	13,946	14,168	13,930

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

## 7. Selected unemployment indicators, monthly data seasonally adjusted

(Unemployment rates)

Selected categories	Annual average		1986				1987								
	1985	1986	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
<b>CHARACTERISTIC</b>															
Total, all civilian workers .....	7.2	7.0	7.0	6.9	6.9	6.7	6.7	6.7	6.6	6.3	6.3	6.1	6.0	6.0	5.9
Both sexes, 16 to 19 years .....	18.6	18.3	18.5	17.7	18.2	17.3	17.7	18.0	18.1	17.4	17.7	15.9	15.5	16.0	16.3
Men, 20 years and over .....	6.2	6.1	6.2	6.2	6.2	6.0	6.0	5.9	5.8	5.5	5.5	5.5	5.4	5.2	5.0
Women, 20 years and over .....	6.6	6.2	6.2	6.1	6.1	5.9	5.9	5.8	5.8	5.5	5.4	5.2	5.4	5.3	5.4
White, total .....	6.2	6.0	6.0	6.0	6.0	5.8	5.9	5.7	5.6	5.4	5.3	5.2	5.1	5.1	5.1
Both sexes, 16 to 19 years .....	15.7	15.6	15.9	15.4	16.0	15.1	15.0	15.2	15.5	14.9	15.2	13.6	13.0	14.0	14.5
Men, 16 to 19 years .....	16.5	16.3	16.6	15.7	16.3	15.5	16.1	16.0	17.1	16.7	17.3	14.5	13.0	15.4	15.3
Women, 16 to 19 years .....	14.8	14.9	15.1	15.2	15.7	14.6	13.8	14.3	13.9	13.1	13.1	12.7	13.0	12.5	13.6
Men, 20 years and over .....	5.4	5.3	5.4	5.4	5.4	5.3	5.3	5.2	5.1	4.8	4.7	4.9	4.7	4.5	4.4
Women, 20 years and over .....	5.7	5.4	5.3	5.2	5.2	5.0	5.1	4.9	4.8	4.6	4.5	4.4	4.5	4.4	4.5
Black, total .....	15.1	14.5	14.6	14.3	14.2	13.7	14.3	14.3	13.9	13.0	13.8	12.7	12.6	12.4	12.3
Both sexes, 16 to 19 years .....	40.2	39.3	38.4	35.8	36.0	36.5	39.5	38.9	37.6	38.0	39.0	33.3	31.5	29.2	29.7
Men, 16 to 19 years .....	41.0	39.3	38.6	37.8	35.0	36.1	36.5	38.3	36.5	39.3	40.3	31.5	31.5	32.6	30.9
Women, 16 to 19 years .....	39.2	39.2	38.3	33.8	37.0	36.9	43.2	39.5	38.8	36.5	37.6	35.1	31.4	25.3	28.7
Men, 20 years and over .....	13.2	12.9	13.4	13.1	12.9	11.8	12.2	12.0	11.5	10.9	12.5	11.5	11.3	10.7	10.0
Women, 20 years and over .....	13.1	12.4	12.4	12.4	12.5	12.3	12.8	12.9	13.0	11.5	11.6	11.1	11.4	11.3	11.9
Hispanic origin, total .....	10.5	10.6	10.9	10.4	9.6	10.5	10.6	9.6	9.0	9.2	8.7	8.5	7.9	8.0	8.2
Married men, spouse present .....	4.3	4.4	4.3	4.6	4.5	4.3	4.2	4.2	4.1	4.1	3.9	4.0	3.8	3.7	3.6
Married women, spouse present .....	5.6	5.2	5.1	5.0	5.0	4.8	4.8	4.8	4.5	4.4	4.1	4.0	4.2	4.3	4.2
Women who maintain families .....	10.4	9.8	9.8	8.9	9.7	9.8	9.8	9.5	9.7	9.3	9.6	9.7	9.4	9.0	8.8
Full-time workers .....	6.8	6.6	6.6	6.6	6.6	6.3	6.4	6.3	6.2	5.9	5.9	5.9	5.7	5.6	5.4
Part-time workers .....	9.3	9.1	9.3	9.2	9.1	8.8	9.0	8.7	9.2	8.6	8.7	6.9	7.9	8.2	8.5
Unemployed 15 weeks and over .....	2.0	1.9	2.0	1.8	1.9	1.8	1.8	1.8	1.7	1.7	1.8	1.7	1.6	1.6	1.6
Labor force time lost <sup>1</sup> .....	8.1	7.9	7.9	7.8	7.7	7.6	7.6	7.6	7.4	7.3	7.2	7.1	6.9	6.8	6.7
<b>INDUSTRY</b>															
Nonagricultural private wage and salary workers ....	7.2	7.0	7.0	7.0	7.0	6.8	6.7	6.6	6.5	6.2	6.3	6.2	6.1	5.9	5.9
Mining .....	9.5	13.5	13.9	14.5	14.5	14.1	14.0	12.4	9.3	11.1	12.9	10.8	7.8	8.9	7.0
Construction .....	13.1	13.1	12.9	13.8	15.1	13.7	12.2	11.6	12.5	11.9	12.1	11.6	10.7	11.2	12.1
Manufacturing .....	7.7	7.1	7.0	7.3	7.1	6.9	6.8	6.8	6.9	6.2	6.4	5.6	6.0	5.5	5.7
Durable goods .....	7.6	6.9	6.5	7.2	6.6	6.4	6.8	6.8	6.7	6.2	6.3	5.3	6.1	5.5	5.6
Nondurable goods .....	7.8	7.4	7.7	7.3	7.9	7.7	6.8	6.9	7.3	6.2	6.6	6.0	5.9	5.5	5.9
Transportation and public utilities .....	5.1	5.1	4.7	5.2	4.4	4.6	4.8	4.0	4.6	4.8	4.4	5.0	4.4	4.3	4.0
Wholesale and retail trade .....	7.6	7.6	7.6	7.4	7.2	7.2	7.5	7.2	7.3	7.0	6.9	7.2	6.8	7.0	6.4
Finance and service industries .....	5.6	5.5	5.6	5.4	5.4	5.1	5.2	5.4	4.9	4.7	4.8	4.8	5.1	4.6	4.9
Government workers .....	3.9	3.6	3.5	3.7	3.6	3.3	3.6	3.7	3.4	3.6	3.3	3.4	3.4	3.9	3.4
Agricultural wage and salary workers .....	13.2	12.5	12.9	11.9	10.1	11.5	11.6	11.2	10.7	9.0	8.7	8.8	11.3	10.8	8.3

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



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

(Civilian workers)

Sex and age	Annual average		1986				1987								
	1985	1986	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Total, 16 years and over .....	7.2	7.0	7.0	6.9	6.9	6.7	6.7	6.7	6.6	6.3	6.3	6.1	6.0	6.0	5.9
16 to 24 years .....	13.6	13.3	13.6	13.0	12.9	12.9	13.1	13.1	12.9	12.6	12.6	12.2	11.7	11.6	11.7
16 to 19 years .....	18.6	18.3	18.5	17.7	18.2	17.3	17.7	18.0	18.1	17.4	17.7	15.9	15.5	16.0	16.3
16 to 17 years .....	21.0	20.2	20.0	19.3	20.6	18.8	20.1	20.3	20.0	19.2	21.4	18.8	17.1	18.0	17.4
18 to 19 years .....	17.0	17.0	17.2	16.5	16.7	16.3	16.2	16.6	16.5	16.3	15.0	13.7	13.9	14.7	15.4
20 to 24 years .....	11.1	10.7	11.1	10.5	10.2	10.7	10.7	10.5	10.2	10.1	9.8	10.2	9.8	9.1	9.3
25 years and over .....	5.6	5.4	5.4	5.5	5.5	5.2	5.2	5.1	5.1	4.8	4.8	4.6	4.7	4.7	4.6
25 to 54 years .....	5.8	5.7	5.6	5.7	5.8	5.5	5.6	5.5	5.4	5.0	5.0	4.9	5.0	5.0	4.7
55 years and over .....	4.1	3.9	4.0	4.1	3.8	3.5	3.2	3.0	3.4	3.4	3.7	3.2	3.1	3.2	3.4
Men, 16 years and over .....	7.0	6.9	7.0	7.0	6.9	6.7	6.8	6.7	6.6	6.3	6.4	6.2	6.0	6.0	5.7
16 to 24 years .....	14.1	13.7	14.3	13.2	13.4	13.4	13.4	13.6	13.2	13.2	13.4	12.6	11.9	12.4	11.9
16 to 19 years .....	19.5	19.0	19.1	18.2	18.3	17.8	18.5	18.6	19.3	19.2	20.0	16.4	15.5	18.0	17.3
16 to 17 years .....	21.9	20.8	21.0	19.8	21.3	19.1	21.4	21.2	20.2	21.5	23.2	18.7	16.6	20.6	18.3
18 to 19 years .....	17.9	17.7	17.5	17.0	16.2	17.0	16.9	17.0	18.6	17.5	17.7	14.4	13.8	16.3	16.0
20 to 24 years .....	11.4	11.0	11.9	10.7	10.9	11.3	10.7	11.1	10.1	10.1	10.0	10.7	10.0	9.3	9.1
25 years and over .....	5.3	5.4	5.4	5.5	5.5	5.2	5.4	5.1	5.1	4.8	4.9	4.7	4.7	4.7	4.4
25 to 54 years .....	5.6	5.6	5.5	5.7	5.7	5.5	5.7	5.4	5.4	5.0	5.1	5.0	4.9	4.9	4.6
55 years and over .....	4.1	4.1	4.2	4.4	4.1	4.0	3.5	3.3	3.6	3.7	4.1	3.4	3.4	3.4	3.2
Women, 16 years and over .....	7.4	7.1	7.0	6.9	6.9	6.7	6.7	6.7	6.6	6.2	6.1	5.9	6.1	6.0	6.1
16 to 24 years .....	13.0	12.8	12.8	12.7	12.4	12.4	12.7	12.4	12.5	12.0	11.7	11.7	11.6	10.7	11.6
16 to 19 years .....	17.6	17.6	17.7	17.2	18.2	16.8	16.8	17.4	16.7	15.6	15.4	15.4	15.4	13.9	15.4
16 to 17 years .....	20.0	19.6	18.8	18.6	19.8	18.4	18.7	19.2	19.7	16.7	19.6	18.9	17.7	15.3	16.5
18 to 19 years .....	16.0	16.3	16.9	16.0	17.2	15.7	15.3	16.1	14.2	15.1	12.4	13.0	14.0	12.9	14.6
20 to 24 years .....	10.7	10.3	10.2	10.3	9.4	10.0	10.6	9.8	10.3	10.1	9.7	9.7	9.5	8.9	9.5
25 years and over .....	5.9	5.5	5.5	5.4	5.5	5.2	5.1	5.1	5.0	4.7	4.7	4.4	4.7	4.7	4.7
25 to 54 years .....	6.2	5.9	5.8	5.7	5.8	5.5	5.5	5.6	5.4	5.0	4.9	4.7	5.0	5.0	4.9
55 years and over .....	4.1	3.6	3.6	3.6	3.4	2.9	2.7	2.6	3.2	3.0	3.0	2.8	2.6	2.9	3.7

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

(Numbers in thousands)

Reason for unemployment	Annual average		1986				1987								
	1985	1986	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Job losers .....	4,139	4,033	4,044	3,984	3,947	3,890	3,971	3,839	3,822	3,732	3,611	3,565	3,522	3,339	3,321
On layoff .....	1,157	1,090	1,029	1,072	1,073	1,078	1,118	998	1,011	958	906	901	918	850	810
Other job losers .....	2,982	2,943	3,015	2,912	2,874	2,812	2,854	2,842	2,811	2,774	2,705	2,664	2,604	2,489	2,511
Job leavers .....	877	1,015	1,041	1,027	1,056	1,036	891	1,046	1,000	923	906	949	1,007	1,006	995
Reentrants .....	2,256	2,160	2,145	2,190	2,119	2,019	2,054	2,042	2,111	1,940	2,018	1,969	1,913	1,997	1,885
New entrants .....	1,039	1,029	1,038	972	1,076	1,015	1,084	1,040	956	911	1,018	798	801	829	883
<b>PERCENT OF UNEMPLOYED</b>															
Job losers .....	49.8	48.9	48.9	48.7	48.1	48.9	49.6	48.2	48.4	49.7	47.8	49.0	48.6	46.6	46.9
On layoff .....	13.9	13.2	12.4	13.1	13.1	13.5	14.0	12.5	12.8	12.8	12.0	12.4	12.7	11.9	11.4
Other job losers .....	35.9	35.7	36.5	35.6	35.1	35.3	35.7	35.7	35.6	37.0	35.8	36.6	36.0	34.7	35.4
Job leavers .....	10.6	12.3	12.6	12.6	12.9	13.0	11.1	13.1	12.7	12.3	12.0	13.0	13.9	14.0	14.0
Reentrants .....	27.1	26.2	25.9	26.8	25.8	25.4	25.7	25.6	26.8	25.8	26.7	27.0	26.4	27.9	26.6
New entrants .....	12.5	12.5	12.6	11.9	13.1	12.8	13.6	13.1	12.1	12.1	13.5	11.0	11.1	11.6	12.5
<b>PERCENT OF CIVILIAN LABOR FORCE</b>															
Job losers .....	3.6	3.4	3.4	3.4	3.3	3.3	3.3	3.2	3.2	3.1	3.0	3.0	2.9	2.8	2.8
Job leavers .....	.8	.9	.9	.9	.9	.9	.7	.9	.8	.8	.8	.8	.8	.8	.8
Reentrants .....	2.0	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.8	1.6	1.7	1.6	1.6	1.7	1.6
New entrants .....	.9	.9	.9	.8	.9	.9	.9	.9	.8	.8	.8	.7	.7	.7	.7

10. Duration of unemployment, monthly data seasonally adjusted

(Numbers in thousands)

Weeks of unemployment	Annual average		1986				1987								
	1985	1986	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Less than 5 weeks .....	3,498	3,448	3,415	3,418	3,382	3,355	3,416	3,361	3,383	3,143	3,349	3,085	3,168	3,197	3,230
5 to 14 weeks .....	2,509	2,557	2,524	2,563	2,613	2,389	2,530	2,477	2,447	2,232	2,118	2,114	2,141	2,170	1,932
15 weeks and over .....	2,305	2,232	2,373	2,168	2,217	2,171	2,200	2,131	2,050	2,075	2,101	2,055	1,907	1,884	1,920
15 to 26 weeks .....	1,025	1,045	1,110	950	1,045	1,023	1,022	1,008	945	1,025	998	945	814	909	
27 weeks and over .....	1,280	1,187	1,263	1,218	1,172	1,148	1,178	1,123	1,105	1,049	1,098	1,057	962	1,070	1,011
Mean duration in weeks .....	15.6	15.0	15.5	15.2	14.8	15.0	15.0	14.6	14.9	14.9	14.9	14.8	14.0	14.3	14.2
Median duration in weeks .....	6.8	6.9	7.1	7.0	7.0	7.1	7.0	6.6	6.6	7.0	6.5	6.7	6.7	6.4	5.7

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

State	Aug. 1986	Aug. 1987	State	Aug. 1986	Aug. 1987
Alabama .....	9.9	7.2	Montana .....	6.8	5.8
Alaska .....	9.8	9.1	Nebraska .....	4.1	4.1
Arizona .....	7.3	6.0	Nevada .....	5.2	5.6
Arkansas .....	8.3	7.6	New Hampshire .....	2.5	2.1
California .....	6.7	5.4	New Jersey .....	4.5	3.9
Colorado .....	7.1	6.4	New Mexico .....	9.1	8.3
Connecticut .....	3.6	3.2	New York .....	5.9	4.3
Delaware .....	3.9	2.8	North Carolina .....	5.1	4.2
District of Columbia .....	7.6	6.1	North Dakota .....	5.2	3.8
Florida .....	5.9	5.7	Ohio .....	8.0	6.9
Georgia .....	5.9	5.0	Oklahoma .....	9.5	6.6
Hawaii .....	4.9	3.7	Oregon .....	7.7	5.4
Idaho .....	9.1	7.1	Pennsylvania .....	6.3	5.2
Illinois .....	7.9	6.8	Rhode Island .....	3.9	3.5
Indiana .....	6.2	5.8	South Carolina .....	6.1	4.9
Iowa .....	6.4	4.6	South Dakota .....	3.8	3.8
Kansas .....	5.2	4.2	Tennessee .....	7.7	6.6
Kentucky .....	8.6	7.4	Texas .....	9.1	8.3
Louisiana .....	13.8	10.3	Utah .....	5.7	6.1
Maine .....	4.4	3.0	Vermont .....	3.9	2.9
Maryland .....	4.2	3.9	Virginia .....	4.7	4.1
Massachusetts .....	3.7	2.8	Washington .....	7.7	6.3
Michigan .....	7.9	8.3	West Virginia .....	10.6	9.1
Minnesota .....	4.2	4.6	Wisconsin .....	6.1	4.8
Mississippi .....	12.4	9.8	Wyoming .....	7.6	6.5
Missouri .....	6.0	6.0			

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	Aug. 1986	July 1987	Aug. 1987 <sup>P</sup>	State	Aug. 1986	July 1987	Aug. 1987 <sup>P</sup>
Alabama .....	1,459.6	1,490.0	1,491.2	Nebraska .....	654.6	662.2	663.2
Alaska .....	236.4	226.1	224.1	Nevada .....	476.5	505.5	507.0
Arizona .....	1,329.7	1,341.3	1,342.6	New Hampshire .....	496.6	510.9	514.7
Arkansas .....	815.2	830.1	837.0	New Jersey .....	3,519.0	3,612.3	3,606.6
California .....	11,252.3	11,599.7	11,616.9	New Mexico .....	529.0	535.1	534.4
Colorado .....	1,394.0	1,388.9	1,390.2	New York .....	7,910.7	8,106.8	8,123.8
Connecticut .....	1,598.4	1,644.5	1,643.0	North Carolina .....	2,710.0	2,792.0	2,803.8
Delaware .....	308.6	316.3	319.1	North Dakota .....	249.2	251.9	251.1
District of Columbia .....	654.5	662.0	660.0	Ohio .....	4,488.4	4,576.6	4,596.8
Florida .....	4,535.0	4,737.3	4,733.5	Oklahoma .....	1,119.4	1,123.2	1,124.4
Georgia .....	2,689.4	2,747.1	2,752.6	Oregon .....	1,063.1	1,098.7	1,106.2
Hawaii .....	438.6	451.1	450.9	Pennsylvania .....	4,822.5	4,935.2	4,941.1
Idaho .....	333.3	336.7	337.7	Rhode Island .....	443.5	446.3	450.1
Illinois .....	4,803.6	4,873.0	4,883.6	South Carolina .....	1,342.6	1,377.2	1,386.4
Indiana .....	2,236.9	2,299.7	2,315.2	South Dakota .....	253.9	255.4	255.0
Iowa .....	1,074.5	1,097.9	1,096.6	Tennessee .....	1,937.8	1,999.3	2,001.9
Kansas .....	981.1	987.8	988.0	Texas .....	6,522.6	6,474.0	6,466.5
Kentucky .....	1,274.8	1,294.5	1,298.1	Utah .....	631.4	637.9	640.8
Louisiana .....	1,499.6	1,486.9	1,483.6	Vermont .....	235.3	239.0	238.7
Maine .....	493.6	500.7	508.5	Virginia .....	2,568.5	2,638.8	2,634.5
Maryland .....	1,965.1	1,994.5	1,990.1	Washington .....	1,782.4	1,836.8	1,847.1
Massachusetts .....	2,981.2	3,043.2	3,049.7	West Virginia .....	598.0	604.1	599.9
Michigan .....	3,628.9	3,640.0	3,665.2	Wisconsin .....	2,032.7	2,067.3	2,067.9
Minnesota .....	1,902.4	1,948.3	1,961.6	Wyoming .....	202.2	196.7	196.9
Mississippi .....	834.7	851.0	852.9	Puerto Rico .....	703.7	758.2	732.7
Missouri .....	2,141.2	2,143.3	2,149.6	Virgin Islands .....	37.8	38.7	38.1
Montana .....	277.4	273.6	275.1				

<sup>P</sup> = 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		1986				1987								
	1985	1986	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug. <sup>P</sup>	Sept. <sup>P</sup>
<b>TOTAL</b> .....	97,519	99,610	100,039	100,209	100,415	100,567	100,919	101,150	101,329	101,598	101,708	101,818	102,126	102,278	102,410
<b>PRIVATE SECTOR</b> .....	81,125	82,900	83,241	83,337	83,515	83,643	83,983	84,215	84,352	84,560	84,677	84,787	85,106	85,226	85,364
<b>GOODS-PRODUCING</b> .....	24,859	24,681	24,620	24,611	24,630	24,630	24,708	24,743	24,749	24,759	24,752	24,761	24,850	24,885	24,912
<b>Mining</b> .....	927	783	739	735	730	724	718	719	722	729	735	738	744	752	756
Oil and gas extraction .....	583	457	419	416	412	406	405	406	408	416	420	425	430	434	435
<b>Construction</b> .....	4,673	4,904	4,948	4,942	4,946	4,936	5,034	5,038	5,032	5,019	4,999	5,008	5,002	5,007	4,974
General building contractors .....	1,253	1,293	1,291	1,289	1,289	1,277	1,311	1,309	1,291	1,272	1,267	1,266	1,261	1,263	1,248
<b>Manufacturing</b> .....	19,260	18,994	18,933	18,934	18,954	18,970	18,956	18,986	18,995	19,011	19,018	19,015	19,104	19,126	19,182
Production workers .....	13,092	12,895	12,851	12,849	12,879	12,906	12,884	12,916	12,925	12,939	12,946	12,958	13,020	13,040	13,099
<b>Durable goods</b> .....	11,490	11,244	11,181	11,169	11,174	11,175	11,157	11,179	11,176	11,175	11,175	11,176	11,195	11,244	11,279
Production workers .....	7,644	7,432	7,382	7,369	7,385	7,393	7,370	7,398	7,399	7,406	7,409	7,421	7,425	7,478	7,512
Lumber and wood products .....	697	711	716	718	723	728	731	733	734	736	738	735	740	737	739
Furniture and fixtures .....	494	497	499	499	499	499	500	501	502	504	509	510	518	518	521
Stone, clay, and glass products .....	588	586	584	581	582	584	586	588	586	586	584	582	582	583	583
Primary metal industries .....	808	753	732	733	733	733	726	733	739	743	742	746	750	754	769
Blast furnaces and basic steel products .....	303	275	260	262	260	259	254	261	266	272	272	275	277	279	284
Fabricated metal products .....	1,465	1,431	1,424	1,421	1,419	1,422	1,422	1,419	1,419	1,423	1,420	1,424	1,424	1,425	1,429
Machinery, except electrical .....	2,174	2,060	2,031	2,022	2,015	2,011	2,007	2,018	2,015	2,022	2,025	2,028	2,033	2,043	2,054
Electrical and electronic equipment .....	2,197	2,123	2,118	2,120	2,119	2,118	2,111	2,106	2,099	2,092	2,087	2,080	2,088	2,093	2,098
Transportation equipment .....	1,980	2,015	2,015	2,013	2,023	2,018	2,014	2,022	2,022	2,011	2,011	2,010	1,995	2,027	2,017
Motor vehicles and equipment .....	884	865	857	850	858	853	851	859	854	847	843	842	814	847	837
Instruments and related products .....	720	707	703	702	700	698	697	695	694	694	693	693	695	694	698
Miscellaneous manufacturing industries .....	367	362	359	360	361	364	363	364	366	364	366	368	370	370	371
<b>Nondurable goods</b> .....	7,770	7,750	7,752	7,765	7,780	7,795	7,799	7,807	7,819	7,836	7,843	7,839	7,909	7,882	7,903
Production workers .....	5,449	5,463	5,469	5,480	5,494	5,513	5,514	5,518	5,526	5,533	5,537	5,537	5,595	5,562	5,587
Food and kindred products .....	1,603	1,617	1,619	1,621	1,627	1,631	1,628	1,630	1,635	1,642	1,633	1,634	1,644	1,633	1,631
Tobacco manufactures .....	64	59	58	58	59	58	58	58	57	56	57	57	57	56	54
Textile mill products .....	702	705	707	709	714	715	718	722	725	724	727	729	736	733	737
Apparel and other textile products .....	1,121	1,106	1,102	1,104	1,101	1,110	1,106	1,101	1,103	1,104	1,107	1,108	1,130	1,109	1,114
Paper and allied products .....	678	674	675	677	678	679	678	679	678	677	677	676	678	677	683
Printing and publishing .....	1,428	1,457	1,465	1,469	1,472	1,474	1,479	1,483	1,485	1,493	1,497	1,498	1,504	1,507	1,507
Chemicals and allied products .....	1,044	1,023	1,021	1,020	1,017	1,017	1,018	1,018	1,017	1,018	1,022	1,014	1,026	1,032	1,033
Petroleum and coal products .....	179	169	167	166	165	163	164	164	164	164	164	164	164	165	167
Rubber and misc. plastics products .....	786	790	791	794	797	800	803	805	807	809	809	810	815	818	824
Leather and leather products .....	165	151	147	147	147	148	147	147	148	149	150	149	155	152	153
<b>SERVICE-PRODUCING</b> .....	72,660	74,930	75,419	75,598	75,785	75,937	76,211	76,407	76,580	76,839	76,956	77,057	77,276	77,393	77,498
<b>Transportation and public utilities</b> .....	5,238	5,244	5,255	5,251	5,278	5,286	5,304	5,315	5,333	5,348	5,344	5,350	5,363	5,377	5,385
Transportation .....	3,003	3,041	3,050	3,053	3,071	3,078	3,089	3,097	3,112	3,124	3,120	3,128	3,133	3,146	3,154
Communication and public utilities .....	2,235	2,203	2,205	2,198	2,207	2,208	2,215	2,218	2,221	2,224	2,224	2,222	2,230	2,231	2,231
<b>Wholesale trade</b> .....	5,717	5,735	5,736	5,731	5,728	5,725	5,741	5,757	5,766	5,772	5,775	5,781	5,797	5,805	5,806
Durable goods .....	3,388	3,383	3,383	3,379	3,380	3,383	3,386	3,391	3,397	3,397	3,401	3,405	3,418	3,420	3,425
Nondurable goods .....	2,329	2,351	2,353	2,352	2,348	2,342	2,355	2,366	2,369	2,375	2,374	2,376	2,379	2,385	2,381
<b>Retail trade</b> .....	17,356	17,845	17,939	17,980	18,009	18,007	18,080	18,140	18,136	18,197	18,205	18,226	18,274	18,254	18,324
General merchandise stores .....	2,324	2,363	2,374	2,385	2,379	2,363	2,358	2,373	2,380	2,385	2,390	2,387	2,407	2,408	2,425
Food stores .....	2,775	2,873	2,892	2,901	2,906	2,916	2,929	2,940	2,944	2,953	2,956	2,960	2,959	2,964	2,971
Automotive dealers and service stations .....	1,890	1,943	1,958	1,960	1,963	1,970	1,978	1,979	1,979	1,978	1,978	1,983	1,985	1,984	1,987
Eating and drinking places .....	5,709	5,879	5,911	5,919	5,927	5,938	5,946	5,956	5,964	5,962	5,976	5,982	5,985	5,991	6,007
<b>Finance, insurance, and real estate</b> .....	5,955	6,297	6,374	6,395	6,418	6,451	6,480	6,501	6,526	6,558	6,576	6,586	6,608	6,628	6,626
Finance .....	2,977	3,152	3,193	3,204	3,212	3,227	3,235	3,243	3,256	3,272	3,276	3,280	3,291	3,296	3,295
Insurance .....	1,833	1,945	1,971	1,980	1,990	1,999	2,012	2,016	2,022	2,032	2,037	2,037	2,043	2,051	2,050
Real estate .....	1,146	1,200	1,210	1,211	1,216	1,225	1,233	1,242	1,248	1,254	1,263	1,269	1,274	1,281	1,281
<b>Services</b> .....	22,000	23,099	23,317	23,369	23,452	23,544	23,670	23,759	23,842	23,926	24,025	24,083	24,141	24,217	24,311
Business services .....	4,457	4,781	4,835	4,861	4,877	4,912	4,950	4,984	5,020	5,044	5,083	5,086	5,105	5,134	5,155
Health services .....	6,299	6,551	6,615	6,644	6,661	6,691	6,721	6,748	6,773	6,800	6,822	6,853	6,887	6,920	6,942
<b>Government</b> .....	16,394	16,711	16,798	16,872	16,900	16,924	16,936	16,935	16,977	17,038	17,031	17,031	17,020	17,052	17,046
Federal .....	2,875	2,899	2,902	2,897	2,900	2,904	2,912	2,916	2,922	2,933	2,935	2,935	2,936	2,940	2,960
State .....	3,832	3,888	3,890	3,907	3,915	3,927	3,929	3,927	3,930	3,943	3,947	3,932	3,952	3,970	3,975
Local .....	9,687	9,923	10,006	10,068	10,085	10,093	10,095	10,092	10,125	10,162	10,149	10,164	10,132	10,142	10,111

<sup>P</sup> = preliminary

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

19.13

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

Industry	Annual average		1986				1987								
	1985	1986	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug. <sup>P</sup>	Sept. <sup>P</sup>
<b>PRIVATE SECTOR</b> .....	34.9	34.8	34.7	34.7	34.8	34.6	34.7	34.9	34.8	34.7	34.9	34.8	34.8	34.9	34.6
<b>MANUFACTURING</b> .....	40.5	40.7	40.8	40.7	40.8	40.8	40.9	41.1	40.9	40.6	41.0	41.0	41.0	41.0	40.4
Overtime hours .....	3.3	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.5	3.8	3.7	3.8	3.8	3.6
<b>Durable goods</b> .....	41.2	41.3	41.4	41.3	41.4	41.4	41.6	41.7	41.5	41.2	41.6	41.5	41.6	41.6	40.8
Overtime hours .....	3.5	3.5	3.6	3.5	3.5	3.6	3.7	3.7	3.7	3.6	3.9	3.8	3.8	4.0	3.6
Lumber and wood products .....	39.9	40.3	40.3	40.4	40.8	40.6	40.8	41.3	40.9	40.6	41.0	40.6	40.6	40.4	39.3
Furniture and fixtures .....	39.4	39.8	40.0	39.9	39.8	39.9	40.2	40.2	40.0	39.1	39.9	40.0	40.0	40.1	39.3
Stone, clay, and glass products .....	41.9	42.2	42.4	42.3	41.9	42.2	42.5	42.8	42.5	41.9	42.3	42.0	42.2	42.1	41.8
Primary metal industries .....	41.5	41.9	42.1	42.3	42.4	42.5	42.6	42.6	42.6	42.3	43.1	43.1	43.4	43.7	43.0
Blast furnaces and basic steel products .....	41.1	41.7	41.9	42.4	42.5	42.6	42.7	42.3	42.3	42.4	43.3	43.5	44.1	44.3	44.1
Fabricated metal products .....	41.3	41.3	41.5	41.3	41.4	41.2	41.6	41.6	41.5	41.2	41.6	41.5	41.4	41.5	40.6
Machinery except electrical .....	41.5	41.6	41.7	41.7	41.7	41.7	42.0	42.2	42.0	41.8	42.2	42.2	42.4	42.2	41.5
Electrical and electronic equipment .....	40.6	41.0	41.2	41.0	41.0	41.0	41.0	41.1	40.9	40.6	40.8	41.1	41.1	41.0	40.3
Transportation equipment .....	42.6	42.3	42.4	42.1	42.2	42.1	42.3	42.5	42.3	41.9	42.2	41.9	41.7	41.8	41.2
Motor vehicles and equipment .....	43.5	42.6	42.7	42.1	42.4	42.4	42.9	43.0	42.9	42.1	42.5	42.0	41.9	41.8	41.3
Instruments and related products .....	41.0	41.0	40.7	40.9	41.1	41.1	41.2	41.3	41.3	41.0	41.5	41.5	41.6	41.8	40.8
<b>Nondurable goods</b> .....	39.6	39.9	39.9	39.9	40.0	40.0	40.1	40.3	40.1	39.7	40.2	40.2	40.3	40.3	39.9
Overtime hours .....	3.1	3.3	3.3	3.4	3.5	3.5	3.5	3.5	3.5	3.3	3.7	3.6	3.7	3.7	3.7
Food and kindred products .....	40.0	40.0	39.8	39.8	40.0	39.8	40.0	40.1	40.0	39.8	40.1	40.1	39.9	40.3	40.1
Textile mill products .....	39.7	41.1	41.4	41.4	41.4	41.6	41.6	42.0	42.1	41.4	42.0	42.1	42.4	42.1	40.9
Apparel and other textile products .....	36.4	36.7	36.8	36.8	36.9	37.0	37.0	37.4	37.0	36.1	37.2	37.1	37.3	37.4	36.0
Paper and allied products .....	43.1	43.2	42.9	43.1	43.2	43.2	43.4	43.3	43.0	43.0	43.5	43.3	43.5	43.4	43.9
Printing and publishing .....	37.8	38.0	38.0	38.0	38.0	38.0	37.9	38.1	37.9	37.7	37.9	38.1	38.1	37.9	38.1
Chemicals and allied products .....	41.9	41.9	41.8	42.0	42.3	42.1	42.2	42.2	42.0	42.2	42.1	42.0	42.2	42.4	42.8
Petroleum and coal products .....	43.0	43.8	43.5	43.7	43.8	43.6	44.6	44.0	44.1	43.9	44.3	43.3	44.4	43.1	43.0
<b>TRANSPORTATION AND PUBLIC UTILITIES</b> .....	39.5	39.2	39.1	39.1	39.2	38.9	39.0	39.2	39.0	39.0	39.2	38.8	39.2	39.2	39.2
<b>WHOLESALE TRADE</b> .....	37.8	37.7	38.2	38.3	38.3	38.2	38.3	38.3	38.1	38.2	38.3	38.2	38.1	38.3	38.0
<b>RETAIL TRADE</b> .....	29.4	29.2	29.1	29.1	29.2	28.9	29.0	29.3	29.3	29.5	29.4	29.2	29.3	29.5	29.6
<b>SERVICES</b> .....	32.5	32.5	32.4	32.4	32.5	32.4	32.4	32.6	32.5	32.4	32.5	32.5	32.5	32.6	32.5

<sup>P</sup> = preliminary

benchmark adjustment.

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

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

Industry	Annual average		1986				1987								
	1985	1986	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug. <sup>P</sup>	Sept. <sup>P</sup>
<b>PRIVATE SECTOR</b> .....	\$8.57	\$8.76	\$8.82	\$8.82	\$8.88	\$8.86	\$8.90	\$8.92	\$8.92	\$8.91	\$8.93	\$8.92	\$8.91	\$8.94	\$9.06
Seasonally adjusted .....	-	-	8.78	8.82	8.86	8.84	8.86	8.88	8.91	8.91	8.95	8.94	8.96	9.02	9.02
<b>MINING</b> .....	11.98	12.44	12.52	12.50	12.57	12.63	12.66	12.56	12.51	12.43	12.42	12.44	12.31	12.35	12.48
<b>CONSTRUCTION</b> .....	12.32	12.47	12.59	12.68	12.66	12.77	12.58	12.51	12.59	12.55	12.60	12.61	12.57	12.67	12.80
<b>MANUFACTURING</b> .....	9.54	9.73	9.73	9.72	9.78	9.85	9.84	9.84	9.85	9.87	9.87	9.87	9.87	9.86	10.02
<b>Durable goods</b> .....	10.10	10.29	10.29	10.27	10.33	10.40	10.38	10.39	10.39	10.39	10.40	10.42	10.40	10.41	10.53
Lumber and wood products .....	8.22	8.33	8.35	8.32	8.35	8.32	8.27	8.31	8.28	8.34	8.37	8.44	8.46	8.46	8.48
Furniture and fixtures .....	7.17	7.46	7.55	7.53	7.55	7.65	7.61	7.58	7.58	7.58	7.64	7.66	7.67	7.74	7.80
Stone, clay, and glass products .....	9.84	10.05	10.11	10.10	10.14	10.17	10.17	10.15	10.13	10.23	10.26	10.29	10.33	10.31	10.44
Primary metal industries .....	11.67	11.86	11.82	11.75	11.80	11.82	11.76	11.78	11.82	11.96	11.96	11.97	11.97	11.92	12.11
Blast furnaces and basic steel products .....	13.33	13.73	13.76	13.63	13.68	13.74	13.55	13.59	13.66	13.84	13.80	13.83	13.70	13.63	13.82
Fabricated metal products .....	9.70	9.89	9.88	9.88	9.94	10.02	9.98	9.99	9.99	9.98	9.97	10.00	9.95	9.95	10.03
Machinery, except electrical .....	10.29	10.59	10.61	10.58	10.62	10.67	10.64	10.68	10.72	10.70	10.70	10.76	10.74	10.77	10.84
Electrical and electronic equipment .....	9.46	9.65	9.70	9.67	9.73	9.82	9.84	9.84	9.84	9.82	9.83	9.84	9.89	9.90	9.96
Transportation equipment .....	12.71	12.81	12.82	12.82	12.88	12.96	12.93	12.88	12.86	12.80	12.85	12.88	12.83	12.90	13.12
Motor vehicles and equipment .....	13.39	13.45	13.42	13.42	13.44	13.56	13.58	13.49	13.49	13.40	13.42	13.47	13.36	13.42	13.74
Instruments and related products .....	9.17	9.47	9.54	9.56	9.63	9.65	9.64	9.67	9.67	9.67	9.69	9.70	9.74	9.79	9.84
Miscellaneous manufacturing .....	7.30	7.54	7.58	7.57	7.62	7.69	7.69	7.68	7.66	7.67	7.72	7.74	7.72	7.71	7.78
<b>Nondurable goods</b> .....	8.71	8.94	8.96	8.96	9.02	9.07	9.09	9.08	9.09	9.14	9.13	9.11	9.16	9.11	9.32
Food and kindred products .....	8.57	8.74	8.65	8.69	8.79	8.88	8.90	8.91	8.93	8.95	8.96	8.91	8.88	8.81	8.95
Tobacco manufactures .....	11.96	12.85	12.29	12.14	12.67	12.93	12.97	13.44	13.80	14.28	14.53	15.57	14.85	14.10	12.97
Textile mill products .....	6.70	6.93	7.02	7.02	7.05	7.10	7.10	7.11	7.12	7.12	7.13	7.15	7.14	7.17	7.24
Apparel and other textile products .....	5.73	5.84	5.91	5.87	5.87	5.90	5.94	5.93	5.93	5.94	5.89	5.91	5.89	5.90	6.04
Paper and allied products .....	10.83	11.18	11.23	11.25	11.27	11.34	11.26	11.26	11.27	11.37	11.40	11.41	11.48	11.41	11.71
Printing and publishing .....	9.71	9.99	10.12	10.09	10.11	10.15	10.14	10.16	10.17	10.14	10.19	10.19	10.25	10.31	10.49
Chemicals and allied products .....	11.56	11.98	12.03	12.08	12.17	12.20	12.18	12.21	12.24	12.30	12.31	12.27	12.37	12.32	12.57
Petroleum and coal products .....	14.06	14.18	14.18	14.19	14.32	14.41	14.57	14.51	14.50	14.50	14.52	14.43	14.48	14.51	14.84
Rubber and miscellaneous plastics products .....	8.54	8.73	8.72	8.73	8.77	8.82	8.83	8.79	8.80	8.82	8.84	8.87	8.93	8.90	9.07
Leather and leather products .....	5.83	5.92	5.95	5.95	5.98	5.98	6.04	6.01	6.06	6.12	6.05	6.04	5.98	6.01	6.21
<b>TRANSPORTATION AND PUBLIC UTILITIES</b> .....	11.40	11.70	11.77	11.77	11.90	11.90	11.89	11.93	11.90	11.94	11.95	11.91	12.00	12.01	12.10
<b>WHOLESALE TRADE</b> .....	9.16	9.35	9.37	9.36	9.47	9.47	9.49	9.55	9.53	9.53	9.57	9.57	9.57	9.61	9.64
<b>RETAIL TRADE</b> .....	5.94	6.03	6.06	6.06	6.08	6.07	6.09	6.09	6.08	6.09	6.09	6.08	6.07	6.06	6.20
<b>FINANCE, INSURANCE, AND REAL ESTATE</b> .....	7.94	8.35	8.39	8.39	8.57	8.48	8.60	8.75	8.72	8.71	8.72	8.68	8.69	8.79	8.80
<b>SERVICES</b> .....	7.90	8.16	8.19	8.23	8.33	8.32	8.37	8.43	8.41	8.40	8.38	8.35	8.33	8.39	8.51

- Data not available.  
P = preliminary

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



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

Industry	Annual average		1986				1987								
	1985	1986	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug. <sup>P</sup>	Sept. <sup>P</sup>
<b>PRIVATE SECTOR</b>															
Current dollars .....	\$299.09	\$304.85	\$306.94	\$306.05	\$308.14	\$308.33	\$306.16	\$307.74	\$308.63	\$308.29	\$310.76	\$312.20	\$312.74	\$315.58	\$314.38
Seasonally adjusted .....	-	-	304.67	306.05	308.33	305.86	307.44	309.91	310.07	309.18	312.36	311.11	311.81	314.80	312.09
Constant (1977) dollars .....	170.42	171.07	171.47	170.88	171.86	171.87	169.52	169.74	169.48	168.28	169.17	169.21	169.14	169.76	-
<b>MINING</b> .....	519.93	524.97	527.09	526.25	520.40	535.51	538.05	527.52	522.92	519.57	526.61	527.46	518.25	526.11	520.42
<b>CONSTRUCTION</b> .....	464.46	466.38	484.72	480.57	462.09	469.94	467.98	460.37	470.87	469.37	485.10	480.44	485.20	489.06	464.64
<b>MANUFACTURING</b>															
Current dollars .....	386.37	396.01	398.93	395.60	400.98	408.78	401.47	401.47	402.87	398.75	403.68	405.66	400.72	403.27	406.81
Constant (1977) dollars .....	220.15	222.23	222.87	220.88	223.64	227.86	222.30	221.44	221.24	217.78	219.75	219.87	216.72	216.93	-
<b>Durable goods</b> .....	416.12	424.98	428.06	424.15	429.73	439.92	430.77	431.19	432.22	427.03	431.60	434.51	426.40	429.93	431.73
Lumber and wood products .....	327.98	335.70	340.68	337.79	337.34	337.79	331.63	337.39	337.00	338.60	345.68	348.57	341.78	344.32	337.50
Furniture and fixtures .....	282.50	296.91	305.78	304.97	303.51	314.42	302.88	299.41	301.68	294.10	301.78	306.40	300.66	311.92	310.44
Stone, clay, and glass products .....	412.30	424.11	434.73	430.26	423.85	427.14	421.04	423.26	425.46	430.68	439.13	437.33	439.03	439.21	442.66
Primary metal industries .....	484.31	496.93	497.62	493.50	500.32	508.26	500.98	503.01	505.90	508.30	514.28	517.10	514.71	514.94	520.73
Blast furnaces and basic steel products .....	547.86	572.54	575.17	569.73	580.03	589.45	575.88	577.58	581.92	593.74	598.92	605.75	602.80	596.99	608.08
Fabricated metal products .....	400.61	408.46	411.01	408.04	413.50	422.84	414.17	413.59	414.59	408.18	412.76	417.00	405.96	410.94	408.22
Machinery, except electrical .....	427.04	440.54	442.44	439.07	444.98	456.68	446.88	449.63	452.38	445.12	449.40	455.15	447.86	450.19	449.86
Electrical and electronic equipment .....	384.08	395.65	400.61	396.47	402.82	413.42	404.42	402.46	402.46	395.75	399.10	404.42	399.56	403.92	402.38
Transportation equipment .....	541.45	541.86	542.29	537.16	546.11	562.46	549.53	546.11	547.84	536.32	542.27	539.67	526.03	528.90	539.23
Motor vehicles and equipment .....	582.47	572.97	570.35	562.30	568.51	595.28	585.30	577.37	582.77	566.82	571.69	567.09	549.10	546.19	564.71
Instruments and related products .....	375.97	388.27	389.23	389.09	398.68	407.23	397.17	399.37	401.31	394.54	399.23	402.55	398.37	405.31	401.47
Miscellaneous manufacturing .....	287.62	298.58	299.41	301.29	305.56	309.14	303.76	301.06	301.04	297.60	302.62	304.18	299.54	303.77	305.75
<b>Nondurable goods</b> .....	344.92	356.71	359.30	358.40	363.51	368.24	362.69	362.29	363.60	361.03	366.11	367.13	366.40	368.04	373.73
Food and kindred products .....	342.80	349.60	349.46	347.60	353.36	357.86	354.22	351.05	352.74	351.74	359.30	357.29	354.31	358.57	364.27
Tobacco manufactures .....	444.91	480.59	470.71	473.46	481.46	483.58	481.19	486.53	525.78	536.93	571.03	624.36	527.18	513.24	457.84
Textile mill products .....	265.99	284.82	293.44	292.03	294.69	299.62	293.94	295.78	299.04	291.21	298.75	303.16	297.02	303.29	299.01
Apparel and other textile products .....	208.57	214.33	217.49	216.60	218.36	220.66	218.59	220.00	219.41	212.65	219.11	221.03	217.93	220.66	217.44
Paper and allied products .....	466.77	482.98	485.14	484.88	489.12	500.09	488.68	484.18	483.48	486.64	493.62	494.05	495.94	492.91	517.58
Printing and publishing .....	367.04	379.62	387.60	384.43	387.21	392.81	381.26	384.05	386.46	381.26	384.16	384.16	387.45	392.81	402.82
Chemicals and allied products .....	484.36	501.96	502.85	504.94	516.01	519.72	514.00	514.04	515.30	519.06	518.25	516.57	518.30	518.67	538.00
Petroleum and coal products .....	604.58	621.08	625.34	622.94	630.08	628.28	645.45	629.73	636.55	635.10	637.43	624.82	645.81	628.28	647.02
Rubber and miscellaneous plastics products .....	350.99	360.55	362.75	362.30	365.71	373.09	367.33	364.79	365.20	360.74	366.86	370.77	366.13	369.35	372.78
Leather and leather products .....	216.88	218.45	218.37	218.96	221.86	227.84	225.29	223.57	227.25	224.60	233.53	237.37	230.83	233.19	223.56
<b>TRANSPORTATION AND PUBLIC UTILITIES</b> .....	450.30	458.64	461.38	460.21	467.67	465.29	457.77	465.27	462.91	463.27	466.05	465.68	472.80	474.40	475.53
<b>WHOLESALE TRADE</b> .....	351.74	359.04	358.87	359.42	363.65	363.65	361.57	361.95	361.19	363.09	366.53	367.49	366.53	369.02	367.28
<b>RETAIL TRADE</b> .....	174.64	176.08	176.35	175.74	176.32	178.46	172.35	174.78	175.71	177.83	178.44	179.97	182.10	183.01	183.52
<b>FINANCE, INSURANCE, AND REAL ESTATE</b> .....	289.02	303.94	303.72	305.40	312.81	309.52	312.18	318.50	316.54	316.17	316.54	315.95	314.58	320.84	316.80
<b>SERVICES</b> .....	256.75	265.20	265.36	266.65	269.89	269.57	269.51	273.13	272.48	271.32	271.51	272.21	273.22	276.87	275.72

- Data not available.  
P = preliminary

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

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

Industry	Not seasonally adjusted				Seasonally adjusted					
	Sept. 1986	July 1987	Aug. 1987 <sup>P</sup>	Sept. 1987 <sup>P</sup>	Sept. 1986	May 1987	June 1987	July 1987	Aug. 1987 <sup>P</sup>	Sept. 1987 <sup>P</sup>
<b>PRIVATE SECTOR (in current dollars)</b> .....	170.1	172.7	173.2	175.0	169.8	172.9	172.9	173.2	174.1	174.7
Mining <sup>1</sup> .....	181.8	181.8	182.0	183.7	-	-	-	-	-	-
Construction .....	153.8	153.5	154.7	156.2	151.9	154.1	155.0	154.3	154.7	154.4
Manufacturing .....	172.3	174.9	174.5	176.5	172.7	174.4	174.7	174.7	175.3	176.9
Transportation and public utilities .....	172.2	175.4	175.8	177.5	171.7	176.2	175.6	176.4	176.7	176.8
Wholesale trade <sup>1</sup> .....	172.9	176.6	177.3	177.9	-	-	-	-	-	-
Retail trade .....	159.5	160.3	160.4	163.0	159.0	160.2	160.3	160.9	161.5	162.5
Finance, insurance, and real estate <sup>1</sup> .....	180.4	186.8	189.1	189.0	-	-	-	-	-	-
Services .....	175.4	179.1	180.3	182.4	174.7	179.9	179.9	180.5	182.3	181.7
<b>PRIVATE SECTOR [in constant (1977) dollars]</b> .....	95.0	93.4	93.2	-	95.0	94.0	93.8	93.7	93.7	-

<sup>1</sup> This series is not seasonally adjusted because the seasonal component is small relative to the trend-cycle, irregular components, or both, and consequently cannot be separated with sufficient precision.  
- Data not available.

<sup>P</sup> = preliminary.  
NOTE: See "Notes on the data" for a description of the most recent benchmark revision.

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

(In percent)

Time span and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<b>Over 1-month span:</b>												
1985 .....	55.9	47.0	52.4	47.3	53.2	46.8	53.8	53.8	47.8	53.2	54.3	57.3
1986 .....	53.2	48.1	48.1	53.5	52.4	46.8	52.4	56.2	55.1	53.2	59.7	59.7
1987 .....	53.5	56.8	58.6	58.4	58.6	55.7	68.6	53.0	64.9	-	-	-
<b>Over 3-month span:</b>												
1985 .....	51.1	48.4	42.4	46.5	44.3	49.7	47.0	48.6	45.9	47.6	55.1	56.5
1986 .....	49.7	44.9	45.7	48.4	47.6	45.4	48.4	55.1	55.9	58.1	58.6	60.3
1987 .....	58.6	59.5	61.1	61.6	61.4	67.3	64.9	72.4	-	-	-	-
<b>Over 6-month span:</b>												
1985 .....	46.5	46.5	43.2	44.3	44.3	45.1	43.0	44.3	49.2	49.2	47.3	45.9
1986 .....	47.6	47.6	43.0	43.2	45.4	48.4	47.3	53.0	59.2	58.9	57.8	58.9
1987 .....	61.9	62.7	58.9	67.3	66.5	71.9	-	-	-	-	-	-
<b>Over 12-month span:</b>												
1985 .....	44.6	44.1	43.8	40.8	41.6	41.6	42.2	42.4	43.8	44.3	44.1	42.4
1986 .....	43.2	44.1	46.2	45.7	47.8	49.5	49.5	51.6	54.9	52.2	55.1	56.5
1987 .....	62.2	65.1	67.3	-	-	-	-	-	-	-	-	-

- Data not available.

NOTE: Figures are the percent of industries with employment rising. (Half of the unchanged components are counted as rising.) Data are centered within the

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

## 19. Annual data: Employment status of the noninstitutional population

(Numbers in thousands)

Employment status	1978	1979	1980	1981	1982	1983	1984	1985	1986
Noninstitutional population .....	163,541	166,460	169,349	171,775	173,939	175,891	178,080	179,912	182,293
Labor force:									
Total (number) .....	103,882	106,559	108,544	110,315	111,872	113,226	115,241	117,167	119,540
Percent of population .....	63.5	64.0	64.1	64.2	64.3	64.4	64.7	65.1	65.6
Employed:									
Total (number) .....	97,679	100,421	100,907	102,042	101,194	102,510	106,702	108,856	111,303
Percent of population .....	59.7	60.3	59.6	59.4	58.2	58.3	59.9	60.5	61.1
Resident Armed Forces .....	1,631	1,597	1,604	1,645	1,668	1,676	1,697	1,706	1,706
Civilian									
Total .....	96,048	98,824	99,303	100,397	99,526	100,834	105,005	107,150	109,597
Agriculture .....	3,387	3,347	3,364	3,368	3,401	3,383	3,321	3,179	3,163
Nonagricultural industries .....	92,661	95,477	95,938	97,030	96,125	97,450	101,685	103,971	106,434
Unemployed:									
Total (number) .....	6,202	6,137	7,637	8,273	10,678	10,717	8,539	8,312	8,237
Percent of labor force .....	6.0	5.8	7.0	7.5	9.5	9.5	7.4	7.1	6.9
Not in labor force (number) .....	59,659	59,900	60,806	61,460	62,067	62,665	62,839	62,744	62,752

## 20. Annual data: Employment levels by industry

(Numbers in thousands)

Industry	1978	1979	1980	1981	1982	1983	1984	1985	1986
Total employment .....	86,697	89,823	90,406	91,156	89,566	90,200	94,496	97,519	99,610
Private sector .....	71,026	73,876	74,166	75,126	73,729	74,330	78,472	81,125	82,900
Goods-producing .....	25,585	26,461	25,658	25,497	23,813	23,334	24,727	24,859	24,681
Mining .....	851	958	1,027	1,139	1,128	952	966	927	783
Construction .....	4,229	4,463	4,346	4,188	3,905	3,948	4,383	4,673	4,904
Manufacturing .....	20,505	21,040	20,285	20,170	18,781	18,434	19,378	19,260	18,994
Service-producing .....	61,113	63,363	64,748	65,659	65,753	66,866	69,769	72,660	74,930
Transportation and public utilities .....	4,923	5,136	5,146	5,165	5,082	4,954	5,159	5,238	5,244
Wholesale trade .....	4,969	5,204	5,275	5,358	5,278	5,268	5,555	5,717	5,735
Retail trade .....	14,573	14,989	15,035	15,189	15,179	15,613	16,545	17,356	17,845
Finance, insurance, and real estate .....	4,724	4,975	5,160	5,298	5,341	5,468	5,689	5,955	6,297
Services .....	16,252	17,112	17,890	18,619	19,036	19,694	20,797	22,000	23,099
Government .....	15,672	15,947	16,241	16,031	15,837	15,869	16,024	16,394	16,711
Federal .....	2,753	2,773	2,866	2,772	2,739	2,774	2,807	2,875	2,899
State .....	3,474	3,541	3,610	3,640	3,640	3,662	3,734	3,832	3,888
Local .....	9,446	9,633	9,765	9,619	9,458	9,434	9,482	9,687	9,923

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	1978	1979	1980	1981	1982	1983	1984	1985	1986
<b>Private sector</b>									
Average weekly hours .....	35.8	35.7	35.3	35.2	34.8	35.0	35.2	34.9	34.8
Average hourly earnings (in dollars) .....	5.69	6.16	6.66	7.25	7.68	8.02	8.32	8.57	8.76
Average weekly earnings (in dollars) .....	203.70	219.91	235.10	255.20	267.26	280.70	292.86	299.09	304.85
<b>Mining</b>									
Average weekly hours .....	43.4	43.0	43.3	43.7	42.7	42.5	43.3	43.4	42.2
Average hourly earnings (in dollars) .....	7.67	8.49	9.17	10.04	10.77	11.28	11.63	11.98	12.44
Average weekly earnings (in dollars) .....	332.88	365.07	397.06	438.75	459.88	479.40	503.58	519.93	524.97
<b>Construction</b>									
Average weekly hours .....	36.8	37.0	37.0	36.9	36.7	37.1	37.8	37.7	37.4
Average hourly earnings (in dollars) .....	8.66	9.27	9.94	10.82	11.63	11.94	12.13	12.32	12.47
Average weekly earnings (in dollars) .....	318.69	342.99	367.78	399.26	426.82	442.97	458.51	464.46	466.38
<b>Manufacturing</b>									
Average weekly hours .....	40.4	40.2	39.7	39.8	38.9	40.1	40.7	40.5	40.7
Average hourly earnings (in dollars) .....	6.17	6.70	7.27	7.99	8.49	8.83	9.19	9.54	9.73
Average weekly earnings (in dollars) .....	249.27	269.34	288.62	318.00	330.26	354.08	374.03	386.37	396.01
<b>Transportation and public utilities</b>									
Average weekly hours .....	40.0	39.9	39.6	39.4	39.0	39.0	39.4	39.5	39.2
Average hourly earnings (in dollars) .....	7.57	8.16	8.87	9.70	10.32	10.79	11.12	11.40	11.70
Average weekly earnings (in dollars) .....	302.80	325.58	351.25	382.18	402.48	420.81	438.13	450.30	458.64
<b>Wholesale trade</b>									
Average weekly hours .....	38.8	38.8	38.5	38.5	38.3	38.5	38.5	38.4	38.4
Average hourly earnings (in dollars) .....	5.88	6.39	6.96	7.56	8.09	8.55	8.89	9.16	9.35
Average weekly earnings (in dollars) .....	228.14	247.93	267.96	291.06	309.85	329.18	342.27	351.74	359.04
<b>Retail trade</b>									
Average weekly hours .....	31.0	30.6	30.2	30.1	29.9	29.8	29.8	29.4	29.2
Average hourly earnings (in dollars) .....	4.20	4.53	4.88	5.25	5.48	5.74	5.85	5.94	6.03
Average weekly earnings (in dollars) .....	130.20	138.62	147.38	158.03	163.85	171.05	174.33	174.64	176.08
<b>Finance, insurance, and real estate</b>									
Average weekly hours .....	36.4	36.2	36.2	36.3	36.2	36.2	36.5	36.4	36.4
Average hourly earnings (in dollars) .....	4.89	5.27	5.79	6.31	6.78	7.29	7.63	7.94	8.35
Average weekly earnings (in dollars) .....	178.00	190.77	209.60	229.05	245.44	263.90	278.50	289.02	303.94
<b>Services</b>									
Average weekly hours .....	32.8	32.7	32.6	32.6	32.6	32.7	32.6	32.5	32.5
Average hourly earnings (in dollars) .....	4.99	5.36	5.85	6.41	6.92	7.31	7.59	7.90	8.16
Average weekly earnings (in dollars) .....	163.67	175.27	190.71	208.97	225.59	239.04	247.43	256.75	265.20

## 22. Employment Cost Index, compensation,<sup>1</sup> by occupation and industry group

(June 1981 = 100)

Series	1985			1986				1987		Percent change	
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	3 months ended	12 months ended
										June 1987	
<b>Civilian workers<sup>2</sup></b> .....	126.4	128.4	129.2	130.6	131.5	133.0	133.8	135.0	135.9	0.7	3.3
Workers, by occupational group:											
White-collar workers .....	128.3	130.7	131.6	133.1	134.2	136.0	136.9	138.5	139.3	.6	3.8
Blue-collar workers .....	123.1	124.4	124.9	126.2	126.8	127.8	128.4	129.1	130.1	.8	2.6
Service occupations .....	128.0	130.9	131.8	133.1	133.7	135.4	136.6	138.0	138.5	.4	3.6
Workers, by industry division:											
Goods-producing .....	123.9	124.9	125.5	126.9	128.1	128.8	129.5	130.2	131.1	.7	2.3
Manufacturing .....	124.6	125.5	126.0	127.7	128.7	129.3	130.1	130.7	131.5	.6	2.2
Service-producing .....	127.9	130.7	131.5	132.9	133.7	135.6	136.5	138.1	138.9	.6	3.9
Services .....	132.6	136.4	137.1	138.8	139.4	142.4	143.6	145.2	145.8	.4	4.6
Health services .....	-	-	-	-	-	-	-	-	-	.6	4.7
Hospitals .....	-	-	-	-	-	-	-	-	-	.8	4.5
Public administration <sup>3</sup> .....	130.3	134.2	134.8	136.8	138.0	140.6	141.6	144.1	144.7	.4	4.9
Nonmanufacturing .....	127.2	129.7	130.6	131.9	132.8	134.6	135.4	136.9	137.8	.7	3.8
<b>Private industry workers</b> .....	125.2	126.8	127.5	128.9	129.9	130.8	131.6	132.9	133.8	.7	3.0
Workers, by occupational group:											
White-collar workers .....	127.1	128.8	129.8	131.3	132.5	133.5	134.3	136.1	137.0	.7	3.4
Professional specialty and technical occupations .....	-	-	-	-	-	-	-	-	-	.6	3.5
Executive, administrative, and managerial occupations .....	-	-	-	-	-	-	-	-	-	.7	3.9
Sales occupations .....	-	-	-	-	-	-	-	-	-	.5	2.1
Administrative support occupations, including clerical .....	-	-	-	-	-	-	-	-	-	1.0	3.5
Blue-collar workers .....	122.8	124.0	124.4	125.7	126.3	127.2	127.8	128.4	129.5	.9	2.5
Precision production, craft, and repair occupation .....	-	-	-	-	-	-	-	-	-	.8	2.4
Machine operators, assemblers, and inspectors .....	-	-	-	-	-	-	-	-	-	1.0	2.7
Transportation and material moving occupations .....	-	-	-	-	-	-	-	-	-	1.1	3.0
Handlers, equipment cleaners, helpers, and laborers .....	-	-	-	-	-	-	-	-	-	.5	2.0
Service occupations .....	126.5	128.8	129.5	130.9	131.1	132.3	133.5	134.7	135.2	.4	3.1
Workers, by industry division:											
Goods-producing .....	123.8	124.6	125.3	126.7	127.8	128.6	129.2	129.9	130.8	.7	2.3
Construction .....	-	-	-	-	-	-	-	-	-	1.3	3.1
Manufacturing .....	124.6	125.5	126.0	127.7	128.7	129.3	130.1	130.7	131.5	.6	2.2
Durables .....	-	-	-	-	-	-	-	-	-	.7	2.0
Nondurables .....	-	-	-	-	-	-	-	-	-	.5	2.6
Service-producing .....	126.4	128.7	129.4	130.8	131.6	132.7	133.5	135.3	136.3	.7	3.6
Transportation and public utilities .....	-	-	-	-	-	-	-	-	-	1.1	2.8
Transportation .....	-	-	-	-	-	-	-	-	-	1.4	2.8
Public utilities .....	-	-	-	-	-	-	-	-	-	.9	2.9
Wholesale and retail trade .....	-	-	-	-	-	-	-	-	-	1.5	3.4
Wholesale trade .....	-	-	-	-	-	-	-	-	-	1.5	4.3
Retail trade .....	-	-	-	-	-	-	-	-	-	1.4	3.0
Finance, insurance, and real estate .....	-	-	-	-	-	-	-	-	-	-1.0	3.0
Service .....	-	-	-	-	-	-	-	-	-	.6	4.3
Health services .....	-	-	-	-	-	-	-	-	-	.7	5.0
Hospitals .....	-	-	-	-	-	-	-	-	-	.7	4.6
Nonmanufacturing .....	125.6	127.6	128.4	129.7	130.6	131.7	132.4	134.1	135.1	.7	3.4
<b>State and local government workers</b> .....	132.0	136.5	137.5	138.9	139.7	143.6	144.7	145.9	146.3	.3	4.7
Workers, by occupational group:											
White-collar workers .....	132.9	137.6	138.6	140.0	140.5	145.0	146.0	147.2	147.5	.2	5.0
Blue-collar workers .....	128.5	131.9	132.7	134.7	136.3	138.5	139.5	140.8	141.3	.4	3.7
Workers, by industry division:											
Services .....	133.2	137.9	139.1	140.4	140.8	145.5	146.6	147.3	147.6	.2	4.8
Hospitals and other services <sup>4</sup> .....	131.5	134.1	135.2	136.8	137.9	139.4	141.1	142.5	143.3	.6	3.9
Health services .....	-	-	-	-	-	-	-	-	-	.6	3.8
Schools .....	133.7	139.1	140.3	141.5	141.7	147.6	148.4	148.9	149.1	.1	5.2
Elementary and secondary .....	134.6	140.9	142.0	143.0	143.2	149.4	150.3	150.5	150.7	.1	5.2
Public administration <sup>3</sup> .....	130.3	134.2	134.8	136.8	138.0	140.6	141.6	144.1	144.7	.4	4.9

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

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

<sup>3</sup> Consist of legislative, judicial, administrative, and regulatory activities.

<sup>4</sup> 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	1985			1986			1987			Percent change	
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	3 months ended	12 months ended
											June 1987
<b>Civilian workers</b> <sup>1</sup> .....	124.2	126.3	127.0	128.3	129.3	130.7	131.5	132.8	133.5	0.5	3.2
Workers, by occupational group:											
White-collar workers .....	126.4	128.8	129.8	131.2	132.4	134.1	135.0	136.6	137.3	.5	3.7
Blue-collar workers .....	120.5	122.0	122.3	123.4	124.1	125.0	125.6	126.2	127.1	.7	2.4
Service occupations .....	125.3	128.0	128.6	129.8	130.0	131.7	132.8	134.2	134.7	.4	3.6
Workers, by industry division											
Goods-producing .....	121.5	122.5	123.1	124.4	125.6	126.3	127.0	127.8	128.5	.5	2.3
Manufacturing .....	122.3	123.2	123.8	125.3	126.5	127.2	127.9	128.7	129.5	.6	2.4
Service-producing .....	125.8	128.6	129.4	130.7	131.5	133.4	134.2	135.8	136.5	.5	3.8
Services .....	130.5	134.2	134.8	136.4	137.0	139.9	141.1	142.7	143.4	.5	4.7
Health services .....	-	-	-	-	-	-	-	-	-	.6	5.0
Hospitals .....	-	-	-	-	-	-	-	-	-	.7	4.7
Public administration <sup>2</sup> .....	127.2	131.4	132.0	133.8	134.6	137.5	138.1	140.5	141.0	.4	4.8
Nonmanufacturing .....	125.0	127.6	128.4	129.6	130.4	132.2	133.0	134.5	135.2	.5	3.7
<b>Private industry workers</b> .....	123.3	124.9	125.6	126.8	127.9	128.8	129.5	130.8	131.7	.7	3.0
Workers, by occupational group:											
White-collar workers .....	125.5	127.3	128.3	129.6	131.1	132.0	132.7	134.6	135.4	.6	3.3
Professional specialty and technical occupations .....	128.7	131.2	131.5	132.7	134.0	135.4	136.4	138.4	139.1	.5	3.8
Executive, administrative, and managerial occupations .....	126.5	127.7	128.4	130.5	132.1	132.4	133.5	135.6	136.4	.6	3.3
Sales occupations .....	117.4	119.3	122.5	122.4	124.3	125.2	124.9	126.7	127.1	.3	2.3
Administrative support occupations, including clerical .....	125.6	127.1	127.9	129.6	130.8	131.7	132.7	134.3	135.5	.9	3.6
Blue-collar workers .....	120.3	121.7	122.0	123.1	123.7	124.5	125.1	125.6	126.6	.8	2.3
Precision production, craft, and repair occupations .....	122.0	123.7	123.8	125.3	125.7	126.7	127.4	127.9	128.8	.7	2.5
Machine operators, assemblers, and inspectors .....	120.1	121.1	121.6	122.6	123.6	124.1	124.9	125.5	126.7	1.0	2.5
Transportation and material moving occupations .....	115.7	117.7	117.8	118.0	118.9	119.8	120.1	120.5	121.5	.8	2.2
Handlers, equipment cleaners, helpers, and laborers .....	118.5	118.6	119.8	120.0	120.3	120.9	121.4	121.9	122.6	.6	1.9
Service occupations .....	124.4	126.3	126.6	128.0	128.0	128.9	130.1	131.4	131.9	.4	3.0
Workers, by industry division:											
Goods-producing .....	121.4	122.3	122.9	124.2	125.4	126.1	126.8	127.5	128.3	.6	2.3
Construction .....	116.6	117.3	117.9	118.3	119.8	120.5	120.8	121.7	122.7	.8	2.4
Manufacturing .....	122.3	123.2	123.8	125.3	126.5	127.2	127.9	128.7	129.5	.6	2.4
Durables .....	122.0	122.7	123.4	124.8	125.8	126.4	127.2	127.7	128.7	.8	2.3
Nondurables .....	122.6	124.0	124.6	126.1	127.9	128.5	129.3	130.5	131.0	.4	2.4
Service-producing .....	124.8	127.0	127.8	129.0	129.9	130.9	131.6	133.4	134.3	.7	3.4
Transportation and public utilities .....	122.8	124.8	125.2	126.3	126.6	127.3	127.5	128.1	129.3	.9	2.1
Transportation .....	-	-	-	-	-	-	-	-	-	1.3	1.8
Public utilities .....	-	-	-	-	-	-	-	-	-	.7	2.6
Wholesale and retail trade .....	121.1	122.7	123.7	124.5	125.8	126.5	126.9	127.9	129.9	1.6	3.3
Wholesale trade .....	126.8	127.7	128.3	129.7	131.2	131.8	133.1	134.8	137.2	1.8	4.6
Retail trade .....	118.9	120.8	121.9	122.5	123.7	124.4	124.5	125.2	127.1	1.5	2.7
Finance, insurance, and real estate .....	121.7	124.1	126.5	126.6	128.0	129.0	130.0	133.5	131.5	-1.5	2.7
Services .....	131.0	133.9	134.1	136.2	136.9	138.2	139.5	141.8	142.8	.7	4.3
Health services .....	-	-	-	-	-	-	-	-	-	.7	5.1
Hospitals .....	-	-	-	-	-	-	-	-	-	.7	4.8
Nonmanufacturing .....	123.9	125.9	126.6	127.7	128.7	129.7	130.4	131.9	132.8	.7	3.2
<b>State and local government workers</b> .....	128.7	133.2	134.2	135.5	136.0	140.4	141.4	142.5	142.8	.2	5.0
Workers, by occupational group											
White-collar workers .....	129.6	134.3	135.3	136.6	137.0	141.8	142.8	143.9	144.1	.1	5.2
Blue-collar workers .....	124.5	127.9	128.4	130.4	131.9	134.5	135.1	136.3	136.9	.4	3.8
Workers, by industry division											
Services .....	129.7	134.5	135.6	136.8	137.1	142.1	143.3	143.9	144.2	.2	5.2
Hospitals and other services <sup>3</sup> .....	128.0	130.2	130.9	132.4	133.3	135.8	137.3	138.6	139.4	.6	4.6
Health services .....	-	-	-	-	-	-	-	-	-	.6	4.1
Schools .....	130.2	135.8	137.0	138.0	138.2	144.1	145.1	145.5	145.6	.1	5.4
Elementary and secondary .....	131.1	137.5	138.5	139.4	139.4	145.7	146.4	146.5	146.6	.1	5.2
Public administration <sup>2</sup> .....	127.2	131.4	132.0	133.8	134.6	137.5	138.1	140.5	141.0	.4	4.8

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

<sup>3</sup> Includes, for example, library, social and health services.  
 - Data not available.



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

(June 1981 = 100)

Series	1985			1986				1987		Percent change	
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	3 months ended	12 months ended
										June 1987	
<b>COMPENSATION</b>											
<b>Workers, by bargaining status<sup>1</sup></b>											
Union .....	125.5	126.5	127.1	128.4	128.7	129.4	129.8	130.5	131.2	0.5	1.9
Goods-producing .....	123.9	124.6	125.2	126.4	126.7	127.3	127.5	128.0	128.7	.5	1.6
Service-producing .....	128.0	129.5	130.2	131.6	131.9	132.8	133.4	134.4	135.2	.6	2.5
Manufacturing .....	124.2	125.0	125.5	127.0	126.9	127.5	127.9	128.0	128.7	.5	1.4
Nonmanufacturing .....	126.6	127.8	128.6	129.7	130.4	131.2	131.5	132.6	133.5	.7	2.4
Nonunion .....	125.0	126.8	127.5	129.0	130.2	131.2	132.1	133.6	134.6	.7	3.4
Goods-producing .....	123.5	124.4	125.1	126.7	128.2	129.1	130.0	130.8	131.8	.8	2.8
Service-producing .....	125.8	128.3	129.0	130.4	131.4	132.5	133.4	135.3	136.4	.8	3.8
Manufacturing .....	124.8	125.7	126.3	128.1	129.7	130.4	131.4	132.2	133.2	.8	2.7
Nonmanufacturing .....	125.1	127.3	128.1	129.5	130.4	131.6	132.5	134.3	135.3	.7	3.8
<b>Workers, by region<sup>1</sup></b>											
Northeast .....	126.4	128.8	129.9	131.6	133.3	134.2	135.2	137.4	138.6	.9	4.0
South .....	125.2	126.5	127.2	128.7	129.6	130.7	131.4	132.1	133.2	.8	2.8
Midwest (formerly North Central) .....	122.7	124.2	124.6	125.9	126.2	127.3	128.1	129.1	130.2	.9	3.2
West .....	127.9	129.1	129.8	130.8	131.6	132.1	132.8	134.1	134.2	.1	2.0
<b>Workers, by area size<sup>1</sup></b>											
Metropolitan areas .....	125.7	127.3	128.1	129.5	130.5	131.4	132.2	133.5	134.4	.7	3.0
Other areas .....	122.5	123.9	123.9	125.5	126.4	127.2	127.9	129.0	130.2	.9	3.0
<b>WAGES AND SALARIES</b>											
<b>Workers, by bargaining status<sup>1</sup></b>											
Union .....	123.0	124.1	124.7	125.6	126.1	126.9	127.2	127.7	128.3	.5	1.7
Goods-producing .....	121.3	122.2	122.7	123.4	124.1	124.5	124.8	125.0	125.8	.6	1.4
Service-producing .....	125.7	127.1	127.8	129.0	129.3	130.5	130.9	131.7	132.2	.4	2.2
Manufacturing .....	121.7	122.8	123.3	124.2	124.6	125.0	125.5	125.6	126.2	.5	1.3
Nonmanufacturing .....	124.1	125.3	125.9	126.9	127.4	128.5	128.7	129.5	130.1	.5	2.1
Nonunion .....	123.4	125.2	125.9	127.3	128.5	129.4	130.3	131.8	132.8	.8	3.3
Goods-producing .....	121.4	122.3	123.0	124.5	126.1	127.0	127.8	128.8	129.6	.6	2.8
Service-producing .....	124.4	126.9	127.7	128.9	129.9	130.8	131.7	133.6	134.6	.7	3.6
Manufacturing .....	122.8	123.7	124.4	126.1	127.7	128.5	129.5	130.6	131.5	.7	3.0
Nonmanufacturing .....	123.6	125.9	126.6	127.8	128.9	129.8	130.6	132.4	133.4	.8	3.5
<b>Workers, by region<sup>1</sup></b>											
Northeast .....	124.6	126.8	128.1	129.2	131.3	132.3	133.1	135.4	136.6	.9	4.0
South .....	123.4	124.8	125.4	126.8	127.8	128.8	129.4	130.1	131.1	.8	2.6
Midwest (formerly North Central) .....	121.1	122.5	122.9	124.2	124.4	125.3	126.2	127.4	128.5	.9	3.3
West .....	125.1	126.6	127.1	128.1	128.9	129.3	130.1	131.2	131.1	-.1	1.7
<b>Workers, by area size<sup>1</sup></b>											
Metropolitan areas .....	123.8	125.5	126.3	127.4	128.5	129.4	130.2	131.6	132.4	.6	3.0
Other areas .....	120.6	121.9	122.0	123.6	124.5	125.0	125.6	126.6	127.8	.9	2.7

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

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

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

Measure	Annual average		Quarterly average							
	1985	1986	1985		1986				1987	
			III	IV	I	II	III	IV	IP	IIP
<b>Specified adjustments:</b>										
Total compensation <sup>1</sup> adjustments, <sup>2</sup> settlements covering 5,000 workers or more:										
First year of contract .....	2.6	1.1	2.0	2.0	0.6	0.7	0.7	2.7	1.7	4.1
Annual rate over life of contract .....	2.7	1.6	3.0	1.4	1.2	1.6	1.2	2.4	2.4	3.9
Wage adjustments, settlements covering 1,000 workers or more:										
First year of contract .....	2.3	1.2	2.0	2.1	.8	1.3	.8	2.0	1.2	2.6
Annual rate over life of contract .....	2.7	1.8	3.1	1.9	1.5	2.0	1.5	2.1	1.8	2.9
<b>Effective adjustments:</b>										
Total effective wage adjustment <sup>3</sup> .....	3.3	2.3	1.2	.5	.6	.7	.5	.5	.4	1.0
From settlements reached in period .....	.7	.5	.2	.1	( <sup>4</sup> )	.2	.1	.2	( <sup>4</sup> )	.1
Deferred from settlements reached in earlier periods .....	1.8	1.7	.5	.2	.4	.6	.5	.2	.3	.7
From cost-of-living-adjustments clauses .....	.7	.2	.4	.1	.2	( <sup>4</sup> )	( <sup>4</sup> )	.1	.1	.2

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

<sup>2</sup> Adjustments are the net result of increases, decreases, and no changes in

compensation or wages.

<sup>3</sup> Because of rounding, total may not equal sum of parts.

<sup>4</sup> Between -0.05 and 0.05 percent.

P = preliminary.

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

Measure	Average for four quarters ending--							
	1985		1986				1987	
	III	IV	I	II	III	IV	IP	IIP
Specified total compensation adjustments, settlements covering 5,000 workers or more, all industries:								
First year of contract .....	3.1	2.6	2.3	1.4	0.9	1.1	1.2	1.9
Annual rate over life of contract .....	2.7	2.7	2.5	2.0	1.4	1.6	1.7	2.1
Specified wage adjustments, settlements covering 1,000 workers or more:								
All industries								
First year of contract .....	2.4	2.3	2.0	1.6	1.2	1.2	1.2	1.5
Contracts with COLA clauses .....	1.9	1.6	1.6	1.8	2.2	1.9	2.0	1.8
Contracts without COLA clauses .....	2.7	2.7	2.2	1.5	.8	.9	.9	1.4
Annual rate over life of contract .....	2.5	2.7	2.5	2.2	1.7	1.8	1.8	2.0
Contracts with COLA clauses .....	1.8	2.5	2.5	2.5	2.0	1.7	1.8	1.7
Contracts without COLA clauses .....	3.0	2.8	2.5	2.1	1.6	1.8	1.8	2.2
Manufacturing								
First year of contract .....	1.5	.8	.8	.1	-1.0	-1.2	-1.6	-.9
Contracts with COLA clauses .....	1.5	.8	.8	.7	1.1	1.3	1.3	1.3
Contracts without COLA clauses .....	1.5	.9	.9	-.4	-2.0	-2.8	-3.5	-2.9
Annual rate over life of contract .....	1.6	1.8	1.8	1.4	.3	.2	( <sup>2</sup> )	.2
Contracts with COLA clauses .....	1.4	2.1	2.1	2.0	1.1	.9	.8	.8
Contracts without COLA clauses .....	2.4	1.6	1.5	.9	-1	-2	-6	-3
Nonmanufacturing								
First year of contract .....	3.2	3.3	2.8	2.6	2.1	2.0	2.2	2.3
Contracts with COLA clauses .....	4.0	3.6	3.5	3.4	2.7	2.1	2.2	2.1
Contracts without COLA clauses .....	3.0	3.3	2.7	2.4	1.9	2.0	2.2	2.4
Annual rate over life of contract .....	3.3	3.3	3.0	2.8	2.3	2.3	2.4	2.6
Contracts with COLA clauses .....	3.9	3.6	3.6	3.3	2.5	2.1	2.2	2.2
Contracts without COLA clauses .....	3.2	3.3	2.8	2.6	2.2	2.4	2.6	2.8
Construction								
First year of contract .....	1.0	1.5	1.6	2.3	2.3	2.2	2.4	2.7
Contracts with COLA clauses .....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	1.1	1.4	1.4	1.6	3.7
Contracts without COLA clauses .....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	2.4	2.4	2.3	2.4	2.7
Annual rate over life of contract .....	1.7	2.1	2.2	2.5	2.6	2.5	2.5	2.9
Contracts with COLA clauses .....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	1.2	1.6	1.6	1.4	3.8
Contracts without COLA clauses .....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	2.6	2.6	2.5	2.6	2.9

<sup>1</sup> Data do not meet publication standards.

<sup>2</sup> Between -0.05 and 0.05 percent.

P = preliminary.

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

Effective wage adjustment	Average for four quarters ending--						
	1985	1986				1987	
	IV	I	II	III	IV <sup>P</sup>	IP	IIP
<b>For all workers:<sup>1</sup></b>							
Total .....	3.3	3.1	2.9	2.3	2.3	2.0	2.2
From settlements reached in period .....	.7	.6	.5	.5	.5	.4	.3
Deferred from settlements reached in earlier period .....	1.8	1.7	1.8	1.6	1.7	1.5	1.6
From cost-of-living-adjustments clauses .....	.7	.8	.7	.2	.2	.1	.3
<b>For workers receiving changes:</b>							
Total .....	4.1	4.0	3.8	3.1	2.8	2.5	2.8
From settlements reached in period .....	3.4	2.9	2.5	1.7	1.6	1.2	1.0
Deferred from settlements reached in earlier period .....	3.7	3.5	3.4	3.8	3.9	3.7	3.5
From cost-of-living-adjustments clauses .....	2.2	2.5	2.0	1.0	1.0	.6	1.8

<sup>1</sup> Because of rounding, total may not equal sum of parts.

<sup>P</sup> = preliminary.

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

Measure	Annual average		First 6 months 1987
	1985	1986	
<b>Specified adjustments:</b>			
Total compensation <sup>1</sup> adjustments, <sup>2</sup> settlements covering 5,000 workers or more:			
First year of contract .....	4.2	6.2	5.7
Annual rate over life of contract .....	5.1	6.0	4.9
<b>Wage adjustments, settlements covering 1,000 workers or more:</b>			
First year of contract .....	4.6	5.7	5.2
Annual rate over life of contract .....	5.4	5.7	5.4
<b>Effective adjustments:</b>			
Total effective wage adjustment <sup>3</sup> .....	5.7	5.5	1.6
From settlements reached in period .....	4.1	2.4	.4
Deferred from settlements reached in earlier periods .....	1.6	3.0	1.2
From cost-of-living-adjustment clauses .....	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )

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

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

<sup>3</sup> Because of rounding, total may not equal sum of parts.

<sup>4</sup> Less than 0.05 percent.

**29. Work stoppages involving 1,000 workers or more**

Measure	Annual totals		1986				1987 <sup>P</sup>								
	1985	1986	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
<b>Number of stoppages:</b>															
Beginning in period .....	54	69	8	5	2	1	2	5	3	2	3	8	5	2	5
In effect during period .....	61	72	18	18	9	6	7	7	5	5	7	12	13	11	13
<b>Workers involved:</b>															
Beginning in period (in thousands) .....	323.9	533.1	39.4	44.3	8.7	3.0	7.3	37.6	12.2	2.7	7.8	16.1	8.4	17.4	42.9
In effect during period (in thousands) .....	584.1	899.5	87.4	109.9	67.8	49.4	47.6	41.6	16.2	8.9	14.7	26.6	26.2	38.0	69.7
<b>Days idle:</b>															
Number (in thousands) .....	7,079.0	11,861.0	1,225.6	1,423.7	940.4	933.2	828.6	194.1	104.4	151.3	223.7	295.7	483.0	403.2	1,115.0
Percent of estimated working time <sup>1</sup> .....	.03	.05	.06	.06	.05	.04	.04	.01	.01	.01	.01	.01	.02	.02	.05

<sup>1</sup> 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.

<sup>P</sup> = preliminary



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

(1967 = 100, unless otherwise indicated)

Series	Annual average		1986				1987								
	1985	1986	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
<b>CONSUMER PRICE INDEX FOR ALL URBAN CONSUMERS:</b>															
All items .....	322.2	328.4	330.2	330.5	330.8	331.1	333.1	334.4	335.9	337.7	338.7	340.1	340.8	342.7	344.4
All items (1957-59=100) .....	374.7	381.9	384.1	384.4	384.7	385.1	387.4	388.9	390.7	392.7	393.9	395.6	396.3	398.5	400.5
<b>Food and beverages .....</b>	<b>302.0</b>	<b>311.8</b>	<b>315.1</b>	<b>315.6</b>	<b>316.4</b>	<b>317.0</b>	<b>320.5</b>	<b>321.6</b>	<b>321.6</b>	<b>322.5</b>	<b>324.0</b>	<b>325.4</b>	<b>325.1</b>	<b>325.4</b>	<b>326.4</b>
Food .....	309.8	319.7	323.2	323.7	324.6	325.2	328.9	330.1	330.0	331.0	332.5	334.1	333.6	333.8	334.9
Food at home .....	296.8	305.3	309.0	309.5	309.9	310.2	315.2	316.6	315.8	316.9	318.8	320.4	319.1	319.0	319.8
Cereals and bakery products .....	317.0	325.8	326.5	328.4	328.5	329.5	331.5	332.7	333.2	335.6	336.5	337.0	338.4	338.8	338.9
Meats, poultry, fish, and eggs .....	263.4	275.1	284.7	284.9	286.3	287.3	289.2	286.4	286.5	285.9	288.5	290.7	293.1	294.6	296.6
Dairy products .....	258.0	258.4	258.5	260.0	261.2	262.2	263.3	264.7	263.7	263.2	264.3	263.7	263.2	264.2	266.0
Fruits and vegetables .....	325.7	328.7	329.1	328.6	327.8	328.5	344.3	355.2	352.5	360.6	365.7	372.8	359.3	352.5	352.5
Other foods at home .....	361.1	373.6	373.7	374.4	373.9	372.2	378.7	380.0	378.6	377.6	377.5	376.4	375.9	377.0	376.6
Sugar and sweets .....	398.8	411.1	413.7	413.4	412.4	411.8	415.8	415.8	417.2	417.4	417.7	419.3	418.8	419.6	420.6
Fats and oils .....	294.4	287.8	285.6	284.6	285.4	286.0	293.2	290.3	294.6	291.8	293.3	291.4	292.9	292.6	291.2
Nonalcoholic beverages .....	451.7	478.2	475.7	477.5	476.9	470.2	482.6	481.9	475.4	469.8	467.9	462.6	458.5	458.8	458.4
Other prepared foods .....	294.2	301.9	303.8	304.7	303.9	305.2	308.4	312.1	311.3	313.2	313.5	314.5	314.5	317.5	316.9
Food away from home .....	346.6	360.1	363.3	364.0	365.8	367.1	368.6	369.6	370.9	371.5	372.3	373.8	374.9	375.9	377.4
Alcoholic beverages .....	229.5	239.7	240.4	240.6	240.5	240.8	242.5	243.2	243.6	244.3	245.0	245.9	246.7	247.3	247.8
<b>Housing .....</b>	<b>349.9</b>	<b>360.2</b>	<b>363.7</b>	<b>363.0</b>	<b>361.7</b>	<b>362.1</b>	<b>363.9</b>	<b>365.1</b>	<b>366.4</b>	<b>367.7</b>	<b>368.9</b>	<b>371.3</b>	<b>372.5</b>	<b>374.9</b>	<b>375.4</b>
Shelter .....	382.0	402.9	407.6	409.5	410.2	410.4	412.3	414.0	415.9	418.0	419.2	420.2	422.1	425.1	426.2
Renters' costs (12/82=100) .....	115.4	121.9	123.6	124.0	124.3	124.2	125.3	125.8	126.4	127.1	127.3	127.9	129.3	130.1	129.8
Rent, residential .....	264.6	280.0	283.2	284.6	285.6	286.0	287.1	288.0	288.3	288.8	289.4	289.6	291.2	293.1	294.5
Other renters' costs .....	398.4	416.2	429.1	427.3	425.5	418.2	428.3	430.8	438.7	446.1	446.1	453.1	465.9	467.7	458.0
Homeowners' costs (12/82=100) .....	113.1	119.4	120.7	121.3	121.5	121.6	122.0	122.5	123.0	123.6	124.0	124.2	124.4	125.4	126.0
Owners' equivalent rent (12/82=100) .....	113.2	119.4	120.7	121.3	121.5	121.6	122.0	122.5	123.0	123.6	124.0	124.2	124.4	125.4	126.0
Household insurance (12/82=100) .....	112.4	119.2	120.2	120.6	121.1	121.6	121.8	122.0	122.2	122.4	123.0	123.6	124.5	125.1	125.5
Maintenance and repairs .....	368.9	373.8	376.2	379.0	377.1	380.0	382.1	381.9	383.4	382.4	381.9	385.0	392.4	391.3	390.5
Maintenance and repair services .....	421.1	430.9	437.0	437.5	433.7	433.1	437.7	436.1	439.4	437.1	435.3	440.5	452.8	451.5	450.8
Maintenance and repair commodities .....	269.6	269.7	268.7	273.0	272.9	278.3	277.7	278.8	278.5	278.7	279.6	280.2	281.9	281.3	280.4
Fuel and other utilities .....	393.6	384.7	388.3	379.1	371.1	371.0	373.7	374.8	374.9	374.2	377.5	387.6	388.1	391.1	389.8
Fuels .....	488.1	463.1	467.2	450.3	437.8	438.1	443.7	445.1	444.6	442.0	448.7	470.8	468.9	473.6	471.6
Fuel oil, coal, and bottled gas .....	619.5	501.5	453.5	451.9	452.0	460.6	487.9	503.2	500.6	500.5	497.7	498.6	497.9	502.3	501.0
Gas (piped) and electricity .....	452.7	446.7	461.1	441.4	426.7	425.3	428.8	428.9	428.7	425.9	433.3	456.8	454.8	459.4	457.4
Other utilities and public services .....	240.7	253.1	255.6	257.1	255.4	254.9	254.9	255.6	256.2	257.0	257.2	256.4	258.6	259.9	259.3
Household furnishings and operations .....	247.2	250.4	251.5	251.6	251.2	252.4	253.1	253.5	254.3	255.2	254.9	254.9	255.4	255.4	255.8
Housefurnishings .....	200.1	201.1	202.2	202.2	201.4	202.5	203.0	203.2	203.8	204.7	203.7	203.6	203.9	204.2	204.6
Housekeeping supplies .....	313.6	319.5	320.1	319.8	320.4	322.9	324.6	325.3	327.7	328.2	330.1	330.5	330.1	329.5	330.4
Housekeeping services .....	338.9	346.6	347.8	348.5	348.5	349.3	349.8	350.6	351.0	352.2	353.1	353.0	353.8	354.3	354.6
<b>Apparel and upkeep .....</b>	<b>206.0</b>	<b>207.8</b>	<b>212.1</b>	<b>213.2</b>	<b>213.1</b>	<b>210.9</b>	<b>207.1</b>	<b>208.4</b>	<b>215.2</b>	<b>218.7</b>	<b>218.0</b>	<b>214.5</b>	<b>210.5</b>	<b>214.7</b>	<b>222.2</b>
Apparel commodities .....	191.6	192.0	196.6	197.6	197.4	194.9	190.9	192.1	199.1	202.6	201.8	198.1	194.0	198.3	206.0
Men's and boys' apparel .....	197.9	200.0	203.2	204.3	205.3	202.3	199.9	203.5	205.6	207.1	205.3	203.0	204.1	208.4	208.4
Women's and girls' apparel .....	169.5	168.0	175.7	176.4	175.0	171.7	166.6	167.8	177.0	182.2	179.6	173.7	168.3	175.0	186.2
Infants' and toddlers' apparel .....	299.7	312.7	309.7	312.0	307.0	312.7	301.8	304.5	319.6	319.1	316.4	308.0	301.2	304.8	313.6
Footwear .....	212.1	211.2	212.0	215.1	215.1	214.0	209.9	211.0	216.5	219.2	220.8	218.8	214.3	215.9	219.1
Other apparel commodities .....	215.5	217.9	221.1	219.8	221.1	220.0	223.2	226.0	227.4	227.0	226.7	230.6	231.9	234.2	236.4
Apparel services .....	320.9	334.6	336.7	338.3	339.0	339.5	342.5	343.2	344.7	344.7	346.8	347.4	348.7	348.2	348.4
<b>Transportation .....</b>	<b>319.9</b>	<b>307.5</b>	<b>302.2</b>	<b>302.6</b>	<b>304.3</b>	<b>304.8</b>	<b>308.5</b>	<b>310.0</b>	<b>310.6</b>	<b>313.3</b>	<b>314.6</b>	<b>316.7</b>	<b>318.5</b>	<b>320.2</b>	<b>320.4</b>
Private transportation .....	314.2	299.5	293.7	294.1	295.8	295.9	299.8	301.3	301.9	304.8	306.3	308.6	310.5	312.0	312.1
New vehicles .....	214.9	224.1	224.2	226.7	230.2	231.7	232.3	229.9	229.2	229.9	230.6	231.2	231.8	231.0	230.6
New cars .....	215.2	224.4	224.5	227.1	230.7	232.2	233.0	230.2	229.4	230.4	231.3	232.0	232.7	232.1	231.6
Used cars .....	379.7	363.2	359.5	360.6	361.0	356.6	354.6	356.9	363.0	371.6	378.6	383.0	385.5	385.7	387.3
Motor fuel .....	373.8	292.1	271.1	263.2	260.9	261.9	275.8	288.1	290.0	297.2	299.7	306.0	311.2	319.5	318.4
Gasoline .....	373.3	291.4	270.6	262.6	260.2	261.2	275.1	287.5	289.4	296.7	299.3	305.5	310.8	319.1	317.9
Maintenance and repair .....	351.4	363.1	365.0	365.7	368.4	370.7	371.3	373.0	373.0	376.1	376.1	376.3	376.8	378.6	380.7
Other private transportation .....	287.6	303.9	302.3	307.6	311.6	312.0	314.9	314.0	314.4	315.1	315.9	317.6	318.8	318.6	319.7
Other private transportation commodities .....	202.6	201.6	200.3	198.9	200.0	200.4	202.2	201.8	202.3	200.8	202.3	202.3	201.6	202.6	204.2
Other private transportation services .....	312.8	333.9	332.3	339.3	344.1	344.5	347.7	346.7	347.0	348.6	349.1	351.3	353.2	352.6	353.5
Public transportation .....	402.8	426.4	428.5	428.7	431.7	437.5	438.9	439.8	441.4	440.8	439.6	438.1	438.3	442.8	445.1
<b>Medical care .....</b>	<b>403.1</b>	<b>433.5</b>	<b>439.7</b>	<b>442.3</b>	<b>444.6</b>	<b>446.8</b>	<b>449.6</b>	<b>452.4</b>	<b>455.0</b>	<b>457.3</b>	<b>458.9</b>	<b>461.3</b>	<b>464.1</b>	<b>466.1</b>	<b>467.8</b>
Medical care commodities .....	256.7	273.6	276.7	277.5	278.2	280.8	282.4	283.9	286.3	287.5	289.6	291.5	293.4	294.6	295.8
Medical care services .....	435.1	468.6	475.7	478.8	481.5	483.4	486.5	489.6	492.1	494.7	496.0	498.4	501.5	503.6	505.4
Professional services .....	367.3	390.9	396.1	398.0	399.8	401.0	403.7	406.8	409.6	412.5	413.9	416.7	418.9	420.6	422.8
Hospital and related services .....	224.0	237.4	240.1	242.3	243.8	245.0	246.7	248.1	249.0	250.1	251.0	251.8	254.6	256.4	257.1
Other medical care commodities .....	256.7	273.6	276.7	277.5	278.2	280.8	282.4	283.9	286.3	287.5	289.6	291.5	293.4	294.6	295.8
Entertainment .....	265.0	274.1	275.3	276.5	277.4	277.4	278.3	278.7	279.8	281.3	282.0	282.3	283.5	283.9	285.2

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

(1967 = 100, unless otherwise indicated)

Series	Annual average		1986				1987								
	1985	1986	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
All items .....	322.2	328.4	330.2	330.5	330.8	331.1	333.1	334.4	335.9	337.7	338.7	340.1	340.8	342.7	344.4
Commodities .....	286.7	283.9	283.5	283.6	284.0	284.2	286.3	287.7	289.5	291.4	292.3	292.8	292.8	294.2	296.1
Food and beverages .....	302.0	311.8	315.1	315.6	316.4	317.0	320.5	321.6	321.6	322.5	324.0	325.4	325.1	325.4	326.4
Commodities less food and beverages .....	274.6	264.7	262.3	262.1	262.4	262.4	263.7	265.2	267.9	270.4	270.9	271.0	271.0	273.0	275.4
Nondurables less food and beverages .....	282.1	265.2	261.5	260.4	260.0	260.0	261.8	265.4	269.7	273.2	273.5	273.2	272.8	276.6	280.7
Apparel commodities .....	191.6	192.0	196.6	197.6	197.4	199.4	199.9	192.1	199.1	202.6	201.8	198.1	194.0	198.3	206.0
Nondurables less food, beverages, and apparel .....	333.3	307.3	299.5	297.2	296.7	298.0	304.8	310.3	311.9	315.0	316.4	319.1	322.0	325.2	325.7
Durables .....	270.7	270.2	269.3	270.5	271.8	271.7	272.4	271.2	271.7	273.0	273.6	274.2	274.9	274.6	274.6
Services .....	381.5	400.5	405.5	406.1	406.1	406.6	408.6	409.9	411.2	412.8	414.2	416.7	418.3	420.7	422.4
Rent of shelter (12/82=100) .....	113.9	120.2	121.7	122.2	122.4	122.5	123.1	123.6	124.1	124.8	125.1	125.4	126.0	126.9	127.2
Household services less rent of shelter (12/82=100) .....	111.2	112.8	114.9	112.9	111.0	110.8	111.3	111.5	111.5	111.4	112.3	114.8	115.1	115.8	115.5
Transportation services .....	337.0	356.3	356.2	360.5	364.4	366.2	368.5	368.5	369.0	370.5	370.5	371.6	372.9	373.8	375.2
Medical care services .....	435.1	468.6	475.7	478.8	481.5	483.4	486.5	489.6	492.1	494.7	496.0	498.4	501.5	503.6	505.4
Other services .....	314.1	331.8	337.9	339.5	340.3	340.8	342.2	343.1	343.7	345.0	345.9	346.6	347.7	349.2	355.6
Special indexes:															
All items less food .....	323.3	328.6	330.0	330.2	330.4	330.6	332.2	333.6	335.4	337.3	338.3	339.6	340.5	342.7	344.6
All items less shelter .....	303.9	306.7	307.9	307.8	308.0	308.3	310.3	311.5	312.9	314.6	315.6	317.1	317.4	319.0	320.9
All items less homeowners' costs (12/82=100) .....	109.7	111.2	111.7	111.7	111.8	111.9	112.7	113.1	113.6	114.2	114.6	115.1	115.3	115.9	116.5
All items less medical care .....	317.7	322.6	324.2	324.4	324.5	324.8	326.7	328.0	329.4	331.1	332.2	333.5	334.1	336.0	337.8
Commodities less food .....	272.5	263.4	261.1	260.9	261.2	261.2	262.5	264.0	266.5	268.9	269.4	269.5	269.6	271.6	273.7
Nondurables less food .....	277.2	262.2	258.9	257.8	257.4	257.5	259.2	262.6	266.4	269.6	270.0	269.8	269.5	273.1	276.8
Nondurables less food and apparel .....	319.2	297.1	290.2	288.1	287.7	288.9	294.9	299.6	301.0	303.7	305.0	307.4	309.9	312.7	313.2
Nondurables .....	293.2	289.6	289.4	289.0	289.2	289.5	292.1	294.6	296.8	299.1	300.0	300.5	300.1	302.3	304.9
Services less rent of shelter (12/82=100) .....	113.5	118.7	120.2	120.1	120.0	120.2	120.8	121.1	121.3	121.6	122.1	123.2	123.7	124.2	124.9
Services less medical care .....	373.3	390.6	395.4	395.7	395.4	395.8	397.6	398.8	400.0	401.5	402.9	405.4	406.8	409.3	410.9
Energy .....	426.5	370.3	360.6	348.6	341.7	342.4	352.2	359.2	360.0	362.4	366.9	380.6	382.4	388.9	387.4
All items less energy .....	314.8	327.0	330.0	331.4	332.3	332.6	334.0	334.9	336.5	338.2	339.0	339.5	340.1	341.6	343.6
All items less food and energy .....	314.4	327.1	329.9	331.6	332.5	332.8	333.6	334.5	336.4	338.3	338.9	339.1	339.9	341.7	343.9
Commodities less food and energy .....	259.7	263.2	264.5	265.5	266.1	265.8	265.5	265.7	268.4	270.3	270.7	270.1	269.6	270.9	273.6
Energy commodities .....	409.9	322.4	297.7	290.6	288.5	290.5	306.1	319.2	320.9	320.2	330.2	336.4	341.4	349.9	348.7
Services less energy .....	375.9	397.1	401.4	403.7	405.0	405.7	407.5	408.9	410.4	412.3	413.2	414.1	416.0	418.3	420.2
Purchasing power of the consumer dollar:															
1967=\$1.00 .....	31.0	30.5	30.3	30.3	30.2	30.2	30.0	29.9	29.8	29.6	29.5	29.4	29.3	29.2	29.0
1957-59=\$1.00 .....	26.7	26.2	26.0	26.0	26.0	26.0	25.8	25.7	25.6	25.5	25.4	25.3	25.2	25.1	25.0
<b>CONSUMER PRICE INDEX FOR URBAN WAGE EARNERS AND CLERICAL WORKERS:</b>															
All items .....	318.5	323.4	324.9	325.0	325.4	325.7	327.7	329.0	330.5	332.3	333.4	334.9	335.6	337.4	339.1
All items (1957-59=100) .....	370.4	376.1	377.8	378.0	378.4	378.8	381.1	382.6	384.4	386.5	387.8	389.5	390.3	392.4	394.3
Food and beverages .....	301.8	311.6	315.0	315.4	316.2	316.8	320.3	321.3	321.2	322.1	323.5	325.0	324.8	325.1	326.2
Food .....	319.2	322.8	323.3	324.2	324.8	324.8	328.4	329.5	329.4	330.2	331.8	333.4	333.1	333.4	334.5
Food at home .....	295.3	303.7	307.5	307.9	308.4	308.7	313.4	314.6	313.8	314.9	316.8	318.5	317.5	317.4	318.3
Cereals and bakery products .....	315.4	324.2	326.8	326.8	327.0	328.0	330.0	331.2	331.6	334.1	334.8	335.4	336.8	337.1	337.4
Meats, poultry, fish, and eggs .....	262.7	274.4	284.0	284.4	285.8	286.6	288.5	288.5	285.8	285.2	287.9	290.0	292.5	293.9	296.1
Dairy products .....	256.9	257.1	257.1	258.6	259.9	260.9	262.0	263.6	262.4	262.0	263.1	262.5	261.9	262.9	264.7
Fruits and vegetables .....	320.3	323.8	324.2	322.9	322.2	323.4	338.2	348.2	346.0	353.6	358.5	366.7	354.1	347.1	346.7
Other foods at home .....	361.5	373.5	373.5	374.4	373.9	372.2	378.9	380.0	378.8	377.8	377.9	376.8	376.3	377.5	377.1
Sugar and sweets .....	398.3	410.5	413.0	412.8	411.9	411.2	414.9	414.8	416.5	416.5	417.1	418.7	418.3	419.3	420.1
Fats and oils .....	293.9	287.2	285.1	284.1	284.5	285.5	292.6	289.9	293.9	291.3	292.6	290.7	292.2	291.9	290.6
Nonalcoholic beverages .....	453.2	478.1	475.5	477.7	477.1	470.3	483.7	482.5	476.9	471.3	470.0	464.5	460.5	461.0	460.9
Other prepared foods .....	295.7	303.2	305.2	305.9	305.3	306.6	309.7	313.3	312.6	314.5	314.9	315.8	316.7	318.7	318.1
Food away from home .....	349.7	363.4	366.6	363.3	369.2	370.5	372.2	373.2	374.3	374.8	375.6	377.1	378.2	379.2	380.9
Alcoholic beverages .....	232.6	242.5	243.4	243.5	243.4	243.9	245.4	246.2	246.5	247.2	247.8	248.2	249.2	249.8	250.2
Housing .....	343.3	353.2	356.6	355.6	354.3	354.8	356.3	357.5	358.8	360.0	361.1	363.5	364.6	367.0	367.5
Shelter .....	370.4	390.7	395.2	397.1	397.8	398.1	399.6	401.2	403.2	405.1	406.3	406.9	408.7	411.7	413.0
Renters' costs (12/84=100) .....	103.6	109.5	110.9	111.4	111.7	111.6	112.3	112.7	113.3	113.8	114.0	114.2	115.3	116.0	116.2
Rent, residential .....	263.7	279.1	282.2	283.6	284.6	285.1	286.1	287.0	287.3	287.8	288.3	288.5	290.0	291.9	293.2
Other renters' costs .....	397.9	416.0	428.9	426.7	424.8	417.3	424.9	427.6	439.0	448.1	449.2	453.1	467.0	468.8	462.0
Homeowners' costs (12/84=100) .....	103.1	108.8	110.0	110.5	110.7	110.8	111.1	111.6	112.1	112.7	113.1	113.2	113.4	114.3	114.8
Owners' equivalent rent (12/84=100) .....	103.0	108.8	110.0	110.5	110.7	110.8	111.1	111.5	112.1	112.7	113.1	113.2	113.4	114.3	114.8
Household insurance (12/84=100) .....	103.2	109.4	110.4	110.8	111.3	111.7	111.9	112.1	112.4	112.5	113.1	113.8	114.6	115.1	115.5
Maintenance and repairs .....	364.1	369.4	370.6	373.1	372.4	374.6	377.3	376.9	378.5	378.0	378.0	380.9	386.4	385.7	384.6
Maintenance and repair services .....	415.0	425.3	430.7	431.1	428.2	428.1	434.5	432.5	436.8	435.7	433.2	438.3	449.8	448.7	447.9
Maintenance and repair commodities .....	261.1	262.5	261.1	264.3	265.6	268.0	267.6	268.4	267.9	269.7	270.5	270.7	270.4	269.4	269.4
Fuel and other utilities .....	394.7	385.4	389.1	379.3	371.3	371.1	373.9	374.9	375.1	374.3	377.5	388.0	388.3	391.5	390.0
Fuels .....	487.5	462.7	467.1	449.2	437.1	437.3	442.7	443.7	443.2	440.7	446.9	478.0	467.6	472.6	470.5
Fuel oil, coal, and bottled gas .....	622.0	504.5	456.6	454.8	455.0	463.5	489.3	503.9	501.4	501.1	498.2	499.4	498.4	502.7	501.5
Gas (piped) and electricity .....	451.6	445.6	460.3	439.6	425.3	423.8	427.4	427.3	427.						



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

(1967=100, unless otherwise indicated)

Series	Annual average		1986				1987								
	1985	1986	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Apparel commodities .....	191.3	191.5	196.2	197.1	196.6	194.5	190.5	191.5	198.3	202.1	201.2	197.5	193.6	197.4	205.0
Men's and boys' apparel .....	198.2	199.7	202.3	203.6	204.6	202.1	198.6	198.9	201.9	204.3	205.7	204.0	201.7	203.1	207.2
Women's and girls' apparel .....	171.3	169.4	178.1	178.1	176.2	173.1	168.2	169.2	178.6	184.4	181.8	175.8	170.4	176.6	188.0
Infants' and toddlers' apparel .....	311.7	329.4	326.2	329.2	323.8	329.3	319.1	322.2	337.3	336.3	334.7	324.2	318.3	320.9	330.5
Footwear .....	212.5	211.8	212.0	215.3	215.6	214.9	211.1	212.4	217.7	220.0	221.3	219.4	215.5	217.2	219.9
Other apparel commodities .....	203.1	206.1	209.0	207.9	208.9	207.8	210.1	212.1	214.1	213.9	213.1	217.0	217.6	219.4	222.6
Apparel services .....	318.5	332.0	334.2	335.6	336.2	336.6	339.7	340.5	341.8	341.6	343.3	343.8	344.8	344.2	344.6
Transportation .....	321.6	307.6	301.8	302.2	304.0	304.2	308.2	309.9	310.8	313.9	315.5	317.9	319.7	321.4	321.7
Private transportation .....	317.4	301.5	295.3	295.7	297.5	297.5	301.6	303.4	304.2	307.4	309.1	311.7	313.6	315.2	315.4
New vehicles .....	214.2	223.3	223.3	225.7	229.4	230.7	231.2	228.9	228.2	229.0	229.5	229.9	230.3	229.5	229.2
New cars .....	214.5	223.6	223.7	226.3	230.0	231.4	232.0	229.3	228.5	229.3	230.9	231.6	230.9	230.9	230.4
Used cars .....	379.7	363.2	359.5	360.6	361.0	356.6	354.7	357.0	363.1	371.7	378.7	383.0	385.4	385.6	387.1
Motor fuel .....	375.4	293.1	271.9	264.0	262.0	263.2	277.7	289.5	291.3	298.7	301.2	307.6	313.0	321.4	320.0
Gasoline .....	375.0	292.5	271.4	263.4	261.3	262.5	277.1	288.9	290.7	298.3	300.7	307.2	312.6	321.0	319.6
Maintenance and repair .....	352.6	364.7	366.6	367.2	369.7	372.3	373.4	375.1	374.9	377.9	378.1	378.3	378.8	380.6	382.6
Other private transportation .....	287.7	302.2	299.7	305.2	309.5	309.9	312.6	311.5	311.7	312.1	312.9	314.7	315.8	315.4	316.4
Other private transportation commodities .....	204.7	203.9	202.7	201.1	202.3	202.8	204.3	204.0	204.3	202.6	204.0	204.4	203.8	204.7	206.0
Other private transportation services .....	312.3	330.9	328.1	335.4	340.7	341.0	344.0	342.6	342.9	344.1	344.6	346.9	348.7	347.7	348.5
Public transportation .....	391.7	416.3	418.8	418.9	421.1	425.8	426.7	427.2	428.7	428.9	428.9	426.9	426.9	430.7	433.0
Medical care .....	401.2	431.0	437.1	439.7	441.7	443.9	446.7	449.7	452.3	454.9	456.6	459.3	462.1	464.2	466.2
Medical care commodities .....	256.3	272.8	275.8	276.6	277.0	279.8	281.4	282.9	285.1	286.2	288.2	290.5	292.1	293.2	294.4
Medical care services .....	432.7	465.7	472.6	475.6	478.2	480.1	483.2	486.5	489.2	492.1	493.6	496.2	499.4	501.7	503.9
Professional services .....	367.7	391.4	396.6	398.4	400.2	401.5	404.2	407.4	410.2	413.3	414.7	417.5	419.7	421.5	424.0
Hospital and related services .....	221.2	234.2	236.8	239.1	240.4	241.6	243.2	244.6	245.4	246.5	247.4	248.2	250.9	252.8	253.5
Entertainment .....	260.1	268.7	270.0	271.1	272.1	272.3	272.9	273.4	274.4	276.0	276.9	277.0	278.2	278.5	279.7
Entertainment commodities .....	254.2	259.5	259.8	260.6	261.7	261.7	262.2	262.3	263.7	264.7	265.9	266.8	266.8	266.8	266.9
Entertainment services .....	271.6	286.0	288.9	290.7	291.6	292.0	292.7	293.9	294.2	296.6	297.2	297.4	299.0	299.9	302.4
Other goods and services .....	322.7	341.7	347.5	348.8	349.2	349.5	352.8	354.6	355.1	356.0	356.9	357.8	360.5	361.9	368.3
Tobacco products .....	328.1	350.7	356.5	356.8	356.9	357.2	364.7	368.0	369.2	370.0	370.5	372.3	379.7	380.5	382.1
Personal care .....	279.6	289.0	289.5	290.8	291.2	291.3	293.2	294.1	293.9	294.7	296.4	296.4	298.4	298.2	299.1
Toilet goods and personal care appliances .....	279.0	288.6	288.7	290.5	290.5	290.3	292.0	293.2	292.7	293.6	294.9	294.8	296.1	296.6	297.4
Personal care services .....	280.5	289.8	290.8	291.6	292.4	292.7	294.9	295.4	295.5	296.2	298.4	298.8	299.1	300.4	301.5
Personal and educational expenses .....	399.3	430.7	446.1	448.7	449.4	450.0	452.0	453.7	454.3	455.5	456.1	457.3	458.4	460.6	475.3
School books and supplies .....	355.7	384.8	393.9	396.7	396.9	397.1	406.5	409.3	409.6	410.1	410.5	410.6	410.7	411.4	423.7
Personal and educational services .....	410.1	442.0	458.7	461.3	462.1	462.8	464.3	465.9	466.6	467.8	468.5	469.8	471.0	473.4	488.5
All items .....	318.5	323.4	324.9	325.0	325.4	325.7	327.7	329.0	330.5	332.3	333.4	334.9	335.6	337.4	339.1
Commodities .....	286.5	283.1	282.6	282.6	283.1	283.3	285.5	287.0	288.6	290.7	291.6	292.4	292.5	293.9	295.7
Food and beverages .....	301.8	311.6	315.0	315.4	316.2	316.8	320.3	321.3	321.2	322.1	323.5	325.0	324.8	325.1	326.2
Commodities less food and beverages .....	274.9	264.2	261.5	261.1	261.5	261.5	262.9	264.6	267.2	269.9	270.6	270.9	271.2	273.3	275.4
Nondurables less food and beverages .....	283.8	265.6	260.5	260.2	259.7	259.9	262.3	266.0	270.0	273.7	274.2	274.1	274.1	277.9	281.7
Apparel commodities .....	191.3	191.5	196.2	197.1	196.6	194.5	190.5	191.5	198.3	202.1	201.2	197.5	193.6	197.4	205.0
Nondurables less food, beverages, and apparel .....	334.2	306.7	298.4	296.0	295.6	296.9	304.4	310.2	311.5	315.0	316.5	319.5	322.8	326.2	326.5
Durables .....	265.2	264.0	263.0	264.0	265.3	265.0	265.4	264.5	265.3	266.8	267.8	268.5	269.1	269.0	269.1
Services .....	377.3	395.7	400.4	401.0	401.0	401.5	403.3	404.5	405.9	407.3	408.8	411.4	412.8	415.3	416.9
Rent of shelter (12/84=100) .....	103.2	109.0	110.3	110.8	111.0	111.1	111.5	111.9	112.5	113.0	113.4	113.5	114.0	114.9	115.2
Household services less rent of shelter (12/84=100) .....	102.6	103.9	106.0	103.8	102.0	101.8	102.3	102.5	102.5	103.2	103.2	105.7	105.9	106.6	106.3
Transportation services .....	332.2	350.1	349.2	353.8	357.9	359.5	361.7	361.3	361.6	363.2	363.5	364.7	365.9	366.3	367.6
Medical care services .....	432.7	465.7	472.6	475.6	478.2	480.1	483.2	486.5	489.2	492.1	493.6	496.2	499.4	501.7	503.9
Other services .....	310.1	326.9	332.2	333.8	334.7	335.1	336.4	337.5	338.0	339.4	340.3	340.9	342.0	343.3	349.7
Special indexes:															
All items less food .....	319.4	323.0	323.9	324.0	324.2	324.4	326.0	327.4	329.3	331.3	332.3	333.7	334.6	336.8	338.5
All items less shelter .....	303.4	305.1	305.9	305.7	305.9	306.3	308.4	309.6	311.0	312.8	313.9	315.6	315.9	317.4	319.2
All items less homeowners' costs (12/84=100) .....	101.8	102.8	103.2	103.2	103.2	103.4	104.0	104.5	104.9	105.5	105.9	106.4	106.6	107.1	107.7
All items less medical care .....	314.3	318.0	319.3	319.3	319.6	319.8	321.8	323.0	324.5	326.2	327.3	328.8	329.3	331.1	332.8
Commodities less food .....	272.8	262.9	260.3	260.0	260.3	260.4	261.8	263.5	265.9	268.5	269.2	269.5	269.8	271.8	273.8
Nondurables less food .....	279.0	262.7	259.1	257.8	257.4	257.6	259.9	263.3	266.9	270.4	270.8	270.9	270.9	274.4	277.8
Nondurables less food and apparel .....	320.3	296.9	289.6	287.4	287.0	288.2	294.8	299.7	300.9	303.9	305.3	307.9	310.8	313.8	314.1
Nondurables .....	293.9	289.8	289.5	289.0	289.2	289.6	292.5	294.9	296.9	299.2	300.1	300.9	300.8	302.9	305.3
Services less rent of shelter (12/84=100) .....	102.6	107.1	108.3	108.2	108.1	108.3	108.8	109.0	109.2	109.5	109.9	111.1	111.5	112.0	112.5
Services less medical care .....	369.0	385.9	390.3	390.6	390.4	390.7	392.5	393.5	394.7	396.1	397.5	400.1	401.4	403.8	405.4
Energy .....	426.3	367.5	356.9	344.8	338.5	339.2	349.8	356.9	357.7	360.8	364.9	378.6	380.6	387.5	385.8
All items less energy .....	309.9	321.2	323.9	325.3	326.3	326.5	327.8	328.7	330.2	331.9	332.8	333.2	333.8	335.2	337.8
All items less food and energy .....	308.7	320.3	322.7	324.4	325.4	325.6	326.3	327.1	329.0	330.9	331.6	331.8	332.6	334.2	336.4
Commodities less food and energy .....	256.8	259.8	260.9	261.7	262.4	262.1	261.7	262.0	264.6	266.6	267.1	266.7	266.3	267.5	270.0
Energy commodities .....	410.9	322.9	298.2	290.9	289.1	291.1	307.2	319.9	321.5	328.9	331.2	337.7	343.1	351.8	350.4
Services less energy .....	371.1	391.9	395.7	398.2	399.6	400.2	401.9								



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

(1967 = 100, unless otherwise indicated)

Area <sup>1</sup>	Pricing schedule <sup>2</sup>	Other index base	All Urban Consumers							Urban Wage Earners						
			1986		1987					1986		1987				
			Sept.	Oct.	May	June	July	Aug.	Sept.	Sept.	Oct.	May	June	July	Aug.	Sept.
U.S. city average .....	M	-	330.2	330.5	338.7	340.1	340.8	342.7	344.4	324.9	325.0	333.4	334.9	335.6	337.4	339.1
<b>Region and area size<sup>3</sup></b>																
Northeast urban .....	M	12/77	-	176.4	181.7	182.4	182.7	184.1	185.1	-	173.5	178.9	179.5	179.9	181.2	182.1
Size A - More than 1,200,000 .....	M	12/77	-	174.2	179.5	180.5	180.7	182.1	183.5	-	169.7	175.2	176.1	176.3	177.7	179.0
Size B - 500,000 to 1,200,000 .....	M	12/77	-	178.0	182.8	182.0	182.5	183.3	183.2	-	174.6	179.7	179.0	179.5	180.3	180.2
Size C - 50,000 to 500,000 .....	M	12/77	-	183.8	189.0	189.7	190.9	192.5	192.2	-	188.1	193.5	194.1	195.1	196.6	197.0
North Central urban .....	M	12/77	-	176.5	180.8	182.4	182.6	184.0	184.8	-	172.4	176.7	178.3	178.6	179.8	180.6
Size A - More than 1,200,000 .....	M	12/77	-	180.3	184.5	186.6	186.9	188.2	189.2	-	174.5	178.8	180.7	181.0	182.3	183.3
Size B - 360,000 to 1,200,000 .....	M	12/77	-	174.0	179.5	180.2	180.2	182.0	182.4	-	169.5	174.8	175.5	175.6	177.4	177.8
Size C - 50,000 to 360,000 .....	M	12/77	-	172.3	176.9	177.8	178.2	179.6	180.8	-	168.7	173.0	174.0	174.3	175.5	176.6
Size D - Nonmetropolitan (less than 50,000) .....	M	12/77	-	171.7	174.9	176.1	176.7	177.1	176.7	-	172.7	176.2	177.4	178.2	178.5	178.3
South urban .....	M	12/77	-	177.5	181.4	182.1	182.6	183.2	184.0	-	176.3	180.3	181.0	181.6	182.1	183.0
Size A - More than 1,200,000 .....	M	12/77	-	177.6	182.0	182.6	183.3	184.0	184.7	-	176.9	181.4	182.1	182.7	183.3	184.2
Size B - 450,000 to 1,200,000 .....	M	12/77	-	180.0	183.2	183.7	184.1	184.8	186.3	-	175.7	179.1	179.6	180.0	180.6	182.1
Size C - 50,000 to 450,000 .....	M	12/77	-	175.8	179.8	180.8	181.4	181.7	182.0	-	176.3	180.4	181.6	182.2	182.5	182.9
Size D - Nonmetropolitan (less than 50,000) .....	M	12/77	-	175.4	178.9	179.1	179.9	180.0	181.1	-	175.9	179.5	179.7	180.6	180.9	181.9
West urban .....	M	12/77	-	180.4	184.4	184.5	184.7	185.6	186.7	-	177.8	181.7	181.9	182.1	183.0	183.9
Size A - More than 1,250,000 .....	M	12/77	-	184.2	188.1	187.9	188.1	189.2	190.3	-	179.0	182.9	182.8	182.9	183.9	184.9
Size B - 330,000 to 1,250,000 .....	M	12/77	-	179.2	183.2	183.9	184.0	184.3	185.8	-	179.3	183.5	184.0	184.2	184.6	185.9
Size C - 50,000 to 330,000 .....	M	12/77	-	173.1	175.2	176.4	176.6	177.1	177.9	-	171.2	173.2	174.2	174.6	175.2	175.9
<b>Size classes:</b>																
A .....	M	12/77	-	-	102.5	103.0	103.2	103.8	104.4	-	-	102.6	103.1	103.3	103.9	104.5
B .....	M	12/77	-	178.3	182.4	182.7	183.0	183.9	184.8	-	175.1	179.3	179.6	179.9	180.8	181.7
C .....	M	12/77	-	175.9	180.0	181.0	181.5	182.4	182.9	-	175.7	179.8	180.8	181.4	182.2	182.9
D .....	M	12/77	-	174.5	178.2	178.8	179.5	179.7	180.3	-	175.1	178.9	179.6	180.3	180.7	181.3
<b>Selected local areas</b>																
Chicago, IL- Northwestern IN .....	M	-	333.9	328.7	338.4	345.0	346.1	348.8	349.9	318.3	313.4	322.7	328.9	330.0	332.5	333.5
Los Angeles-Long Beach, Anaheim, CA .....	M	-	334.6	336.2	345.1	344.2	344.1	346.7	348.6	326.8	328.3	337.1	336.3	336.2	338.8	340.4
New York, NY- Northeastern NJ .....	M	-	326.6	327.8	339.0	340.6	340.7	343.7	346.4	317.5	318.7	330.2	331.7	331.6	334.4	337.4
Philadelphia, PA-NJ .....	M	-	325.8	324.7	336.2	339.0	339.1	342.2	342.8	326.7	326.1	337.5	340.4	340.7	343.9	344.2
San Francisco- Oakland, CA .....	M	-	-	347.7	353.5	353.5	356.0	356.9	358.5	-	341.1	347.0	347.3	349.3	349.9	351.4
Baltimore, MD .....	1	-	334.0	-	340.1	-	343.8	-	346.0	330.9	-	337.4	-	341.9	-	344.3
Boston, MA .....	1	-	328.2	-	335.1	-	338.0	-	347.2	325.2	-	332.9	-	336.3	-	345.5
Cleveland, OH .....	1	-	-	352.1	357.5	-	361.4	-	367.5	-	329.3	334.2	-	337.9	-	343.4
Miami, FL .....	1	11/77	174.3	-	179.1	-	180.5	-	181.3	174.5	-	179.2	-	180.9	-	181.6
St. Louis, MO-IL .....	1	-	325.7	-	330.5	-	334.7	-	339.5	320.7	-	326.3	-	331.0	-	335.7
Washington, DC-MD-VA .....	1	-	332.3	-	340.5	-	343.1	-	347.8	334.6	-	343.2	-	345.4	-	350.8
Dallas-Ft. Worth, TX .....	2	-	-	345.9	-	354.1	-	356.0	-	-	338.5	-	347.4	-	349.5	-
Detroit, MI .....	2	-	321.1	324.3	-	330.2	-	333.5	-	310.5	313.6	-	319.7	-	322.7	-
Houston, TX .....	2	-	-	334.0	-	341.5	-	344.0	-	-	331.7	-	339.7	-	341.7	-
Pittsburgh, PA .....	2	-	-	331.8	-	338.9	-	341.7	-	-	310.6	-	317.8	-	320.3	-

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Regions are defined as the four Census regions.

- Data not available.

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

**32. Annual data: Consumer Price Index all items and major groups**

Series	1978	1979	1980	1981	1982	1983	1984	1985	1986
Consumer Price Index for All Urban Consumers:									
All items:									
Index .....	195.4	217.4	246.8	272.4	289.1	298.4	311.1	322.2	328.4
Percent change .....	7.7	11.3	13.5	10.4	6.1	3.2	4.3	3.6	1.9
Food and beverages:									
Index .....	206.3	228.5	248.0	267.3	278.2	284.4	295.1	302.0	311.8
Percent change .....	9.7	10.8	8.5	7.8	4.1	2.2	3.8	2.3	3.2
Housing:									
Index .....	202.8	227.6	263.3	293.5	314.7	323.1	336.5	349.9	360.2
Percent change .....	8.7	12.2	15.7	11.5	7.2	2.7	4.1	4.0	2.9
Apparel and upkeep:									
Index .....	159.6	166.6	178.4	186.9	191.8	196.5	200.2	206.0	207.8
Percent change .....	3.5	4.4	7.1	4.8	2.6	2.5	1.9	2.9	.9
Transportation:									
Index .....	185.5	212.0	249.7	280.0	291.5	298.4	311.7	319.9	307.5
Percent change .....	4.7	14.3	17.8	12.1	4.1	2.4	4.5	2.6	-3.9
Medical care:									
Index .....	219.4	239.7	265.9	294.5	328.7	357.3	379.5	403.1	433.5
Percent change .....	8.4	9.3	10.9	10.8	11.6	8.7	6.2	6.2	7.5
Entertainment:									
Index .....	176.6	188.5	205.3	221.4	235.8	246.0	255.1	265.0	274.1
Percent change .....	5.3	6.7	8.9	7.8	6.5	4.3	3.7	3.9	3.4
Other goods and services:									
Index .....	183.3	196.7	214.5	235.7	259.9	288.3	307.7	326.6	346.4
Percent change .....	6.4	7.3	9.0	9.9	10.3	10.9	6.7	6.1	6.1
Consumer Price Index for Urban Wage Earners and Clerical Workers:									
All items:									
Index .....	195.3	217.7	247.0	272.3	288.6	297.4	307.6	318.5	323.4
Percent change .....	7.6	11.5	13.5	10.2	6.0	3.0	3.4	3.5	1.5

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

(1967 = 100)

Grouping	Annual average		1986			1987								
	1985	1986	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
<b>Finished goods</b> .....	293.7	289.7	290.7	290.7	290.4	291.8	292.3	292.6	294.9	295.8	296.8	297.8	297.2	296.7
Finished consumer goods .....	291.8	284.9	285.2	285.1	284.8	286.2	287.1	287.5	290.1	291.3	292.7	293.8	293.0	292.7
Finished consumer goods .....	271.2	278.1	283.6	283.1	282.9	280.1	280.8	280.3	283.2	286.6	287.7	287.6	283.6	286.0
Finished consumer goods excluding foods .....	297.3	283.5	281.0	281.2	280.8	284.4	285.3	286.3	288.6	288.6	290.1	292.0	292.9	291.1
Nondurable goods less food .....	339.3	311.2	301.9	302.2	302.1	307.7	310.5	312.2	314.7	314.9	317.4	320.2	322.2	320.5
Durable goods .....	241.5	246.8	253.5	253.5	252.8	253.2	250.7	250.6	252.5	252.1	251.9	252.3	251.3	249.4
Capital equipment .....	300.5	306.4	309.9	310.4	310.1	311.2	310.7	310.5	311.8	311.8	311.6	312.1	312.1	311.0
<b>Intermediate materials, supplies, and components</b> .....	318.7	307.6	304.8	304.8	305.0	307.0	308.9	309.3	311.0	313.1	314.8	317.1	318.2	318.9
Materials and components for manufacturing .....	299.5	296.1	296.4	296.4	296.4	297.8	298.7	299.5	301.4	303.2	304.6	306.4	306.6	308.0
Materials for food manufacturing .....	258.8	251.0	253.9	253.2	253.2	251.1	251.6	250.4	255.3	261.9	261.2	262.0	258.5	261.9
Materials for nondurable manufacturing .....	285.9	279.1	277.5	278.0	278.3	281.3	283.1	283.9	286.9	288.1	291.6	293.1	292.3	294.0
Materials for durable manufacturing .....	320.2	313.8	315.3	314.9	313.9	315.8	316.2	317.8	320.3	324.0	325.3	329.7	332.5	334.9
Components for manufacturing .....	291.5	294.4	294.9	294.9	295.2	295.8	296.1	297.0	297.0	297.1	297.2	298.0	298.3	298.5
Materials and components for construction .....	315.2	317.4	317.3	317.5	316.9	317.1	317.9	318.7	319.3	319.9	320.2	321.8	323.8	325.4
Processed fuels and lubricants .....	548.9	430.2	394.9	392.8	395.5	406.7	418.5	416.0	421.3	429.3	437.5	449.5	457.4	450.1
Containers .....	311.2	314.9	318.1	319.0	319.2	320.7	323.6	324.9	325.4	325.5	326.1	326.1	326.8	329.6
Supplies .....	284.2	287.3	287.5	288.0	288.2	289.0	289.5	289.6	290.5	292.0	292.7	293.2	293.3	294.5
<b>Crude materials for further processing</b> ...	306.1	280.3	277.2	279.2	277.0	284.2	287.2	288.6	295.3	302.9	304.9	307.8	307.7	305.4
Foodstuffs and feedstuffs .....	235.0	231.0	235.0	236.8	233.5	227.6	229.9	229.6	240.1	251.7	246.5	243.1	240.1	238.8
Crude nonfood materials .....	459.2	386.8	367.9	370.3	370.6	394.2	398.5	402.0	405.3	409.4	420.1	431.0	434.1	430.3
<b>Special groupings</b>														
Finished goods, excluding foods .....	299.0	291.1	290.4	290.7	290.4	293.2	293.6	294.3	296.3	296.3	297.2	298.6	299.3	297.7
Finished energy goods .....	720.9	518.5	452.1	453.7	454.6	477.4	489.6	495.5	507.4	506.9	520.7	527.5	534.0	521.8
Finished goods less energy .....	269.2	275.6	280.0	280.0	279.6	279.7	279.5	279.5	281.2	282.2	282.5	283.1	282.0	282.3
Finished consumer goods less energy .....	261.3	267.9	272.6	272.4	272.0	271.8	271.7	271.8	273.6	274.9	275.3	276.0	274.6	275.3
Finished goods less food and energy .....	268.7	274.9	278.9	279.1	278.7	279.8	279.3	279.5	280.7	280.7	280.7	281.6	281.8	281.1
Finished consumer goods less food and energy .....	252.1	258.4	262.6	262.6	262.2	263.4	262.9	263.3	264.4	264.5	264.5	265.7	265.9	265.5
Consumer nondurable goods less food and energy .....	246.2	253.0	254.8	254.9	254.7	256.4	257.2	257.9	258.4	258.8	258.9	260.7	261.6	262.3
Intermediate materials less foods and feeds .....	325.0	313.3	310.4	310.3	310.5	312.8	314.7	315.3	316.9	318.5	320.3	322.8	324.2	324.6
Intermediate foods and feeds .....	232.8	230.3	230.3	231.0	231.5	229.5	230.0	227.6	231.9	240.4	241.3	241.1	237.7	241.4
Intermediate energy goods .....	528.3	414.4	380.3	378.3	380.7	391.3	402.6	400.3	405.3	412.2	420.1	431.7	439.3	432.5
Intermediate goods less energy .....	304.0	303.5	303.9	304.1	304.1	305.2	306.1	306.8	308.2	309.8	310.8	312.2	312.6	314.1
Intermediate materials less foods and energy .....	305.2	304.4	304.8	304.9	304.8	306.2	307.2	308.1	309.3	310.5	311.6	313.2	314.0	315.3
Crude energy materials .....	748.1	575.8	534.4	537.0	533.2	578.0	584.4	590.1	594.1	597.4	612.2	629.5	632.6	615.4
Crude materials less energy .....	233.2	229.2	231.6	233.3	231.5	228.1	230.4	230.6	238.9	248.7	247.1	246.0	244.8	246.8
Crude nonfood materials less energy .....	249.7	245.6	242.3	244.4	247.1	250.3	252.8	254.4	257.4	263.2	271.1	276.4	280.0	291.2



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

(1967 = 100)

Grouping	Annual average		1986			1987								
	1985	1986	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Total durable goods .....	297.3	300.0	302.2	302.4	302.1	302.9	302.8	303.4	304.3	304.7	305.2	306.2	306.9	307.4
Total nondurable goods .....	317.2	298.8	294.4	294.8	294.7	298.2	300.7	301.1	304.4	307.7	309.8	312.0	312.0	311.5
Total manufactures .....	304.3	297.6	297.0	297.1	297.2	299.5	300.7	300.8	303.0	304.4	305.4	306.8	307.5	307.5
Durable .....	298.1	300.8	303.1	303.3	302.9	303.7	303.5	304.1	305.0	305.3	305.4	306.3	306.9	307.1
Nondurable .....	310.5	294.0	290.4	290.5	291.0	294.7	297.4	297.0	300.5	303.0	304.9	306.8	307.7	307.5
Total raw or slightly processed goods .....	327.9	305.6	299.2	300.6	298.6	301.6	303.6	305.9	308.4	313.9	316.9	320.0	318.3	317.8
Durable .....	252.2	252.0	252.0	254.4	255.4	258.8	260.9	261.1	262.1	267.8	279.0	286.3	292.5	302.8
Nondurable .....	332.4	308.6	301.8	303.1	300.9	303.9	305.8	308.3	310.9	316.4	318.8	321.7	319.5	318.3

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

(1967 = 100)

Index	1978	1979	1980	1981	1982	1983	1984	1985	1986
<b>Finished goods:</b>									
Total .....	195.9	217.7	247.0	269.8	280.7	285.2	291.1	293.7	289.7
Consumer goods .....	194.9	217.9	248.9	271.3	281.0	284.6	290.3	291.8	284.9
Capital equipment .....	199.2	216.5	239.8	264.3	279.4	287.2	294.0	300.5	306.4
<b>Intermediate materials, supplies, and components:</b>									
Total .....	215.6	243.2	280.3	306.0	310.4	312.3	320.0	318.7	307.6
Materials and components for manufacturing .....	208.7	234.4	265.7	286.1	289.8	293.4	301.8	299.5	296.1
Materials and components for construction .....	224.7	247.4	268.3	287.6	293.7	301.8	310.3	315.2	317.4
Processed fuels and lubricants .....	295.3	364.8	503.0	595.4	591.7	564.8	566.2	548.9	430.2
Containers .....	202.8	226.8	254.5	276.1	285.6	286.6	302.3	311.2	314.9
Supplies .....	198.5	218.2	244.5	263.8	272.1	277.1	283.4	284.2	287.3
<b>Crude materials for further processing:</b>									
Total .....	234.4	274.3	304.6	329.0	319.5	323.6	330.8	306.1	280.3
Foodstuffs and feedstuffs .....	216.2	247.9	259.2	257.4	247.8	252.2	259.5	235.0	231.0
Nonfood materials except fuel .....	272.3	330.0	401.0	482.3	473.9	477.4	484.5	459.2	386.8
Fuel .....	426.8	507.6	615.0	751.2	886.1	931.5	931.3	909.6	817.2

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

(June 1977 = 100, unless otherwise indicated)

Category	1974 SITC	1984		1985				1986				1987	
		Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	
<b>ALL COMMODITIES (9/83=100)</b> .....		98.1	97.5	97.5	96.5	96.7	97.0	96.7	95.1	96.2	97.2	99.9	
<b>Food (3/83=100)</b> .....	0	96.5	95.8	94.0	90.2	93.6	90.5	89.5	77.2	81.2	79.8	83.4	
Meat (3/83=100) .....	01	104.4	103.9	104.7	106.1	112.2	111.5	114.7	122.0	122.6	123.4	129.0	
Fish (3/83=100) .....	03	98.7	101.0	103.6	102.6	101.8	102.2	106.2	111.2	116.9	118.5	122.9	
Grain and grain preparations (3/80=100) .....	04	92.9	92.4	90.3	82.6	87.1	82.1	79.1	59.0	64.8	62.9	66.5	
Vegetables and fruit (3/83=100) .....	05	114.7	119.5	120.2	126.9	118.9	115.3	125.8	131.4	131.9	130.8	130.8	
Feedstuffs for animals (3/83=100) .....	08	82.4	72.8	68.6	75.7	83.4	88.5	85.5	90.2	87.4	85.7	93.7	
Misc. food products (3/83=100) .....	09	108.4	110.6	109.2	108.1	107.7	106.0	104.7	106.6	108.2	108.6	110.0	
<b>Beverages and tobacco (6/83=100)</b> .....	1	101.3	99.9	100.1	99.7	98.6	95.6	96.5	96.3	101.6	101.7	104.0	
Beverages (9/83=100) .....	11	103.7	104.0	105.3	101.8	100.9	101.9	103.0	102.2	102.9	104.7	104.8	
Tobacco and tobacco products (6/83=100) .....	12	101.1	99.5	99.6	99.5	98.4	95.1	95.9	95.8	101.4	101.4	104.0	
<b>Crude materials (6/83=100)</b> .....	2	101.4	97.5	96.8	93.3	92.5	95.8	95.6	92.3	94.8	97.3	106.4	
Raw hides and skins (6/80=100) .....	21	133.6	121.0	126.2	129.0	139.9	138.9	148.9	138.0	148.3	168.8	191.2	
Oilseeds and oleaginous fruit (9/77=100) .....	22	74.8	71.0	71.2	64.2	63.9	66.9	65.8	64.5	62.9	60.4	68.6	
Crude rubber (including synthetic and reclaimed) (9/83=100) .....	23	104.0	106.4	106.3	107.1	106.0	106.0	106.1	105.3	104.4	-	111.8	
Wood .....	24	125.4	128.7	125.7	124.5	128.1	128.7	128.7	129.7	135.5	139.0	146.2	
Pulp and waste paper (6/83=100) .....	25	114.2	100.5	96.1	93.8	92.7	98.8	109.7	119.8	121.2	133.0	138.7	
Textile fibers .....	26	106.7	102.4	105.8	103.6	97.7	101.6	98.6	74.7	92.2	99.7	115.0	
Crude fertilizers and minerals .....	27	163.2	165.6	167.9	169.4	165.5	168.0	166.1	164.3	162.8	155.6	155.1	
Metalliferous ores and metal scrap .....	28	92.4	89.2	82.0	80.1	78.7	83.4	80.5	84.6	80.7	82.2	90.7	
<b>Mineral fuels</b> .....	3	99.7	100.1	99.2	97.6	96.6	91.9	86.7	85.7	84.7	85.6	84.4	
<b>Animal and vegetable oils, fats, and waxes</b> .....	4	147.9	142.0	144.5	114.5	101.4	90.8	84.4	76.5	86.8	88.9	94.5	
Fixed vegetable oils and fats (6/83=100) .....	42	156.7	152.9	164.8	128.8	108.7	95.4	95.3	80.8	87.0	89.1	94.7	
<b>Chemicals (3/83=100)</b> .....	5	97.7	97.0	96.8	97.1	96.6	96.5	95.4	93.1	92.2	96.6	103.1	
Organic chemicals (12/83=100) .....	51	94.7	93.8	96.5	97.1	95.4	93.5	89.3	88.0	89.4	99.5	114.3	
Fertilizers, manufactured (3/83=100) .....	56	94.8	92.5	87.9	89.8	90.0	88.6	84.0	77.4	68.7	75.4	80.4	
<b>Intermediate manufactured products (9/81=100)</b> .....	6	100.4	99.4	99.2	99.2	99.1	100.3	101.2	102.2	102.7	104.4	106.8	
Leather and furskins (9/79=100) .....	61	79.0	82.5	79.2	75.9	78.5	77.8	82.5	84.2	88.0	96.3	101.1	
Rubber manufactures .....	62	148.5	150.2	149.0	148.3	148.7	151.0	150.0	150.4	151.3	152.1	153.9	
Paper and paperboard products (6/78=100) .....	64	159.5	155.0	151.6	149.6	148.2	152.2	158.7	165.3	167.9	174.4	177.7	
Iron and steel (3/82=100) .....	67	96.5	95.5	95.3	95.9	98.2	98.4	99.4	100.2	100.1	101.5	101.5	
Nonferrous metals (9/81=100) .....	68	82.5	79.7	79.6	79.8	78.2	80.2	79.1	79.4	78.8	80.3	90.2	
Metal manufactures, n.e.s. (3/82=100) .....	69	105.0	105.4	105.2	105.4	104.4	105.3	105.5	105.6	105.7	105.7	105.6	
<b>Machinery and transport equipment, excluding military and commercial aircraft (12/78=100)</b> .....	7	141.5	142.3	142.9	143.1	143.3	144.0	144.2	144.6	145.5	146.2	146.8	
Power generating machinery and equipment (12/78=100) .....	71	167.5	165.3	167.4	167.1	167.5	169.1	169.2	169.5	171.4	173.0	172.8	
Machinery specialized for particular industries (9/78=100) .....	72	153.4	155.0	155.7	156.0	156.2	155.5	154.7	155.0	155.7	154.7	156.0	
Metalworking machinery (6/78=100) .....	73	151.9	153.4	155.1	156.3	158.4	159.0	158.9	160.4	161.8	165.0	165.8	
General industrial machines and parts n.e.s. 9/78=100) .....	74	150.2	152.4	152.0	152.4	152.2	152.3	153.3	154.4	155.3	157.7	157.8	
Office machines and automatic data processing equipment .....	75	101.4	100.9	100.0	99.9	99.4	99.9	99.2	98.9	98.1	96.1	96.0	
Telecommunications, sound recording and reproducing equipment .....	76	134.3	133.3	133.3	134.1	134.5	136.5	137.0	137.8	139.7	141.3	140.8	
Electrical machinery and equipment .....	77	114.6	114.9	116.1	115.3	113.8	115.1	114.2	114.4	114.9	117.0	117.3	
Road vehicles and parts (3/80=100) .....	78	131.8	133.1	133.9	133.8	135.0	135.5	136.4	136.5	137.9	138.0	138.5	
Other transport equipment, excl. military and commercial aviation .....	79	191.7	195.5	196.6	199.3	200.7	203.3	206.8	207.4	209.7	211.4	214.7	
<b>Other manufactured articles</b> .....	8	99.3	99.5	100.4	100.3	100.3	102.6	103.4	104.1	104.3	105.3	107.3	
Apparel (9/83=100) .....	84	103.4	104.7	104.7	105.0	105.3	-	-	-	110.0	-	-	
Professional, scientific, and controlling instruments and apparatus .....	87	171.7	175.5	178.3	178.7	178.8	182.1	183.8	183.8	184.8	186.4	188.5	
Photographic apparatus and supplies, optical goods, watches and clocks (12/77=100) .....	88	130.3	128.0	129.1	127.5	128.5	131.6	132.9	132.7	132.0	133.4	133.1	
Miscellaneous manufactured articles, n.e.s. ....	89	94.1	92.4	93.1	93.1	92.4	95.6	95.6	97.6	97.7	98.1	102.1	
<b>Gold, non-monetary (6/83=100)</b> .....	971	79.5	69.1	75.4	77.4	77.5	81.8	82.2	97.5	94.5	98.2	108.4	

- Data not available.

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

(June 1977=100, unless otherwise indicated)

Category	1974 SITC	1985			1986				1987	
		June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June
<b>ALL COMMODITIES (9/82=100)</b> .....		93.0	92.9	94.2	88.5	83.2	83.9	86.0	91.6	95.3
<b>Food (9/77=100)</b> .....	0	96.8	94.9	102.8	113.4	104.7	109.1	105.3	100.2	102.0
Meat .....	01	118.2	120.6	131.2	122.7	118.5	126.9	134.4	132.1	135.9
Dairy products and eggs (6/81=100) .....	02	97.9	99.1	100.5	106.7	107.1	109.4	111.5	116.8	119.6
Fish .....	03	129.4	129.7	132.7	139.3	144.8	149.6	157.1	161.6	167.4
Bakery goods, pasta products, grain and grain preparations (9/77=100) .....	04	132.3	136.3	141.9	146.9	149.2	154.0	155.3	161.0	165.2
Fruits and vegetables .....	05	129.4	120.2	131.3	119.4	119.4	127.1	125.5	120.5	125.4
Sugar, sugar preparations, and honey (3/82=100) .....	06	122.6	123.1	111.9	124.6	121.6	123.9	124.3	126.0	128.6
Coffee, tea, cocoa .....	07	56.0	54.4	64.6	85.9	69.2	71.8	61.0	50.9	49.3
<b>Beverages and tobacco</b> .....	1	157.1	158.0	162.1	163.2	165.5	165.8	168.0	170.8	174.1
Beverages .....	11	154.3	156.0	159.1	161.8	163.9	165.5	168.2	171.5	174.6
<b>Crude materials</b> .....	2	93.6	91.5	91.2	94.2	95.3	98.1	98.5	103.1	105.6
Crude rubber (inc. synthetic & reclaimed) (3/84=100) .....	23	76.4	68.9	73.2	78.8	75.5	76.9	78.5	79.1	84.5
Wood (9/81=100) .....	24	106.9	101.6	99.4	104.3	106.3	109.4	107.2	115.0	112.0
Pulp and waste paper (12/81=100) .....	25	80.4	76.8	75.8	74.9	79.9	86.0	92.8	100.5	104.6
Crude fertilizers and crude minerals (12/83=100) .....	27	101.7	102.7	102.1	101.5	100.0	100.4	100.2	99.5	98.4
Metalliferous ores and metal scrap (3/84=100) .....	28	87.6	89.5	90.1	94.5	95.6	98.2	95.4	98.0	100.0
Crude vegetable and animal materials, n.e.s. ....	29	104.9	102.5	102.5	103.6	104.4	104.8	104.7	113.4	120.3
<b>Fuels and related products (6/82=100)</b> .....	3	80.9	79.8	79.1	55.3	37.5	33.6	38.4	49.7	54.8
Petroleum and petroleum products (6/82=100) .....	33	81.6	80.3	80.1	54.7	36.1	32.1	37.9	49.9	55.2
<b>Fats and oils (9/83=100)</b> .....	4	76.7	57.6	50.6	41.4	39.3	35.5	51.6	50.8	54.5
Vegetable oils (9/83=100) .....	42	75.9	56.2	48.9	39.3	37.4	33.5	50.0	49.2	52.6
<b>Chemicals (9/82=100)</b> .....	5	94.9	94.5	94.2	94.6	93.3	93.4	93.2	95.9	98.8
Medicinal and pharmaceutical products (3/84=100) .....	54	95.1	95.3	96.7	102.9	104.9	110.0	110.1	116.2	120.3
Manufactured fertilizers (3/84=100) .....	56	82.0	80.8	78.5	79.2	79.7	77.4	79.7	81.8	83.6
Chemical materials and products, n.e.s. (9/84=100) .....	59	95.6	96.9	97.8	99.9	100.3	101.0	102.8	104.3	105.0
<b>Intermediate manufactured products (12/77=100)</b> .....	6	132.4	133.6	133.4	134.0	135.6	138.8	139.4	142.2	147.4
Leather and furskins .....	61	133.3	137.0	141.3	141.6	143.0	147.4	143.3	149.5	156.6
Rubber manufactures, n.e.s. ....	62	138.6	137.3	138.1	136.5	137.7	138.1	138.1	140.8	140.5
Cork and wood manufactures .....	63	121.2	123.4	124.0	130.8	134.3	137.4	142.7	144.3	151.6
Paper and paperboard products .....	64	157.2	157.8	156.5	157.1	157.1	157.5	164.8	165.2	165.0
Textiles .....	65	127.5	126.5	128.1	131.2	132.9	135.1	135.3	138.8	140.4
Nonmetallic mineral manufactures, n.e.s. ....	66	151.7	157.6	162.2	164.2	169.6	178.2	180.2	183.1	190.3
Iron and steel (9/78=100) .....	67	120.1	119.1	118.3	117.3	118.1	119.0	118.5	122.3	127.1
Nonferrous metals (12/81=100) .....	68	82.3	83.7	80.4	79.4	78.9	83.5	81.6	82.4	90.9
Metal manufactures, n.e.s. ....	69	117.8	119.5	121.6	124.4	127.8	129.1	129.1	133.4	134.5
<b>Machinery and transport equipment (6/81=100)</b> .....	7	102.6	103.5	107.2	111.5	115.3	118.1	120.2	123.9	126.1
Machinery specialized for particular industries (9/78=100) .....	72	97.0	101.4	104.9	112.1	115.4	120.1	121.0	127.5	129.5
Metalworking machinery (3/80=100) .....	73	90.5	94.2	98.1	105.0	107.7	110.7	115.7	122.4	126.1
General industrial machinery and parts, n.e.s. (6/81=100) .....	74	91.1	94.3	98.0	103.8	109.0	112.8	113.9	120.5	123.0
Office machines and automatic data processing equipment (3/80=100) .....	75	89.4	90.3	93.7	96.9	101.3	102.5	102.4	103.2	106.4
Telecommunications, sound recording and reproducing apparatus (3/80=100) .....	76	88.8	88.3	88.6	89.4	91.6	93.7	93.9	94.6	95.5
Electrical machinery and equipment (12/81=100) .....	77	83.9	81.4	83.1	84.5	87.5	89.5	91.7	93.6	94.8
Road vehicles and parts (6/81=100) .....	78	112.1	112.7	117.8	123.4	127.1	129.8	133.2	137.0	139.2
<b>Misc. manufactured articles (3/80=100)</b> .....	8	98.0	99.6	100.8	103.3	104.8	109.5	109.6	114.3	118.1
Plumbing, heating, and lighting fixtures (6/80=100) .....	81	114.1	117.8	115.0	120.1	123.5	125.5	125.5	125.5	130.6
Furniture and parts (6/80=100) .....	82	136.7	142.1	142.7	147.0	142.2	145.8	146.9	148.9	153.3
Clothing (9/77=100) .....	84	133.9	134.5	134.5	133.4	135.3	137.8	139.1	145.5	150.9
Footwear .....	85	136.7	142.1	142.7	147.0	142.2	145.8	146.9	148.9	153.3
Professional, scientific, and controlling instruments and apparatus (12/79=100) .....	87	92.3	98.8	102.4	106.4	112.5	118.3	118.0	125.6	129.5
Photographic apparatus and supplies, optical goods, watches, and clocks (3/80=100) .....	88	89.5	91.1	94.5	99.3	103.2	106.9	107.6	111.8	114.4
Misc. manufactured articles, n.e.s. (6/82=100) .....	89	95.2	96.4	97.9	102.1	103.4	112.3	111.0	116.9	121.8
<b>Gold, non-monetary (6/82=100)</b> .....	971	98.3	101.1	101.0	106.7	107.3	126.9	123.3	128.0	141.5



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

(September 1983 = 100 unless otherwise indicated)

Category	Per-centage of 1980 trade value	1985			1986			1987		
		June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June
Foods, feeds, and beverages .....	16.294	80.9	76.2	77.5	75.5	74.7	66.0	68.4	67.1	71.3
Raw materials .....	30.696	97.2	96.5	95.9	96.0	94.9	93.3	94.8	98.2	103.1
Raw materials, nondurable .....	21.327	99.5	98.7	97.9	97.5	96.1	93.7	95.4	99.5	104.7
Raw materials, durable .....	9.368	91.6	91.1	91.0	92.5	91.9	92.5	93.2	95.1	99.2
Capital goods (12/82=100) .....	30.186	106.6	106.6	106.6	107.4	107.5	107.7	108.3	108.9	109.5
Automotive vehicles, parts and engines (12/82=100) .....	7.483	108.0	108.1	109.2	109.5	110.4	110.8	111.8	111.9	112.1
Consumer goods .....	7.467	101.1	101.9	101.4	103.7	104.5	104.5	105.7	106.9	107.1
Durables .....	3.965	99.2	100.4	99.5	101.8	101.8	102.1	102.7	103.9	103.6
Nondurables .....	3.501	103.0	103.3	103.3	105.5	107.2	106.9	108.5	109.8	110.5

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

(December 1982=100)

Category	Per-centage of 1980 trade value	1985			1986			1987		
		June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June
Foods, feeds, and beverages .....	7.477	100.4	99.0	106.0	115.8	108.2	112.3	109.2	104.7	106.6
Petroleum and petroleum products, excl. natural gas .....	31.108	82.1	80.9	80.5	55.4	36.8	32.6	38.3	50.5	55.8
Raw materials, excluding petroleum .....	19.205	95.8	95.4	93.9	94.5	94.0	95.3	94.9	96.9	100.5
Raw materials, nondurable .....	9.391	93.9	93.5	91.8	91.1	89.7	89.5	89.7	91.8	94.5
Raw materials, durable .....	9.814	97.8	97.4	96.2	98.1	98.7	101.4	100.3	102.3	106.8
Capital goods .....	13.164	96.3	97.6	100.0	102.8	106.7	109.4	110.7	115.3	117.8
Automotive vehicles, parts and engines .....	11.750	105.9	106.4	111.4	115.6	119.0	121.0	123.9	126.2	128.0
Consumer goods .....	14.250	99.4	101.0	102.4	104.5	106.5	110.1	110.6	114.3	117.5
Durable .....	5.507	97.0	98.9	100.7	103.4	106.5	111.2	111.6	114.8	117.5
Nondurable .....	8.743	102.5	103.9	104.7	106.0	106.6	108.6	109.2	113.7	117.6

**40. U.S. export price indexes by Standard Industrial Classification <sup>1</sup>**

Industry group	1985			1986				1987	
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June
<b>Manufacturing:</b>									
Food and kindred products (6/83=100) .....	99.5	96.7	98.1	97.0	95.0	95.2	97.6	99.0	104.1
Lumber and wood products, except furniture (6/83=100) .....	99.5	98.3	101.2	101.5	101.2	102.1	105.7	109.8	113.0
Furniture and fixtures (9/83=100) .....	106.5	107.1	108.4	109.2	109.7	110.1	110.4	113.4	114.0
Paper and allied products (3/81=100) .....	94.7	93.2	92.1	95.7	101.5	106.1	108.7	113.7	116.7
Chemicals and allied products (12/84=100) .....	99.6	99.7	99.2	98.9	98.3	96.2	95.9	100.3	106.5
Petroleum and coal products (12/83=100) .....	102.7	102.0	99.1	93.5	83.1	83.1	82.2	83.5	86.8
Primary metal products (3/82=100) .....	87.5	88.1	87.9	89.8	89.8	90.7	89.9	91.7	97.4
Machinery, except electrical (9/78=100) .....	140.5	140.6	140.5	140.6	140.3	140.5	140.7	141.0	141.4
Electrical machinery (12/80=100) .....	112.4	111.9	111.2	112.6	112.3	112.6	113.6	115.2	115.3
Transportation equipment (12/78=100) .....	161.8	162.6	164.1	165.1	167.1	167.4	169.4	170.0	171.2
Scientific instruments; optical goods; clocks (6/77=100) .....	156.6	156.2	156.7	159.7	161.2	161.5	162.3	163.3	164.6

<sup>1</sup> SIC - based classification.

**41. U.S. import price indexes by Standard Industrial Classification <sup>1</sup>**

Industry group	1985			1986				1987	
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June
<b>Manufacturing:</b>									
Food and kindred products (6/77=100) .....	115.0	114.2	115.1	117.7	115.6	118.0	122.4	122.7	125.9
Textile mill products (9/82=100) .....	101.0	100.4	101.8	104.7	106.4	107.1	108.0	111.7	113.6
Apparel and related products (6/77=100) .....	133.0	133.9	134.4	133.4	135.1	137.8	139.3	146.0	150.9
Lumber and wood products, except furniture (6/77=100) .....	120.6	117.5	115.8	122.1	124.8	127.9	127.9	134.5	135.0
Furniture and fixtures (6/80=100) .....	96.1	97.7	98.2	101.2	103.5	105.4	105.6	109.6	110.2
Paper and allied products (6/77=100) .....	139.8	138.7	137.4	137.6	139.4	142.2	150.3	154.0	155.7
Chemicals and allied products (9/82=100) .....	93.9	93.3	95.8	98.6	102.1	103.8	102.4	104.7	105.7
Rubber and miscellaneous plastic products (12/80=100) .....	96.7	96.6	97.5	100.9	100.6	101.9	102.1	104.4	105.8
Leather and leather products .....	138.9	142.3	144.0	145.8	144.6	147.7	148.7	151.8	156.2
Primary metal products (6/81=100) .....	84.1	84.3	82.6	82.0	82.4	84.9	84.0	85.4	91.3
Fabricated metal products (12/84=100) .....	99.1	101.0	102.6	104.9	108.5	110.3	111.1	115.5	116.2
Machinery, except electrical (3/80=100) .....	93.4	96.6	100.0	105.5	109.0	112.5	114.2	119.1	121.9
Electrical machinery (9/84=100) .....	95.8	94.5	95.8	97.0	100.2	102.6	104.0	105.7	106.9
Transportation equipment (6/81=100) .....	114.2	114.8	119.6	123.9	128.0	130.4	133.2	136.5	138.4
Scientific instruments; optical goods; clocks (12/79=100) .....	91.7	94.6	98.8	103.9	109.1	113.7	113.7	119.1	122.1
Miscellaneous manufactured commodities (9/82=100) .....	95.1	96.6	98.7	99.9	101.7	106.9	108.1	110.3	113.8

<sup>1</sup> SIC - based classification.

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

(1977=100)

Item	Quarterly Indexes										
	1984	1985				1986				1987	
	IV	I	II	III	IV	I	II	III	IV	I	II
<b>Business:</b>											
Output per hour of all persons .....	105.9	106.5	107.2	108.2	107.9	109.5	109.7	109.6	109.6	109.7	110.0
Compensation per hour .....	170.3	172.4	174.6	177.0	179.3	180.7	182.2	183.6	185.2	185.8	187.3
Real compensation per hour .....	98.1	98.5	98.6	99.4	99.7	100.1	101.3	101.4	101.6	100.7	100.3
Unit labor costs .....	160.8	161.9	162.8	163.6	166.1	165.0	166.2	167.5	169.0	169.4	170.2
Unit nonlabor payments .....	157.9	158.7	160.4	161.8	160.2	163.1	163.9	165.7	162.4	166.0	169.1
Implicit price deflator .....	159.8	160.8	162.0	163.0	164.0	164.3	165.4	166.9	166.7	168.2	169.8
<b>Nonfarm business:</b>											
Output per hour of all persons .....	104.8	105.2	105.7	106.4	105.9	107.7	107.7	107.5	107.5	107.6	107.9
Compensation per hour .....	170.2	172.2	174.1	176.2	178.3	180.0	181.3	182.6	184.4	184.9	186.3
Real compensation per hour .....	98.0	98.4	98.3	98.9	99.2	99.7	100.8	100.9	101.2	100.2	99.7
Unit labor costs .....	162.4	163.6	164.7	165.7	168.3	167.2	168.4	169.8	171.5	171.8	172.6
Unit nonlabor payments .....	158.5	159.5	161.5	163.4	160.8	164.7	165.2	167.0	163.9	167.4	169.3
Implicit price deflator .....	161.0	162.2	163.6	164.9	165.7	166.4	167.3	168.8	168.8	170.3	171.4
<b>Nonfinancial corporations:</b>											
Output per hour of all employees .....	106.4	107.0	107.7	109.2	108.9	109.8	109.7	109.9	110.5	109.7	110.0
Compensation per hour .....	168.1	169.9	171.8	173.8	175.7	177.2	178.4	179.5	181.0	180.8	182.0
Real compensation per hour .....	96.8	97.0	97.0	97.6	97.7	98.2	99.1	99.2	99.3	98.0	97.4
Total unit costs .....	162.8	163.6	164.3	163.7	166.0	166.3	167.2	168.5	168.7	169.7	170.7
Unit labor costs .....	158.0	158.9	159.5	159.1	161.4	161.5	162.6	163.2	163.8	164.8	165.4
Unit nonlabor costs .....	176.8	177.5	178.7	177.5	179.4	180.7	180.6	184.2	183.2	184.1	186.4
Unit profits .....	134.2	132.0	132.2	142.5	128.7	129.7	129.5	130.6	127.7	132.2	131.8
Unit nonlabor payments .....	161.9	161.6	162.5	165.2	161.6	162.8	162.7	165.4	163.7	165.9	167.3
Implicit price deflator .....	159.4	159.8	160.5	161.2	161.5	161.9	162.7	164.0	163.8	165.2	166.0
<b>Manufacturing:</b>											
Output per hour of all persons .....	120.0	121.5	124.0	125.2	126.0	127.6	128.3	129.4	129.9	131.0	132.6
Compensation per hour .....	171.1	173.3	176.1	178.0	180.2	181.0	182.1	183.1	184.3	183.9	184.7
Real compensation per hour .....	98.5	99.0	99.5	99.9	100.2	100.3	101.2	101.2	101.2	99.6	98.9
Unit labor costs .....	142.5	142.7	142.0	142.1	143.0	141.9	142.0	141.5	141.9	140.4	139.3



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

(1977 = 100)

Item	1960	1970	1973	1975	1977	1979	1980	1981	1982	1983	1984	1985
<b>Private business</b>												
Productivity:												
Output per hour of all persons .....	67.3	88.4	95.9	95.7	100.0	99.5	99.2	100.6	100.3	103.0	105.4	106.5
Output per unit of capital services .....	102.4	102.0	105.3	93.8	100.0	99.8	94.2	92.4	86.6	88.3	92.4	91.5
Multifactor productivity .....	78.2	92.9	99.1	95.0	100.0	99.7	97.4	97.7	95.2	97.6	100.6	101.0
Output .....	55.3	80.2	93.0	89.3	100.0	107.9	106.6	108.9	105.4	109.9	118.9	122.8
Inputs:												
Hours of all persons .....	82.2	90.8	96.9	93.2	100.0	108.4	107.5	108.2	105.2	106.7	112.8	115.3
Capital services .....	54.0	78.7	88.3	95.1	100.0	108.0	113.1	117.8	121.7	124.4	128.7	134.1
Combined units of labor and capital input .....	70.7	86.3	93.8	93.9	100.0	108.2	109.4	111.5	110.7	112.6	118.1	121.6
Capital per hour of all persons .....	65.7	86.7	91.1	102.0	100.0	99.7	105.3	108.8	115.7	116.7	114.1	116.3
<b>Private nonfarm business</b>												
Productivity:												
Output per hour of all persons .....	70.7	89.2	96.4	96.0	100.0	99.2	98.7	99.6	99.1	102.4	104.3	104.8
Output per unit of capital services .....	103.7	102.8	106.0	93.8	100.0	99.0	93.4	91.1	85.1	87.3	90.9	89.7
Multifactor productivity .....	80.9	93.7	99.6	95.3	100.0	99.1	96.9	96.7	94.1	97.0	99.6	99.4
Output .....	54.4	79.9	92.9	88.9	100.0	107.9	106.6	108.4	104.8	110.0	118.9	122.5
Inputs:												
Hours of all persons .....	77.0	89.6	96.3	92.6	100.0	108.8	108.0	108.8	105.7	107.4	114.0	116.9
Capital services .....	52.5	77.7	87.6	94.8	100.0	109.0	114.1	119.0	123.2	126.1	130.8	136.6
Combined units of labor and capital input .....	67.3	85.3	93.3	93.4	100.0	108.9	110.0	112.2	111.4	113.5	119.4	123.3
Capital per hour of all persons .....	68.2	86.8	91.0	102.3	100.0	100.1	105.6	109.4	116.5	117.4	114.7	116.8
<b>Manufacturing</b>												
Productivity:												
Output per hour of all persons .....	62.2	80.8	93.4	92.9	100.0	101.4	101.4	103.6	105.9	112.0	116.6	121.7
Output per unit of capital services .....	102.5	98.6	111.4	90.1	100.0	99.7	91.2	89.2	81.8	86.9	94.4	96.0
Multifactor productivity .....	71.9	85.2	97.9	92.0	100.0	101.0	98.7	99.8	99.2	105.1	110.7	114.7
Output .....	52.5	78.6	96.3	84.9	100.0	108.1	103.2	104.8	98.4	104.7	116.0	120.4
Inputs:												
Hours of all persons .....	84.4	97.3	103.1	91.4	100.0	106.5	101.7	101.1	92.9	93.5	99.5	98.9
Capital services .....	51.2	79.7	86.4	94.2	100.0	108.4	113.1	117.5	120.3	120.6	122.9	125.4
Combined units of labor and capital inputs .....	73.0	92.2	98.4	92.2	100.0	107.0	104.5	105.0	99.2	99.7	104.8	105.0
Capital per hour of all persons .....	60.7	82.0	83.8	103.1	100.0	101.7	111.2	116.2	129.4	129.0	123.6	126.7

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

(1977 = 100)

Item	1960	1970	1973	1975	1977	1979	1980	1981	1982	1983	1984	1985	1986
<b>Business:</b>													
Output per hour of all persons .....	67.6	88.4	95.9	95.7	100.0	99.6	99.3	100.7	100.3	103.0	105.6	107.5	109.5
Compensation per hour .....	33.6	57.8	70.9	85.2	100.0	119.1	131.5	143.7	154.9	161.5	168.0	175.9	182.8
Real compensation per hour .....	68.9	90.2	96.7	95.9	100.0	99.4	96.7	95.7	97.3	98.2	98.0	99.1	101.0
Unit labor costs .....	49.7	65.4	73.9	89.0	100.0	119.5	132.5	142.7	154.5	156.7	159.1	163.6	166.9
Unit nonlabor payments .....	46.4	59.4	72.5	88.2	100.0	112.5	118.7	134.6	136.6	146.4	156.5	160.3	163.8
Implicit price deflator .....	48.5	63.2	73.4	88.7	100.0	117.0	127.6	139.8	148.1	153.0	158.2	162.4	165.8
<b>Nonfarm business:</b>													
Output per hour of all persons .....	71.0	89.3	96.4	96.0	100.0	99.3	98.8	99.8	99.2	102.5	104.6	105.8	107.5
Compensation per hour .....	35.3	58.2	71.2	85.6	100.0	118.9	131.3	143.6	154.8	161.5	167.8	175.2	182.0
Real compensation per hour .....	72.3	90.8	97.1	96.4	100.0	99.2	96.6	95.7	97.2	98.2	97.9	98.7	100.6
Unit labor costs .....	49.7	65.2	73.9	89.2	100.0	119.7	132.9	144.0	156.0	157.6	160.4	165.6	169.3
Unit nonlabor payments .....	46.3	60.0	69.3	86.7	100.0	110.5	118.5	133.5	136.5	148.3	156.4	161.3	165.2
Implicit price deflator .....	48.5	63.4	72.3	88.3	100.0	116.5	127.8	140.3	149.2	154.3	159.0	164.1	167.8
<b>Nonfinancial corporations:</b>													
Output per hour of all employees .....	73.4	91.1	97.5	96.7	100.0	99.8	99.1	99.6	100.4	103.5	106.0	108.2	109.9
Compensation per hour .....	36.9	59.2	71.6	85.9	100.0	118.7	131.1	143.3	154.3	159.9	165.8	172.8	178.9
Real compensation per hour .....	75.5	92.4	97.6	96.7	100.0	99.1	96.4	95.5	96.9	97.3	96.7	97.4	98.9
Total unit costs .....	49.4	64.8	72.7	90.3	100.0	118.2	133.4	147.7	159.5	159.5	160.8	164.4	167.7
Unit labor costs .....	50.2	65.0	73.4	88.8	100.0	119.0	132.3	143.8	153.8	154.5	156.5	159.7	162.8
Unit nonlabor costs .....	47.0	64.2	70.7	94.9	100.0	115.8	136.7	159.1	176.4	174.3	173.6	178.3	182.2
Unit profits .....	59.8	52.3	65.6	77.0	100.0	94.5	85.2	98.1	78.5	110.9	136.5	133.9	129.3
Unit nonlabor payments .....	51.5	60.1	68.9	88.6	100.0	108.4	118.6	137.8	142.1	152.1	160.6	162.7	163.7
Implicit price deflator .....	50.7	63.3	71.9	88.7	100.0	115.4	127.6	141.7	149.8	153.7	157.9	160.7	163.1
<b>Manufacturing:</b>													
Output per hour of all persons .....	62.2	80.8	93.4	92.9	100.0	101.4	101.4	103.6	105.9	112.0	118.1	124.2	128.8
Compensation per hour .....	36.5	57.4	68.8	85.1	100.0	118.6	132.4	145.2	157.5	162.4	168.0	176.9	182.7
Real compensation per hour .....	74.8	89.5	93.8	95.9	100.0	99.1	97.4	96.7	98.9	98.8	98.0	99.6	100.9
Unit labor costs .....	58.7	71.0	73.7	91.7	100.0	117.0	130.6	140.1	148.7	145.0	142.2	142.4	141.8
Unit nonlabor payments .....	60.0	64.1	70.7	87.5	100.0	98.9	97.8	111.8	114.0	128.5	138.6	134.7	137.9
Implicit price deflator .....	59.1	69.0	72.8	90.5	100.0	111.7	121.0	131.8	138.6	140.2	141.2	140.2	140.7

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

Country	Annual average		1985	1986				1987	
	1985	1986	IV	I	II	III	IV	I	II
<b>Total labor force basis</b>									
United States .....	7.1	6.9	7.0	7.0	7.0	6.8	6.8	6.6	6.1
Canada .....	10.4	9.5	10.1	9.7	9.5	9.6	9.4	9.6	9.0
Australia .....	8.2	8.0	7.8	7.9	7.7	8.2	8.3	8.3	8.1
Japan .....	2.6	2.8	2.8	2.7	2.8	2.9	2.9	3.0	3.1
France .....	10.2	10.4	10.2	10.2	10.4	10.6	10.6	11.0	11.0
Germany .....	7.7	7.4	7.7	7.6	7.5	7.4	7.2	7.3	7.4
Italy <sup>1, 2</sup> .....	5.9	6.2	6.1	6.1	6.2	5.9	6.5	6.6	6.6
Sweden .....	2.8	2.6	2.7	2.7	2.6	2.6	2.6	2.0	1.9
United Kingdom .....	11.2	11.1	11.0	11.1	11.2	11.1	10.9	10.6	10.2
<b>Civilian labor force basis</b>									
United States .....	7.2	7.0	7.1	7.1	7.1	6.9	6.9	6.7	6.2
Canada .....	10.5	9.6	10.1	9.7	9.6	9.7	9.4	9.6	9.1
Australia .....	8.3	8.1	7.9	8.0	7.8	8.3	8.4	8.3	8.2
Japan .....	2.6	2.8	2.8	2.7	2.8	2.9	2.9	3.0	3.1
France .....	10.4	10.7	10.4	10.5	10.7	10.8	10.8	11.2	11.3
Germany .....	7.9	7.6	7.8	7.8	7.7	7.5	7.4	7.4	7.5
Italy <sup>1, 2</sup> .....	6.0	6.3	6.2	6.2	6.3	6.0	6.6	6.7	6.7
Sweden .....	2.8	2.7	2.7	2.8	2.6	2.6	2.6	2.0	1.9
United Kingdom .....	11.2	11.1	11.1	11.2	11.2	11.2	10.9	10.7	10.3

<sup>1</sup> Quarterly rates are for the first month of the quarter.

<sup>2</sup> Major changes in the Italian labor force survey, introduced in 1977, resulted in a large increase in persons enumerated as unemployed. However, many persons reported that they had not actively sought work in the past 30 days, and they have been provisionally excluded for comparability with U.S. concepts. Inclusion of such persons would about

double the Italian unemployment rate shown.

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



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

(Numbers in thousands)

Employment status and country	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
<b>Labor force</b>										
United States .....	99,009	102,251	104,962	106,940	108,670	110,204	111,550	113,544	115,461	117,834
Canada .....	10,500	10,895	11,231	11,573	11,904	11,958	12,183	12,399	12,639	12,870
Australia .....	6,358	6,443	6,519	6,693	6,810	6,910	6,997	7,133	7,272	7,562
Japan .....	53,820	54,610	55,210	55,740	56,320	56,980	58,110	58,480	58,820	59,410
France .....	22,300	22,460	22,670	22,800	22,930	23,160	23,130	23,290	23,340	23,480
Germany .....	25,870	26,000	26,250	26,520	26,650	26,710	26,740	26,890	27,090	27,280
Italy .....	20,510	20,570	20,850	21,120	21,320	21,410	21,590	21,670	21,800	21,990
Netherlands .....	4,950	5,010	5,100	5,310	5,520	5,570	5,600	5,620	5,710	-
Sweden .....	4,168	4,203	4,262	4,312	4,327	4,350	4,369	4,385	4,418	4,437
United Kingdom .....	26,050	26,260	26,350	26,520	26,590	26,740	26,790	27,180	27,370	27,460
<b>Participation rate<sup>1</sup></b>										
United States .....	62.3	63.2	63.7	63.8	63.9	64.0	64.0	64.4	64.8	65.3
Canada .....	61.6	62.7	63.4	64.1	64.8	64.1	64.4	64.8	65.2	65.7
Australia .....	62.7	61.9	61.6	62.1	61.9	61.7	61.4	61.5	61.8	63.0
Japan .....	62.5	62.8	62.7	62.6	62.6	62.7	63.1	62.7	62.3	62.1
France .....	57.6	57.5	57.5	57.2	57.1	57.1	56.6	56.6	56.2	56.2
Germany .....	53.4	53.3	53.3	53.2	52.9	52.7	52.5	52.6	52.8	53.2
Italy .....	48.2	47.8	48.0	48.2	48.3	47.7	47.5	47.3	47.2	47.5
Netherlands .....	49.0	48.8	49.0	50.2	51.4	51.2	50.9	50.5	50.7	-
Sweden .....	65.9	66.1	66.6	66.9	66.8	66.8	66.7	66.6	66.9	67.2
United Kingdom .....	62.7	62.8	62.6	62.5	62.2	62.3	62.1	62.6	62.7	62.5
<b>Employed</b>										
United States .....	92,017	96,048	98,824	99,303	100,397	99,526	100,834	105,005	107,150	109,597
Canada .....	9,651	9,987	10,395	10,708	11,006	10,644	10,734	11,000	11,311	11,634
Australia .....	6,000	6,038	6,111	6,284	6,416	6,415	6,300	6,490	6,670	6,952
Japan .....	52,720	53,370	54,040	54,600	55,060	55,620	56,550	56,870	57,260	57,740
France .....	21,180	21,250	21,300	21,330	21,200	21,240	21,170	20,980	20,900	20,970
Germany .....	24,970	25,130	25,470	25,750	25,560	25,130	24,750	24,800	24,960	25,210
Italy .....	19,670	19,720	19,930	20,200	20,280	20,250	20,320	20,390	20,490	20,610
Netherlands .....	4,700	4,750	4,830	4,980	5,010	4,980	4,890	4,930	5,110	-
Sweden .....	4,093	4,109	4,174	4,226	4,219	4,213	4,218	4,249	4,293	4,319
United Kingdom .....	24,400	24,610	24,940	24,670	23,800	23,710	23,600	24,000	24,300	24,400
<b>Employment-population ratio<sup>2</sup></b>										
United States .....	57.9	59.3	59.9	59.2	59.0	57.8	57.9	59.5	60.1	60.7
Canada .....	56.6	57.5	58.7	59.3	59.9	57.0	56.7	57.4	58.4	59.4
Australia .....	59.2	58.0	57.8	58.3	58.4	57.3	55.3	56.0	56.6	57.9
Japan .....	61.2	61.3	61.4	61.3	61.2	61.2	61.4	61.0	60.6	60.4
France .....	54.7	54.4	54.0	53.5	52.8	52.3	51.8	51.0	50.4	50.2
Germany .....	51.6	51.5	51.7	51.7	50.8	49.6	48.6	48.5	48.7	49.1
Italy .....	46.3	45.9	45.9	46.1	45.9	45.2	44.7	44.5	44.4	44.6
Netherlands .....	46.5	46.3	46.4	47.0	46.6	45.8	44.5	44.3	45.7	-
Sweden .....	64.8	64.6	65.3	65.6	65.1	64.7	64.4	64.5	65.0	65.4
United Kingdom .....	58.7	58.8	59.2	58.1	55.7	55.3	54.7	55.3	55.7	55.6
<b>Unemployed</b>										
United States .....	6,991	6,202	6,137	7,637	8,273	10,678	10,717	8,539	8,312	8,237
Canada .....	849	908	836	865	898	1,314	1,448	1,399	1,328	1,236
Australia .....	358	405	408	409	394	495	697	642	602	610
Japan .....	1,100	1,240	1,170	1,140	1,260	1,360	1,560	1,610	1,560	1,670
France .....	1,120	1,210	1,370	1,470	1,730	1,920	1,960	2,310	2,440	2,510
Germany .....	900	870	780	770	1,090	1,580	1,990	2,090	2,130	2,070
Italy .....	840	850	920	920	1,040	1,160	1,270	1,280	1,310	1,380
Netherlands .....	250	260	270	330	510	590	710	690	600	-
Sweden .....	75	94	88	86	108	137	151	136	125	118
United Kingdom .....	1,660	1,650	1,420	1,850	2,790	3,030	3,190	3,180	3,070	3,060
<b>Unemployment rate</b>										
United States .....	7.1	6.1	5.8	7.1	7.6	9.7	9.6	7.5	7.2	7.0
Canada .....	8.1	8.3	7.4	7.5	7.5	11.0	11.9	11.3	10.5	9.6
Australia .....	5.6	6.3	6.3	6.1	5.8	7.2	10.0	9.0	8.3	8.1
Japan .....	2.0	2.3	2.1	2.0	2.2	2.4	2.7	2.8	2.6	2.8
France .....	5.0	5.4	6.0	6.4	7.5	8.3	8.5	9.9	10.4	10.7
Germany .....	3.5	3.3	3.0	2.9	4.1	5.9	7.4	7.8	7.9	7.6
Italy .....	4.1	4.1	4.4	4.4	4.9	5.4	5.9	5.9	6.0	6.3
Netherlands .....	5.1	5.2	5.3	6.2	9.2	10.6	12.7	12.3	10.5	-
Sweden .....	1.8	2.2	2.1	2.0	2.5	3.1	3.5	3.1	2.8	2.7
United Kingdom .....	6.4	6.3	5.4	7.0	10.5	11.3	11.9	11.7	11.2	11.1

<sup>1</sup> Labor force as a percent of the civilian working-age population.  
<sup>2</sup> Employment as a percent of the civilian working-age population.

- Data not available.

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

(1977=100)

Item and country	1960	1970	1973	1974	1975	1976	1978	1979	1980	1981	1982	1983	1984	1985	1986
<b>Output per hour</b>															
United States .....	62.2	80.8	93.4	90.6	92.9	97.1	101.5	101.4	101.4	103.6	105.9	112.0	116.6	121.7	126.0
Canada .....	50.7	75.6	90.3	91.7	88.6	94.8	101.1	102.0	98.2	102.9	100.4	106.9	110.2	112.7	112.1
Japan .....	23.2	64.8	83.1	86.5	87.7	94.3	108.0	114.8	122.7	127.2	135.0	142.3	152.5	163.7	168.2
Belgium .....	32.8	59.9	78.2	82.6	85.9	95.1	106.3	112.3	119.7	128.1	135.7	144.7	149.8	153.3	-
Denmark .....	37.2	65.5	83.2	86.0	94.6	98.2	101.5	106.5	112.3	114.2	114.6	120.2	118.9	117.2	116.6
France .....	36.4	69.6	82.2	85.2	88.5	95.0	105.7	110.3	112.0	116.4	123.5	128.8	133.8	138.3	140.9
Germany .....	40.3	71.2	84.0	87.4	90.1	96.5	103.1	108.2	108.6	111.0	112.6	119.1	123.5	128.9	131.4
Italy .....	36.5	72.7	90.9	95.3	91.1	98.9	103.0	110.5	116.9	121.0	123.4	126.6	134.7	136.8	138.4
Netherlands .....	32.4	64.3	81.5	88.1	86.2	95.8	106.4	112.3	113.9	116.9	119.4	127.5	141.2	145.6	-
Norway .....	54.6	81.7	94.6	97.7	96.8	99.7	101.8	107.1	106.7	107.0	109.8	117.2	123.9	125.2	122.1
Sweden .....	42.3	80.7	94.8	98.8	100.2	101.7	102.8	110.9	112.7	113.2	116.5	125.5	131.0	134.5	136.4
United Kingdom .....	55.5	79.7	95.6	97.4	95.2	99.5	101.5	102.4	101.7	107.0	113.6	123.0	129.5	134.2	138.2
<b>Output</b>															
United States .....	52.5	78.6	96.3	91.7	84.9	93.1	106.0	108.1	103.2	104.8	98.4	104.7	116.0	120.4	124.4
Canada .....	41.3	73.5	93.5	96.3	89.9	96.5	104.6	108.5	103.6	107.4	95.6	101.0	108.4	113.6	115.4
Japan .....	19.2	69.9	91.9	91.7	86.2	94.8	106.7	113.9	124.1	129.8	137.3	148.2	165.4	179.3	182.1
Belgium .....	41.6	78.0	95.7	99.5	92.0	99.4	101.6	104.4	107.3	106.0	110.5	112.1	114.1	115.1	-
Denmark .....	49.2	82.0	95.9	97.4	95.0	99.6	99.7	105.4	110.1	106.6	108.3	115.6	120.0	123.6	127.0
France .....	35.4	73.3	88.6	91.8	90.0	96.1	103.4	106.1	106.6	105.9	106.0	107.4	108.4	108.6	108.1
Germany .....	50.0	86.6	96.1	95.4	91.0	98.0	101.8	106.6	106.6	104.9	102.4	103.6	106.4	111.7	114.5
Italy .....	37.4	78.0	90.5	96.3	86.9	97.9	101.8	108.6	115.4	114.3	111.6	109.2	113.7	115.5	119.3
Netherlands .....	44.8	84.4	95.8	100.0	92.7	99.0	102.8	106.1	106.6	106.7	105.0	107.0	112.9	115.3	-
Norway .....	55.1	86.9	99.5	104.0	101.0	101.4	98.2	100.3	98.8	97.7	97.4	97.2	102.6	105.2	107.0
Sweden .....	52.6	92.5	100.3	105.7	106.1	106.1	97.3	103.6	104.0	100.6	100.1	105.2	111.5	113.8	114.4
United Kingdom .....	71.2	95.0	104.8	103.5	96.3	98.2	100.6	100.5	91.7	86.2	86.4	88.9	92.4	95.2	96.0
<b>Total hours</b>															
United States .....	84.4	97.3	103.1	101.2	91.4	95.9	104.4	106.5	101.7	101.1	92.9	93.5	99.5	98.9	98.7
Canada .....	81.4	97.2	103.6	105.0	101.5	101.8	103.4	106.3	105.5	104.3	95.1	94.5	98.3	100.8	103.0
Japan .....	82.7	107.9	110.7	106.1	98.2	100.6	98.8	99.3	101.2	102.0	101.7	104.2	108.5	109.6	108.3
Belgium .....	127.1	130.2	122.3	120.4	107.1	104.6	95.5	93.0	89.6	82.8	81.4	77.5	76.2	75.1	-
Denmark .....	132.4	125.1	115.2	113.2	100.4	101.4	98.3	99.0	98.1	93.4	94.5	96.2	101.0	105.5	108.9
France .....	97.2	105.3	107.8	107.8	101.7	101.2	97.8	96.2	95.2	91.0	85.8	83.4	81.0	78.5	76.7
Germany .....	123.8	121.7	114.4	109.2	101.0	101.6	98.7	98.5	98.1	94.6	91.0	87.0	86.2	86.7	87.2
Italy .....	102.3	107.4	99.6	101.0	95.4	99.0	98.8	98.2	98.7	94.5	90.4	86.2	84.4	84.4	86.2
Netherlands .....	138.4	131.2	117.6	113.5	107.6	103.3	96.6	94.4	93.6	91.2	88.0	83.9	79.9	79.2	-
Norway .....	101.0	106.4	105.1	106.5	104.3	101.7	96.5	93.6	92.6	91.3	88.6	82.9	82.8	84.0	87.6
Sweden .....	124.4	114.6	105.7	107.0	105.9	104.3	94.6	93.4	92.3	88.9	85.9	83.9	85.1	84.6	83.9
United Kingdom .....	128.3	119.1	109.5	106.3	101.2	98.7	99.1	98.1	90.2	80.6	76.1	72.3	71.3	71.0	69.5
<b>Compensation per hour</b>															
United States .....	36.5	57.4	68.8	76.2	85.1	92.1	108.2	118.6	132.4	145.2	157.5	162.4	168.2	176.7	181.9
Canada .....	27.5	47.9	60.3	69.1	78.9	90.3	107.6	118.6	131.3	151.1	167.3	177.4	188.0	195.9	202.2
Japan .....	8.9	33.9	55.1	72.3	84.2	90.7	106.6	113.4	120.7	129.8	136.6	140.7	144.9	152.0	157.3
Belgium .....	13.8	34.9	53.5	65.2	79.0	89.5	107.8	117.5	130.4	144.5	150.7	159.8	173.1	183.7	-
Denmark .....	12.6	36.3	56.1	67.9	81.0	90.4	110.2	123.1	135.9	149.6	162.9	174.2	184.3	194.4	202.6
France .....	15.1	36.6	52.3	62.0	76.7	88.9	113.5	129.3	148.2	171.5	202.3	227.0	246.9	262.5	274.0
Germany .....	18.8	48.0	67.5	76.9	84.5	91.3	107.8	116.1	125.6	134.5	141.0	148.4	155.5	162.8	171.0
Italy .....	8.3	26.1	43.7	54.5	70.2	84.2	114.5	134.7	160.2	197.1	237.3	276.4	307.4	339.5	353.9
Netherlands .....	12.5	39.0	60.5	71.9	82.2	91.9	108.4	117.0	123.6	129.1	137.5	144.0	151.0	159.0	-
Norway .....	15.8	37.9	54.5	63.6	77.2	88.8	110.0	116.0	128.0	142.8	156.0	173.5	188.3	204.8	220.5
Sweden .....	14.7	38.5	54.2	63.8	77.3	91.5	111.4	120.1	133.6	148.1	158.9	173.3	189.7	208.9	223.1
United Kingdom .....	15.2	31.5	48.3	57.7	77.3	89.3	116.4	138.8	168.3	192.5	212.3	227.7	243.9	261.3	282.4
<b>Unit labor costs: National currency basis</b>															
United States .....	58.7	71.0	73.7	84.1	91.7	94.9	106.6	117.0	130.6	140.1	148.7	145.0	144.2	145.1	144.3
Canada .....	54.2	63.4	66.8	75.3	89.1	95.3	106.5	116.2	133.7	146.7	166.5	166.0	170.6	173.8	180.4
Japan .....	38.4	52.3	66.4	83.6	96.0	96.2	98.7	98.8	98.4	102.0	101.2	98.9	95.0	92.9	93.5
Belgium .....	42.0	58.2	68.4	78.9	91.9	94.2	101.4	104.7	109.0	112.8	111.1	110.5	115.6	119.8	-
Denmark .....	33.8	55.4	67.4	79.0	85.6	92.1	108.6	115.7	121.0	131.1	142.2	144.9	155.1	166.0	173.8
France .....	41.6	52.6	63.6	72.8	86.7	93.6	107.4	117.3	132.3	147.4	163.8	176.2	184.5	189.8	194.4
Germany .....	46.6	67.4	80.3	88.0	93.8	94.6	104.5	107.3	115.7	121.2	125.2	124.6	125.9	126.3	130.2
Italy .....	22.8	36.0	48.1	57.2	77.1	85.1	111.2	121.9	137.0	162.9	192.4	218.3	228.2	248.2	255.7
Netherlands .....	38.5	60.7	74.3	81.6	95.4	96.0	101.8	104.1	108.5	110.4	115.2	113.0	106.9	109.2	-
Norway .....	29.0	46.4	57.6	65.2	79.7	89.1	108.1	108.2	120.0	133.4	142.1	148.0	152.0	163.5	180.5
Sweden .....	34.8	47.7	57.2	64.6	77.1	90.0	108.4	108.3	118.6	130.9	136.3	138.1	144.8	155.3	163.6
United Kingdom .....	27.4	39.5	50.5	59.3	81.2	89.8	114.7	135.5	165.4	179.9	186.9	185.1	188.4	194.7	204.4
<b>Unit labor costs: U.S. dollar basis</b>															
United States .....	58.7	71.0	73.7	84.1	91.7	94.9	106.6	117.0	130.6	140.1	148.7	145.0	144.2	145.1	144.3
Canada .....	59.4	64.5	71.0	81.8	93.1	102.7	99.3	105.4	121.5	130.0	143.4	143.1	139.9	135.2	137.9
Japan .....	28.5	39.1	65.6	76.8	86.7	86.9	126.8	121.3	116.8	123.8	108.8	111.5	107.2	104.3	148.7
Belgium .....	30.2	42.0	63.1	72.7	89.7	87.5	115.6	127.9	133.7	109.2	86.9	77.4	71.7	72.3	-
Denmark .....	29.5	44.4	67.2	77.9	89.6	91.5	118.4	132.0	129.0	110.3	102.3	95.1	89.9	94.0	128.9
France .....	41.7	46.8	70.4	74.5	99.5	98.3	117.3	135.5	154.1	133.2	122.4	113.7	103.8	103.9	138.0
Germany .....	25.9	42.9	70.4	79.1	88.7	87.3	121.0	135.9	147.9	124.9	119.7	113.3	102.7	99.6	139.2
Italy .....	32.5	50.6	73.1	77.6	104.3	90.5	115.6	129.5	141.4	126.3	125.4	126.8	114.7	114.8	151.4
Netherlands .....	25.1	41.2	65.6	74.6	92.8	89.1	115.7	127.4	134.2	108.9	105.8	97.1	8		

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

Industry and type of case <sup>1</sup>	Incidence rates per 100 full-time workers <sup>2</sup>								
	1977	1978	1979	1980	1981	1982	1983	1984	1985
<b>PRIVATE SECTOR<sup>3</sup></b>									
Total cases .....	9.3	9.4	9.5	8.7	8.3	7.7	7.6	8.0	7.9
Lost workday cases .....	3.8	4.1	4.3	4.0	3.8	3.5	3.4	3.7	3.6
Lost workdays .....	61.6	63.5	67.7	65.2	61.7	58.7	58.5	63.4	64.9
<b>Agriculture, forestry, and fishing<sup>3</sup></b>									
Total cases .....	11.5	11.6	11.7	11.9	12.3	11.8	11.9	12.0	11.4
Lost workday cases .....	5.1	5.4	5.7	5.8	5.9	5.9	6.1	6.1	5.7
Lost workdays .....	81.1	80.7	83.7	82.7	82.8	86.0	90.8	90.7	91.3
<b>Mining</b>									
Total cases .....	10.9	11.5	11.4	11.2	11.6	10.5	8.4	9.7	8.4
Lost workday cases .....	6.0	6.4	6.8	6.5	6.2	5.4	4.5	5.3	4.8
Lost workdays .....	128.8	143.2	150.5	163.6	146.4	137.3	125.1	160.2	145.3
<b>Construction</b>									
Total cases .....	15.5	16.0	16.2	15.7	15.1	14.6	14.8	15.5	15.2
Lost workday cases .....	5.9	6.4	6.8	6.5	6.3	6.0	6.3	6.9	6.8
Lost workdays .....	111.5	109.4	120.4	117.0	113.1	115.7	118.2	128.1	128.9
General building contractors:									
Total cases .....	15.0	15.9	16.3	15.5	15.1	14.1	14.4	15.4	15.2
Lost workday cases .....	5.7	6.3	6.8	6.5	6.1	5.9	6.2	6.9	6.8
Lost workdays .....	100.2	105.3	111.2	113.0	107.1	112.0	113.0	121.3	120.4
Heavy construction contractors:									
Total cases .....	16.0	16.6	16.6	16.3	14.9	15.1	15.4	14.9	14.5
Lost workday cases .....	5.7	6.2	6.7	6.3	6.0	5.8	6.2	6.4	6.3
Lost workdays .....	116.7	110.9	123.1	117.6	106.0	113.1	122.4	131.7	127.3
Special trade contractors:									
Total cases .....	15.6	15.8	16.0	15.5	15.2	14.7	14.8	15.8	15.4
Lost workday cases .....	6.1	6.6	6.9	6.7	6.6	6.2	6.4	7.1	7.0
Lost workdays .....	115.5	111.0	124.3	118.9	119.3	118.6	119.0	130.1	133.3
<b>Manufacturing</b>									
Total cases .....	13.1	13.2	13.3	12.2	11.5	10.2	10.0	10.6	10.4
Lost workday cases .....	5.1	5.6	5.9	5.4	5.1	4.4	4.3	4.7	4.6
Lost workdays .....	82.3	84.9	90.2	86.7	82.0	75.0	73.5	77.9	80.2
<b>Durable goods</b>									
Lumber and wood products:									
Total cases .....	22.3	22.6	20.7	18.6	17.6	16.9	18.3	19.6	18.5
Lost workday cases .....	10.4	11.1	10.8	9.5	9.0	8.3	9.2	9.9	9.3
Lost workdays .....	178.0	178.8	175.9	171.8	158.4	153.3	163.5	172.0	171.4
Furniture and fixtures:									
Total cases .....	17.2	17.5	17.6	16.0	15.1	13.9	14.1	15.3	15.0
Lost workday cases .....	6.0	6.9	7.1	6.6	6.2	5.5	5.7	6.4	6.3
Lost workdays .....	92.0	95.9	99.6	97.6	91.9	85.6	83.0	101.5	100.4
Stone, clay, and glass products:									
Total cases .....	16.9	16.8	16.8	15.0	14.1	13.0	13.1	13.6	13.9
Lost workday cases .....	6.9	7.8	8.0	7.1	6.9	6.1	6.0	6.6	6.7
Lost workdays .....	120.4	126.3	133.7	128.1	122.2	112.2	112.0	120.8	127.8
Primary metal industries:									
Total cases .....	16.2	17.0	17.3	15.2	14.4	12.4	12.4	13.3	12.6
Lost workday cases .....	6.8	7.5	8.1	7.1	6.7	5.4	5.4	6.1	5.7
Lost workdays .....	119.4	123.6	134.7	128.3	121.3	101.6	103.4	115.3	113.8
Fabricated metal products:									
Total cases .....	19.1	19.3	19.9	18.5	17.5	15.3	15.1	16.1	16.3
Lost workday cases .....	7.2	8.0	8.7	8.0	7.5	6.4	6.1	6.7	6.9
Lost workdays .....	109.0	112.4	124.2	118.4	109.9	102.5	96.5	104.9	110.1
Machinery, except electrical:									
Total cases .....	14.0	14.4	14.7	13.7	12.9	10.7	9.8	10.7	10.8
Lost workday cases .....	4.7	5.4	5.9	5.5	5.1	4.2	3.6	4.1	4.2
Lost workdays .....	69.9	75.1	83.6	81.3	74.9	66.0	58.1	65.8	69.3
Electric and electronic equipment:									
Total cases .....	8.6	8.7	8.6	8.0	7.4	6.5	6.3	6.8	6.4
Lost workday cases .....	3.0	3.3	3.4	3.3	3.1	2.7	2.6	2.8	2.7
Lost workdays .....	46.7	50.3	51.9	51.8	48.4	42.2	41.4	45.0	45.7
Transportation equipment:									
Total cases .....	11.8	11.5	11.6	10.6	9.8	9.2	8.4	9.3	9.0
Lost workday cases .....	5.0	5.1	5.5	4.9	4.6	4.0	3.6	4.2	3.9
Lost workdays .....	79.3	78.0	85.9	82.4	78.1	72.2	64.5	68.8	71.6
Instruments and related products:									
Total cases .....	7.0	6.9	7.2	6.8	6.5	5.6	5.2	5.4	5.2
Lost workday cases .....	2.4	2.6	2.8	2.7	2.7	2.3	2.1	2.2	2.2
Lost workdays .....	37.4	37.0	40.0	41.8	39.2	37.0	35.6	37.5	37.9
Miscellaneous manufacturing industries:									
Total cases .....	11.5	11.8	11.7	10.9	10.7	9.9	9.9	10.5	9.7
Lost workday cases .....	4.0	4.5	4.7	4.4	4.4	4.1	4.0	4.3	4.2
Lost workdays .....	58.7	66.4	67.7	67.9	68.3	69.9	66.3	70.2	73.2

See footnotes at end of table.



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

Industry and type of case <sup>1</sup>	Incidence rates per 100 full-time workers <sup>2</sup>								
	1977	1978	1979	1980	1981	1982	1983	1984	1985
<b>Nondurable goods</b>									
<b>Food and kindred products:</b>									
Total cases .....	19.5	19.4	19.9	18.7	17.8	16.7	16.5	16.7	16.7
Lost workday cases .....	8.5	8.9	9.5	9.0	8.6	8.0	7.9	8.1	8.1
Lost workdays .....	130.1	132.2	141.8	136.8	130.7	129.3	131.2	131.6	138.0
<b>Tobacco manufacturing:</b>									
Total cases .....	9.1	8.7	9.3	8.1	8.2	7.2	6.5	7.7	7.3
Lost workday cases .....	3.8	4.0	4.2	3.8	3.9	3.2	3.0	3.2	3.0
Lost workdays .....	66.7	58.6	64.8	45.8	56.8	44.6	42.8	51.7	51.7
<b>Textile mill products:</b>									
Total cases .....	10.2	10.2	9.7	9.1	8.8	7.6	7.4	8.0	7.5
Lost workday cases .....	2.9	3.4	3.4	3.3	3.2	2.8	2.8	3.0	3.0
Lost workdays .....	57.4	61.5	61.3	62.8	59.2	53.8	51.4	54.0	57.4
<b>Apparel and other textile products:</b>									
Total cases .....	6.7	6.5	6.5	6.4	6.3	6.0	6.4	6.7	6.7
Lost workday cases .....	2.0	2.2	2.2	2.2	2.2	2.1	2.4	2.5	2.6
Lost workdays .....	31.7	32.4	34.1	34.9	35.0	36.4	40.6	40.9	44.1
<b>Paper and allied products:</b>									
Total cases .....	13.6	13.5	13.5	12.7	11.6	10.6	10.0	10.4	10.2
Lost workday cases .....	5.0	5.7	6.0	5.8	5.4	4.9	4.5	4.7	4.7
Lost workdays .....	101.6	103.3	108.4	112.3	103.6	99.1	90.3	93.8	94.6
<b>Printing and publishing:</b>									
Total cases .....	6.8	7.0	7.1	6.9	6.7	6.6	6.6	6.5	6.3
Lost workday cases .....	2.7	2.9	3.1	3.1	3.0	2.8	2.9	2.9	2.9
Lost workdays .....	41.7	43.8	45.1	46.5	47.4	45.7	44.6	46.0	49.2
<b>Chemicals and allied products:</b>									
Total cases .....	8.0	7.8	7.7	6.8	6.6	5.7	5.5	5.3	5.1
Lost workday cases .....	3.1	3.3	3.5	3.1	3.0	2.5	2.5	2.4	2.3
Lost workdays .....	51.4	50.9	54.9	50.3	48.1	39.4	42.3	40.8	38.8
<b>Petroleum and coal products:</b>									
Total cases .....	8.1	7.9	7.7	7.2	6.7	5.3	5.5	5.1	5.1
Lost workday cases .....	3.3	3.4	3.6	3.5	2.9	2.5	2.4	2.4	2.4
Lost workdays .....	59.2	58.3	62.0	59.1	51.2	46.4	46.8	53.5	49.9
<b>Rubber and miscellaneous plastics products:</b>									
Total cases .....	16.8	17.1	17.1	15.5	14.6	12.7	13.0	13.6	13.4
Lost workday cases .....	7.6	8.1	8.2	7.4	7.2	6.0	6.2	6.4	6.3
Lost workdays .....	118.1	125.5	127.1	118.6	117.4	100.9	101.4	104.3	107.4
<b>Leather and leather products:</b>									
Total cases .....	11.5	11.7	11.5	11.7	11.5	9.9	10.0	10.5	10.3
Lost workday cases .....	4.4	4.7	4.9	5.0	5.1	4.5	4.4	4.7	4.6
Lost workdays .....	68.9	72.5	76.2	82.7	82.6	86.5	87.3	94.4	88.3
<b>Transportation and public utilities</b>									
Total cases .....	9.7	10.1	10.0	9.4	9.0	8.5	8.2	8.8	8.6
Lost workday cases .....	5.3	5.7	5.9	5.5	5.3	4.9	4.7	5.2	5.0
Lost workdays .....	95.9	102.3	107.0	104.5	100.6	96.7	94.9	105.1	107.1
<b>Wholesale and retail trade</b>									
Total cases .....	7.7	7.9	8.0	7.4	7.3	7.2	7.2	7.4	7.4
Lost workday cases .....	2.9	3.2	3.4	3.2	3.1	3.1	3.1	3.3	3.2
Lost workdays .....	44.0	44.9	49.0	48.7	45.3	45.5	47.8	50.5	50.7
<b>Wholesale trade:</b>									
Total cases .....	8.5	8.9	8.8	8.2	7.7	7.1	7.0	7.2	7.2
Lost workday cases .....	3.6	3.9	4.1	3.9	3.6	3.4	3.2	3.5	3.5
Lost workdays .....	52.5	57.5	59.1	58.2	54.7	52.1	50.6	55.5	59.8
<b>Retail trade:</b>									
Total cases .....	7.4	7.5	7.7	7.1	7.1	7.2	7.3	7.5	7.5
Lost workday cases .....	2.7	2.8	3.1	2.9	2.9	2.9	3.0	3.2	3.1
Lost workdays .....	40.5	39.7	44.7	44.5	41.1	42.6	46.7	48.4	47.0
<b>Finance, insurance, and real estate</b>									
Total cases .....	2.0	2.1	2.1	2.0	1.9	2.0	2.0	1.9	2.0
Lost workday cases .....	.8	.8	.9	.8	.8	.9	.9	.9	.9
Lost workdays .....	10.4	12.5	13.3	12.2	11.6	13.2	12.8	13.6	15.4
<b>Services</b>									
Total cases .....	5.5	5.5	5.5	5.2	5.0	4.9	5.1	5.2	5.4
Lost workday cases .....	2.2	2.4	2.5	2.3	2.3	2.3	2.4	2.5	2.6
Lost workdays .....	35.4	36.2	38.1	35.8	35.9	35.8	37.0	41.1	45.4

<sup>1</sup> Total cases include fatalities.

<sup>2</sup> 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.)

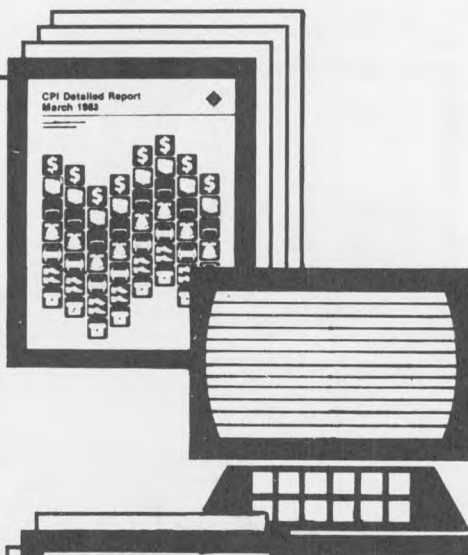
<sup>3</sup> Excludes farms with fewer than 11 employees since 1976.

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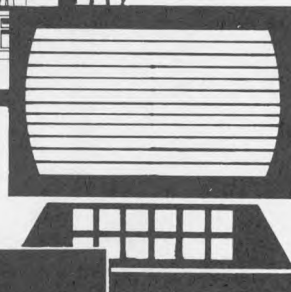
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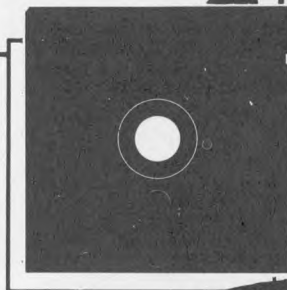
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