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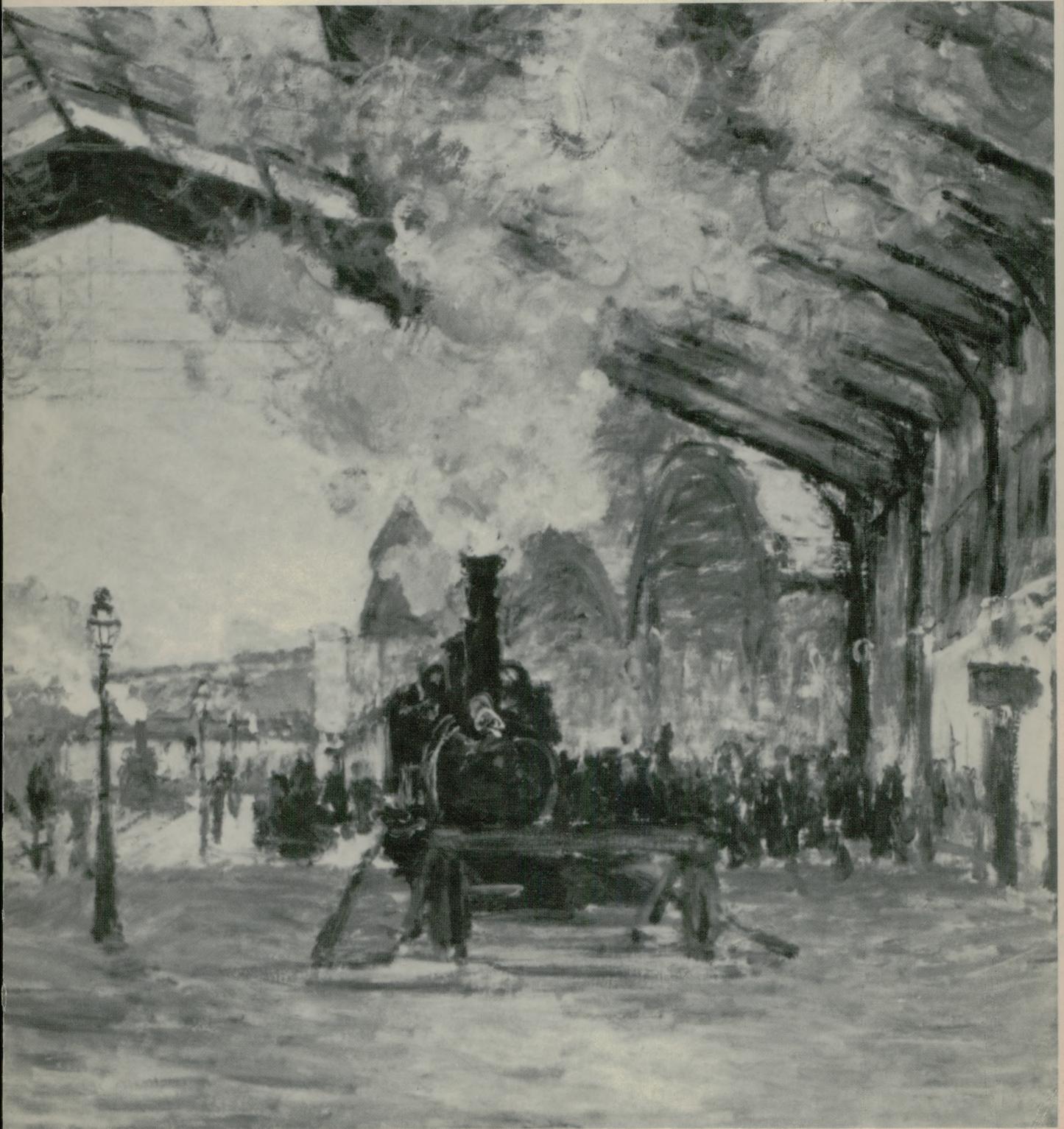
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*In this issue:*

A special section on comparable worth  
Pensions today  
The 1985 MLR Annual Index





**U.S. DEPARTMENT OF LABOR**  
**William E. Brock, Secretary**

**BUREAU OF LABOR STATISTICS**

Janet L. Norwood, *Commissioner*

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## MONTHLY LABOR REVIEW

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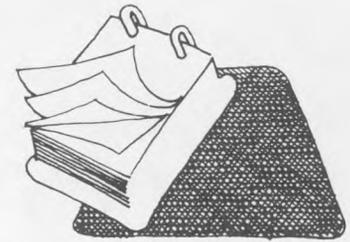
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# Labor Month In Review



**JOB SAFETY.** The Bureau of Labor Statistics reported results of its annual survey of work-related injuries and illnesses. Collected in 1985, the data show that occupational injuries and illnesses increased during 1984 among industries surveyed. Eight incidents of injury or illness were reported for every 100 full-time workers, a rate of 8.0, compared with a 7.6 rate in 1983.

The number of injuries and illnesses rose to 5.4 million in 1984 from 4.9 million in 1983. This over-the-year increase of 11.7 percent was in contrast to the 6.6-percent increase in hours of exposure which resulted from increased employment and hours during the second year of the current economic recovery.

In 1984, the number of incidences of injuries and illnesses serious enough to result in lost workdays was 3.7 per 100 workers, up from 3.4 in 1983. The number of workdays lost by such incidents averaged 63.4 per 100 full-time workers in 1984 and 58.5 in 1983.

Authorized by the Occupational Safety and Health Act, the survey represents all employers except the self-employed; farmers with fewer than 11 employees; private households; railroads; coal, metal, and nonmetal mining employers; government agencies; and employers with fewer than 11 employees in low-risk industries.

**Fatalities.** In private industry establishments with 11 employees or more, 3,740 job-related deaths were recorded. As in previous years, accidents on the road, with cars and trucks, accounted for more than one-fourth of these deaths. The remainder resulted from various other causes, including heart attack, falls, accidents with industrial vehicles, and electrocutions.

**Occupational injuries.** Work-related injuries occurred at a rate of 7.8 per 100

full-time workers in 1984. The injury rate, which had been in the double-digit range a decade ago, dropped to 8.8 in 1975 and then rose to 9.2 in 1978 and 1979. The rate dropped steadily each year after that to a low of 7.5 in 1983 and then rose 0.3 point in 1984. The number of workers employed and the hours they worked varied from year-to-year as did the mix of experienced and inexperienced workers and the proportion of those employed in high-and low-hazard industries.

In 1984, injury rates rose in all the industry divisions except for agriculture and for finance, insurance, and real estate. The rates ranged from a low of 1.9 in finance, insurance, and real estate to a high of 15.4 in construction. Goods-producing industries (agriculture, mining, construction, and manufacturing) had the highest rates, 11.0 per 100 full-time workers for the sector. As might be expected, the services-producing sector (services, trade, transportation and public utilities, and finance, insurance, and real estate) had a lower rate, 6.0.

The number of injuries was 5.3 million, compared with 4.7 million in 1983. About 60 percent of the rise in injury cases was in the goods-producing sector. An increase in mining injuries was primarily in oil and gas extraction and an increase in construction injuries was mainly among general building and special trade contractors. Fabricated metal products, machinery, electrical and electronic equipment, and transportation equipment had most of the increase in manufacturing cases.

The number of injuries in the services-producing sector rose about 237,000 in 1984. About 60 percent of this increase came from seven industries—trucking and warehousing, air transportation, wholesale trade-durable goods, food stores, eating and drinking places, hotels and motels, and business services.

As in the past, workplaces with 100 to 249 employees recorded the highest incidence rates. The rate for this group was 11.1 per 100 full-time workers, compared with 5.4 in establishments with 2,500 workers or more and 3.6 in establishments with fewer than 20 workers.

**Occupational illnesses.** An occupational illness is defined as any abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to environmental factors associated with employment. Acute and chronic illnesses or diseases which may be caused by inhalation, absorption, ingestion, or direct contact are included. Occupational illnesses measured in the survey cover the number of *new* illness cases recorded during the year. The survey does not measure continuing conditions reported in previous years.

About 124,800 occupational illnesses were recorded in 1984. The number of skin diseases and disorders associated with repeated trauma (noise-induced hearing loss and other conditions caused by repeated motion, pressure, or vibration) together accounted for 3 of 5 illnesses. Occupational illnesses estimated in the survey provide a valid measure of recognized acute cases, but do not adequately reflect that portion of occupational illnesses which are chronic and which develop over a long period.

**Background of survey.** In 1985, approximately 280,000 private sector employers were surveyed. Response is mandatory. To calculate estimates for the total private sector, BLS uses data provided by the Department of Labor's Mine Safety and Health Administration and the Department of Transportation's Federal Railroad Administration. □

# Perspectives on comparable worth: an introduction to the numbers

*Reports presented before a national conference  
of statisticians point up the many facets  
of the comparable worth issue  
and suggest directions for future research*

JANET L. NORWOOD

Comparable worth is a concept that has thrived on statistical evidence. Both reliable and unreliable statistics have been used by people on all sides—those for or against the concept, and even those who want to prove that comparable worth is either a non-issue or the wrong issue to be addressed. Whatever position is taken, statistics are invariably an important component of any comparable worth discussion.

What do the latest data show? Trends in two of the most widely used data series on individual earnings reveal that the gap between men and women has been narrowing gradually over the past few years.

Bureau of Labor Statistics data from the Current Population Survey show that women working full time in the first quarter of 1985 had median wage and salary earnings of \$268 a week, 66 percent of the \$404 earned by men. In 1979, when BLS first began publishing weekly earnings data on a quarterly basis, women's median earnings were 62 percent of men's earnings. Over the last 6 years, the earnings ratio has fluctuated between 61 percent and 67 percent from quarter to quarter, but the trend generally has been up.

A similar pattern is found in the older CPS series on year-round, full-time earnings of all workers. Preliminary data

for 1984 indicate women's earnings of around \$14,810, or 64 percent of the \$23,225 earned by men. In 1980, the ratio was 60 percent; in 1970, it was 59 percent; and in 1960, it was 61 percent. Obviously, these ratios based on annual aggregate data at the national level fluctuate from year to year. But, like the newer quarterly earnings series, they illustrate that the overall male-female earnings gap has narrowed somewhat during the last few years.

Observations based on these aggregate national data are just the beginning. CPS microdata permit us to dig beneath these aggregate levels and to show how female-male differences vary by occupation, hours of work, education, race, family status, and a great many other characteristics. Very often, the statistical modeling based on microdata "adjusts" for these variables, and the pay gap is reduced considerably.

That the pay gap is indeed narrower than the aggregate measure indicates is confirmed by the BLS occupational wage surveys of business establishments. Using wage data from one of these surveys (the survey of professional, administrative, technical, and clerical occupations), a BLS study published last year demonstrated that the average pay of men in a selected group of narrowly defined white-collar occupations generally exceeded the pay of women in those occupations.<sup>1</sup> But the differences nearly disappeared when each occupation was broken down into its component levels based on skill and experience. That is, men and women were paid about the same wages at each level of the specific job, but a much smaller proportion of women were senior

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Janet L. Norwood is Commissioner of Labor Statistics. This article is adapted from her introductory remarks on the comparable worth issue presented at the Annual Meetings of the American Statistical Association, Las Vegas, NV, Aug. 6, 1985.

level employees. Consequently, the average pay figure for women in each occupation was pulled down by the large proportion of women in the lower level jobs.

In many of the professions, the concentration of women in lower level jobs reflects, in part, the well-documented increase in the number and proportion of women who entered the labor force during the 1970's and early 1980's, as well as the greatly increased number who have received professional degrees. In the field of accounting, for example, 14 percent of entry-level workers were women in 1970, compared with 46 percent in 1981.

Some people believe that, as women move up in their professions, pay differences with men are bound to decline. Others are convinced that supply and demand factors will keep women from advancing. And, despite the evidence of National Longitudinal Survey data on the cohort of mature women (ages 45-59), which show that over a recent 15-year period (1967-82), women's taste for the labor market was up and for housework was down, some observers believe that the currently high labor force participation rates of women are a temporary phenomenon.

Women's commitment to the job market is stronger today than at any time in the last 35 years, or in fact, at any time in this century. The civilian labor force includes about 51 million women, or about 44 percent of the total of 115 million workers. And most of today's working women, just as in the past, either work full time, or are looking for full-time jobs. An average of 20 to 25 percent are employed part-time.

The problem is that, despite women's increasing employment, they remain concentrated in relatively few, low-paying job categories. About one-fourth of all women work-

ers today can be found in just three job categories out of hundreds—secretarial/typing, retail sales, and food preparation and service. This is not to say they are not entering some higher-paying occupations. Women are now 6 percent of all engineers, 16 percent of all physicians, and in the growing computer field, 30 percent of all systems analysts and 35 percent of all programmers. Corresponding estimates for 1974 were 1 percent, 10 percent, 13 percent, and 23 percent, respectively.

As the following articles demonstrate, the comparable worth issue is a multidimensional one that continues to be hotly debated in both the public and private sectors. It is on the legislative agendas of many local and State governments, and at the Federal level, an advisory group on comparable worth has been proposed.

The debate is even international in scope. For instance, many readers may already be familiar with the Australian and Canadian versions of comparable worth. Even within such global agencies as the Organization for Economic Cooperation and Development and the United Nations, female employees—including statisticians—have been examining their own pay rates *vis-à-vis* those of male employees.

A great deal of comparable worth activity now centers on the job classification area. But good statistical estimates and their analysis still form the basis for discussion and debate. The articles that follow describe the results of several such efforts undertaken in recent years by experts in the field of pay equity. □

—FOOTNOTE—

<sup>1</sup> See Mark Sieling, "Staffing patterns prominent in female-male earnings gap," *Monthly Labor Review*, June 1984, pp. 29-33.

# Comparable worth: how do we know it will work?

*The debate over comparable worth obscures the lack of consensus on the definition and goals of such a policy, and of data for informed decisionmaking*

CAROLYN SHAW BELL

The title of this article poses a question to which there is a very short answer. We don't. We are completely unable to predict the outcomes of an effective comparable worth policy, whether mandated by law or adopted by private decisionmakers. Our ignorance stems from the lack of data with which to build a viable economic model. The issue is, of course, too new for historical evidence or even case studies to provide much help.

The dearth of useful data is due primarily to the fact that comparable worth itself comprises several different issues. Most of these issues have, in fact, emerged from analyzing statistics gathered for other purposes. But comparable worth has frequently been proposed as a solution without clearly defining the problem, partly because of insufficient data, and partly because of insufficient analysis of existing data.

The following discussion will elaborate on these statements. It concludes that efforts to design data collecting systems or even to tabulate and amass those data that already exist lag behind efforts to litigate and legislate comparable worth. It is highly likely, therefore, that comparable worth as a policy will be adopted or rejected on the basis of factors other than reasoned analysis.

## **Defining comparable worth**

The term "comparable worth" is difficult to define. Whatever it is, the concept emerged after the passage of the

Civil Rights Act of 1964. Title VII of the act makes it an unlawful employment practice for any employer to discriminate on the basis of race, color, religion, sex, or national origin. Title VII specifically mentions hiring and discharge, compensation and conditions of employment, and the limiting of opportunities for employment.

Nowhere in the 1964 act, or in the legislative history preceding its passage, or in its predecessor, the Equal Pay Act of 1963, was the term comparable worth mentioned or its essence discussed in other ways. So the concept did not originate with Title VII, whether or not it can be justified by that legislation. Rather, the notion of comparable worth emerges from a specific interpretation of statistical estimates. These estimates show a significant and continuing disparity between men's wages and women's wages, and between the wages of blacks and whites. The data describe an existing condition, which the use of comparable worth seeks to remedy. It must be noted at once that most discussions move from simple descriptive statistics to comparable worth as the remedy with little attempt at analyzing the data, assessing their applicability, or rigorously defining the problem.

Examples of the difficulties in defining comparable worth and its aims abound in the press. When the issue arose during the 1984 Presidential campaign, one political writer identified the concept as "a means of raising the income of working women."<sup>1</sup> More recently, however, another commentator defined comparable worth as a "practice . . . designed to increase the pay of workers in female-dominated fields such as nursing to a level of men in a field requiring comparable labor."<sup>2</sup>

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Carolyn Shaw Bell is Katharine Coman Professor of Economics at Wellesley College. This article is adapted from a paper she presented at the Annual Meetings of the American Statistical Association, Las Vegas, NV, Aug. 6, 1985.

These two quotations share one characteristic: they both report comparable worth as a solution to a problem. But they identify different problems. One view, widely held, sees comparable worth as a remedy for low incomes and growing poverty among women. Another suggests that comparable worth is the remedy for the earnings differential between male jobs and female jobs. Proponents of both rely on statistics to describe the problem.

The case for comparable worth as a remedy for poverty among women is a very general or macroeconomic statement referring to women in aggregate. Thus, those who seek to remedy such poverty quote data on earnings of women compared to men and, most frequently, the familiar figure that full-time year-round workers who are female earn about 60 percent as much as their male counterparts. They then explicitly or implicitly translate these earnings figures into income.<sup>3</sup>

The preponderance of low incomes among women can be found in many different sets of statistics. To advocate comparable worth as a means of raising these incomes, however, often rests on the premise that discrimination against women exists in the workplace. The same assertion is required in the other line of advocacy, which sees comparable worth as a remedy not so much for poverty as for differences in wages.

This second notion of comparable worth has frequently been called "pay equity" and proposes to do away with obvious and sometime noteworthy differentials in wages between occupations. Again, statistical evidence can be quoted at length. However, unlike the estimates cited in support of comparable worth as a general remedy for poverty among women, these data refer to one market and, hence, constitute the microeconomic approach.

The use of data on interoccupational wage disparity can be illustrated by testimony before a 1984 Congressional hearing that contrasted monthly salaries for city or State government workers in various job classifications—for example, a senior carpenter at \$1,080 and a senior legal secretary at \$665, or a senior accounting clerk at \$836 in pay and a streetsweeper at \$758.<sup>4</sup> Jobs paying higher wages were found to be held almost exclusively by men, with women dominating the lower-wage jobs. Again, the proposed remedy (without any very careful delineation of the problem) was to implement comparable worth in determining wages.

### **Is discrimination the culprit?**

The discrimination charge also rests on statistical evidence. First, occupational data from the Bureau of the Census, the Bureau of Labor Statistics, and other public and private sources have been tabulated to show the percentages of males and females in various jobs, which can then be classified as male-dominated (or male-intensive), female-dominated, or neutral.

Exactly what percentage of jobholders in an occupation

must be of the same sex for it to be sex-typed is not often discussed, and yet this is a good example of the kind of analysis that needs to be undertaken. Because women make up about half the labor force, one could argue that the only "neutral" occupations are those with between 45 percent and 55 percent female jobholders. But because women make up less than half the full-time labor force, this definition can be disputed. Other rules for sex-typing of jobs can easily be devised; the point is that insufficient research has been done to establish general agreement on this rather simple point. It is also true that substantial movement of women between men's and women's jobs occurs.<sup>5</sup>

Notwithstanding, comparable worth advocates and opponents alike refer to "men's jobs" and women's jobs." Of course, these terms have also been used for years by anthropologists, historians, and other observers of various cultures and of the division of labor between the sexes. What is at issue is an attempt to use statistics to turn this condition into a problem and to advocate comparable worth measures as a solution.

Following the sex-typing of jobs, the pay disparity argument turns to the data on wages and earnings in each occupation. Most arrays find women's jobs at the low end of the pay scale with men's jobs at the upper end, and some remarkably persuasive inverse correlations between the proportion of jobholders who are female and the level of earnings have been calculated.

There are then two ways by which to conclude that discrimination exists. One is to assume that women are being confined to the lower-wage jobs. The other is to hold that women tend to enter certain occupations, and that those jobs pay less because they are "female jobs." Both arguments can be found in the literature, although they have different implications with respect to the remedy of comparable worth, defined in this case as pay equity.<sup>6</sup>

If discrimination exists because women are crowded into low-paying jobs, then the immediate remedy would appear to be removal of the barriers to their employment in high-paying occupations; presumably, this remedy was made available by Title VII. The argument for the new remedy of comparable worth rests on the charge that Title VII has not worked, and that not enough progress in job integration has occurred since the 1964 Civil Rights Act was passed. Thus, something stronger than merely making discrimination illegal is needed, something like an adjustment of wages.

If, on the other hand, the discrimination exists because all jobs held predominately by women (for whatever reason) are paid less than all jobs held predominately by men because women's work is valued less, then removing obstacles to employment would not have any effect. Indeed, evidence exists that, as formerly male jobs (stenographers at the turn of the century and bank tellers during the postwar years) have become almost exclusively female, relative pay levels for those occupations have fallen. It follows, according to this line of reasoning, that it will do no good to admit women

to men's jobs, that what is needed is to raise the prevailing low levels of pay for female jobs. Hence, the need for comparable worth.

### The search for the "just price"

This argument comes close to implying that work has an intrinsic or innate value, quite apart from the monetary wage it commands in the labor market. Such a notion is neither statistically demonstrable nor part of any economic theory, representing instead a philosophical and particularly ethical approach to the question of production and income. Sometimes it is made explicit: "People who are in lifesaving, life-molding people jobs such as nursing and teaching are repeatedly told through their paychecks that their work is less important than occupations which deal with machines or dollars."<sup>7</sup> A radical interpretation states, "If the discussion of what makes work worthy is extended to the grass roots, we may well determine that all jobs are equally worthy. We may decide that workers in unskilled, routinized jobs may be doing the hardest work of all, for such work saps and denies their very humanity."<sup>8</sup> As more than one critic has pointed out, such reasoning is reminiscent of the medieval notion of a "just price."

Once the term "equity" is introduced, whether by ethicists deciding what is deserving, or by philosophers determining what basic, inherent value exists in work, or by legislators or lobbyists pushing for specific reform, the term "fair" comes into wide use. It has respectable antecedents: the country has a Fair Labor Standards Act, public utilities are regulated to allow a fair return on their investors' capital, and most tax reform proposals aim to make the system more fair. Nonetheless, the word "fair" makes both statisticians and economists uneasy, because no one knows how to define it.

For advocates of comparable worth who argue for pay equity, "fairness" consists of the wages paid to men. That is, if women's jobs are to be paid according to their true value, following the ethical argument, they should be paid as much as men's jobs. If women's wages are depressed because of occupational segregation, following the argument that finds discrimination responsible for sex-typed jobs, then they should be raised to the level of men's wages. Such equalization of wage rates would itself promote more integration of jobs. Finally, following the argument that seeks to remedy feminine poverty, if women are poor because they can only work at low-paying jobs, then they will not be poor if they earn as much as men doing equivalent work. The three arguments for comparable worth so far examined do not anywhere urge a reduction of men's wages, or even splitting the difference.

It is this *de facto* definition of "fair," this equation between equity and raising wages for women, that leads some major actors in the arena to abandon the term comparable worth altogether. So, there is one more interpretation to consider. It is the phrase "sex-based wage discrimination,"

and constitutes the most narrow of all the comparisons between men and women in the workplace. The clearest exponent of this approach is probably Winn Newman, the attorney who has represented the American Federation of State, County and Municipal Employees (AFSCME) in lawsuits and complaints filed with the U.S. Equal Employment Opportunity Commission, and testified before Congressional committees and various State investigating boards. He explains:

Basically, comparable worth is not the issue that should be involved in any of these discussions. Discrimination is the issue. The law, Title VII of the Civil Rights Act, prohibits discrimination in compensation on the basis of sex or race, and we know also that law does not refer to, discuss or even contain the words "comparable worth." Comparable work and pay equity have become popular but not legal terms and indeed (are) now being used as a red herring, if you will, to avoid the issue of sex-based wage discrimination.<sup>9</sup>

This argument is narrow because, first, it refers only to the decisions made by the individual employer. It does not compare the wages of beauticians and barbers via census occupational data, but rather the wages of all men employed by a given enterprise with those of all the women there employed. The issue is not one of determining the innate value or worth of any particular job, whether held by men or women, but of looking at the pattern of wages across all jobs. As often happens, reference is made to the 1981 Supreme Court decision in the case of *County of Washington v. Gunther*, although, unfortunately, that decision was itself taken on extremely narrow grounds. Newman, however, argues that:

The Supreme Court found that if a differential in pay results in whole or in part from sex discrimination, such wage differential is illegal if the skill, effort and responsibility of the different "male" and "female" jobs is equal or if the difference in skills, effort and responsibility does not support the amount of the differential.<sup>10</sup>

The various legal actions brought under the heading of sex-based wage determination also rely heavily on statistical evidence. There may be a statistical analysis of wages showing a pattern of women's pay rates being consistently below men's, or a statistically significant inverse correlation between salary and the percentage of employees in a given position who are women. Or there may be resort to job evaluation techniques, which also rely on statistical methods.

### A look at the statistics

There have now been distinguished four different meanings of the term "comparable worth," each of which uses statistical data to describe the issue, and each of which proposes the same remedy, namely an increase in the wages of jobs held by women. These are the arguments that female poverty represents discrimination resulting in low earnings; that different occupations pay higher or lower wages ac-

ording to whether they are male-dominated or female-dominated, and that such sex segregation represents discrimination; that jobs dominated by women pay low wages because women's work is not properly valued; or that a particular employer may set wages so as to discriminate against women in all jobs. Each of these issues can be clarified by using more specific statistics, but sufficient data to settle the argument one way or another do not exist.

The first issue is that of female poverty. The number of poor in the United States began to decline in the early 1960's, dropping about 11 million persons between 1959 and 1968. The decrease consisted almost entirely of men; the number of poor families headed by men declined from 6.4 million to 3.3 million.<sup>11</sup> Over the same period, the number of married women in the labor force rose by 4.6 million, increasing their labor force participation rate from 30.9 percent to 38.3 percent.<sup>12</sup> Clearly, the larger number of two-earner families meant a smaller number of poor families.

The percentage of families at or below the poverty level supported by women rose during the 1960's, and beginning in 1970, there was a sharp and continuing rise in the number of such families as well. The result is that, as of 1983, the number of poor families supported by women was roughly equal to the number of poor families headed by men, although the poverty rate for the latter was only one-third of that of the former. In that year, 47 percent of all poor families were maintained by women and 62 percent of the needy without families were women.<sup>13</sup> So there is no argument about the "feminization of poverty"; it clearly has taken place.

The first useful clarification of this issue distinguishes income (poverty-level or otherwise) from earnings, and notes the existence of other types of income received, particularly transfer payments. First, families with two earners became more common between 1959 and 1983: During the 1960's, when poverty declined by about one-third, the number of one-earner poor families headed by men was cut by more than one-half.<sup>14</sup> By 1983, only 10 million families contained only one worker and 2.3 million of these were poor. Almost half (47 percent) were families maintained by women.<sup>15</sup>

Even in families supported by only one worker, income is often not equal to earnings, because property income and various types of pensions, income assistance, or other transfer payments also exist.<sup>16</sup> One type of transfer, means-tested government cash and noncash benefits, was received by 11 percent of all families that had one worker or more with no one unemployed in the first quarter of 1984; among families supported by working women in which no one was unemployed, 44 percent received such aid in addition to their wages.<sup>17</sup> But, clearly, the absence of a spouse plays a primary role in determining poverty. For women who maintain families, the scantiness, both in frequency and amount, of child support payments has now been documented by periodic studies which show, among other things, that in about

13 percent of such cases poor families would not be poor if absent fathers made the child support payments awarded or agreed to.<sup>18</sup> Obviously, such support payments amount to only a fraction of what the family would receive were there another earner present.

Quite aside from the prospect of having two earners, the presence of another adult (preferably a spouse) can enhance the earnings capacity of the sole support of the family. When child care can be shared, more job opportunities become available, and workers can spend more hours on the job. Earnings reflect not only wage rates but hours worked, and the poverty of single mothers arises partially from a scarcity of hours available for work.<sup>19</sup> The time constraints affect not only employment potential but also availability for education or training that would allow advancement in the labor market. Finally, government income maintenance programs themselves impose constraints on the earnings of women supporting families, including criteria designating an earnings threshold when more than one type of public assistance is received, which add to the discrepancy between earnings and income.

In short, the existing cross-sectional data suggest that it is the state of being single with a family to support that results in poverty as much as any other factor, such as earning low wages. This conclusion has been reinforced by longitudinal data showing that a marital breakup reduces income for the women and children involved by about 10 percent annually, with no similar impact on the men.

In light of the highly complex reasons for poverty among women, those who advocate comparable worth as a means of improving the welfare of the poor offer a simplistic, and probably misguided, solution. It is not clear that raising wages would help either the working or nonworking poor, for whom the constraints on employment would be unaffected. Perhaps more importantly, the advocates of comparable worth as a means of reducing poverty among women implicitly shift a parental responsibility away from men to women. The case for equity surely requires that both parents support children, rather than that children be lifted out of poverty by changing their mothers' wage rates. A more equitable remedy for female poverty than comparable worth would be effective action in collecting financial support from absent fathers.

The second argument in favor of comparable worth, that there is an occupation-based pay differential between men and women, can also be clarified by wider use of existing statistical data, particularly more specific details on both wages and occupations. The average earnings estimates commonly used to derive female-male earnings differences are very general statistics. They are influenced by, and yet tend to mask, the diverse micro level observations that make them up. Thus, because there has been a steady increase in the percentage of women in the labor force, the earnings average for all women is depressed by data for the high proportion of new workers earning entry-level wages. Sim-

ilarly, the wages of older women clearly reflect their much more limited opportunities at the time they entered the labor market. The aggregated estimates can be refined for analysis in many ways: using weekly rather than annual earnings, using weekly earnings adjusted for hours worked per week, using people of the same age, adjusting for experience as well as age, and, finally, using data for different occupations rather than combining all the people who work for a living into one of two groups depending on their sex. Studies have shown that each of these refinements reduces the estimated gap between what men and women earn.

Primarily, however, as Commissioner of Labor Statistics Janet L. Norwood has pointed out, "Women in general earn less than men today and much of the difference is because the jobs that women hold are generally paid at lower rates than the jobs held by men."<sup>20</sup> That finding, of course, forms the basis for the two arguments for pay equity: one, that women are crowded into female occupations and hence receive lower pay, and the other, that what women do, whatever their occupation, is valued less than the work of men. Here again, however, the term "occupation" can be described in both broad and narrow terms.

In the 1980 Standard Occupational Classification of the Census, 13 major occupational groups contain 503 categories. About 60 percent are male-intensive, that is, with 20 percent or fewer jobs held by women. Using this classification scheme, a decrease in segregation occurred between 1970 and 1980: more people were employed in "neutral" occupations and fewer men and women were employed in occupations dominated by their sex.<sup>21</sup> Each of these occupational categories, however, remains very broad. For example, more than half a million people are employed as assemblers, as manufacturing inspectors, as packers and wrappers, or as sewers and stitchers. Obviously, each of these categories includes jobs varying widely in skill requirements, industry location, and rates of pay.<sup>22</sup>

Other data exist, however, to give an even finer breakdown of occupations, and the results show the earnings gap to be much smaller within narrowly defined categories than in the 2- or 3-digit groupings most commonly used. Thus, the female-male pay ratio for clerical and kindred workers, on the basis of average weekly earnings, was 68 percent in 1982. But the ratio of female to male pay on a monthly salary basis in 1981 ranged from 84 percent to 94 percent for four grades of accounting clerks.<sup>23</sup> When data are gathered from the same establishment, the averages calculated for each occupation turn out to be very widely dispersed. Furthermore, the gap between men and women does not always appear, and in some cases the female-male ratio exceeds 100.<sup>24</sup>

This kind of research also confirms the extent to which women work in fewer occupations, largely dominated by their own sex, than do men. As finer and finer occupational classifications are explored, subsets of male-dominated or female-dominated jobs appear. Thus, within the legal

profession a smaller percentage of women enter criminal law than civil practice, and in the economics profession women are underrepresented in the areas of macro theory and international economics. Other examples exist elsewhere: psychiatry and pediatrics for women physicians, but urology and surgery for men; teaching rather than research for most female scientists of any specialty; and for female statisticians, applied statistics more than research or management.<sup>25</sup>

Finally, when jobholders are classified by rank within a narrowly defined occupation, the earnings gap narrows appreciably, with the ratio rising to 100 frequently and with instances of women being paid more than men in the same occupation and rank. However, the percentage of women at high ranks generally is small, suggesting that if occupational segregation disappears with more detailed definitions of occupation, segregation by status or rank may remain. The phenomenon has been noted generally in business. Only one female chief executive officer currently is found among the Fortune 500 group of firms, and one researcher was forced to expand the universe for a study of women executives to the Fortune 1000 list after the smaller group of firms yielded too few cases. People in academia also know about this phenomenon: fewer than 100 women in the country hold the rank of professor of economics, although several thousand instructors, lecturers, and assistant professors of economics are female. This may be viewed as another type of discrimination, in which women have been excluded from positions of authority, or it may be regarded simply as the natural outcome of recent entry of women into hitherto exclusively male fields, where it takes time to rise to the top.

Although this kind of statistical analysis has been widely available for some years, with various studies providing evidence about the extreme complexity in any description of the male-female earnings gap, no neat and persuasive summary has appeared that explains away, *in toto*, the possibility of discrimination against women through either occupational segregation or denial of opportunities or promotion. On the contrary, the outcome for serious students has been a search for more and better data. The advocates of comparable worth, on the other hand, rarely refer to any of these studies, and when they do, tend to dismiss them as partial or imperfect (which of course they are) and as having no relevance for the movement to raise women's wages to the level of men's pay.

### **A case-by-case approach needed?**

Nonetheless, the argument for pay equity to remedy discrimination clearly requires more data to clear up all the details. Why do the percentages of men and women in sex-typed occupations vary by region? Waiters and bartenders, bus drivers, and real estate agents illustrate this question; data to answer it are not available. Presumably, comparable worth determinations would have to differ by region, and

perhaps locality, if the "maleness" or "femaleness" of a given job varies across the country.

The inevitable conclusion is that any remedy has to be applied on a case-by-case basis, and that the facts of each case may, and probably will, differ for all the reasons so far discussed and many not mentioned. It is for this reason that the last definition of comparable worth, which eschews the phrase altogether, insists that the issue is sex-based wage discrimination. The data clearly show that the male-female earnings gap differs widely across employers when jobs are defined as precisely as possible, and therefore the pattern of wages for each employer must be analyzed. Not surprisingly, most of the action is taking place within city, county, and State governments, and through union-management negotiations.

Sociologists and institutional economists have identified the various ways in which a workplace, or an employing enterprise, has a culture of its own which determines the internal operations of the firm to a considerable degree. Clearly, some companies have been more responsive than others to affirmative action, or to demands for greater safety both in the plant and in the community. So, the goal of eliminating sex-based wage discrimination will have more appeal to some than to others, and the action taken will reflect the internal socio-political environment.

Should the study of a specific organization reveal a "pattern of disparities in wages between male and female jobs,"<sup>26</sup> the remedy called for is not a blanket raising of women's wages to equal those of men, but rather an evaluation of the requirements for, and duties of, all positions in the organization. Just as the issue has narrowed progressively through this discussion from one of comparable worth to one of sex-based wage discrimination, so the remedy called for is also much narrower. In such cases, what can be said about the likelihood of success? In short, will the job evaluation and wage adjustment remedy work for a single employer bent on removing wage discrimination?

### **The labor market is not perfect**

The final issue to be considered in this dissection of the meaning of comparable worth has to do with the argument offered by opponents. This states that, even if a job evaluation scheme finds two jobs identical in terms of skill, effort, responsibilities, and working conditions, so that equal wages should be paid, it may be impossible to recruit sufficient labor in a particular local market without offering a pay premium for one job. (This implies, of course, that those searching for jobs would not regard the two jobs as equal even if they have been so designated by the evaluation scheme.)

Opponents go on to argue that, if the market prevails over wages determined by job evaluations, the market also will prevail over any attempt to raise women's wages to those of men. The various expositions nearly always refer to hypothetical cases at the macro level: a rise in unemployment,

unemployment rates, and a decline of labor force participation among women are shown, by a familiar demand/supply model, to result from "interference" with market forces. Too, there have been some references to the rise in female unemployment in Australia after the 1972 decision to implement equal pay for females, although a more extensive investigation of foreign experience casts doubt on such simplistic reasoning.<sup>27</sup>

As all economists recognize, "the market" as a wage-setting device fairly bristles with imperfections. Information and mobility are limited, a single employer or a powerful union may successfully interfere with either demand or supply, and custom may or may not have a strong influence. Even so, critics of the job evaluation remedy see the external market as all-powerful, ignoring any peculiarities of administrative wage-setting. This far-fetched notion disregards the existence of the internal labor market of any organization with two or more employees. The internal wage-setting mechanisms of firms, government agencies, not-for-profit institutions, or any other employer are so shrouded in mystery that no appeal to "market force" makes any sense. One of the first (and best) analysts of so-called internal labor markets is Francine Blau, whose empirical work built on the work of John Dunlop and others in the early 1970's.<sup>28</sup> Since her work appeared in 1978, other research has illuminated the idiosyncratic pay practices of a wide assortment of employers and industries. Nonetheless, all this work has not prevented continued invocation of "the labor market" as an impersonal but overriding force which ultimately determines wages, despite the behavior of individual employers.

Any argument relating market forces to wage-setting policies must also recognize situations in which interference with supply and demand has been not only permitted but widely supported by the public and by labor market participants. Minimum prices exist in product markets, as do minimum wages in labor markets. Many labor markets allow higher wages to be paid for seniority without regard to supply and demand, and seniority rules also frequently govern layoffs and other conditions of employment. Veterans' preference interferes with demand and supply, as when past military service is considered in determining eligibility for Government jobs.

A somewhat different example exists in certain academic institutions, where faculty are paid on a scale that differs by rank but is equal across fields. In such a case, the assistant professor of chemistry draws the same salary as an assistant professor of medieval history with equivalent educational attainment and experience, although the outside market would reward these two workers quite differently. Similarly, statisticians, economists, and computer scientists can generally earn more in private industry or government than on faculties, but their academic salaries do not always reflect this differential. Such pay policies in academia can be included along with seniority, veterans' preferences, and minimum

wages as practices that flout the market forces to recognize a nonmarket determination of the value of work.

What else do these examples of "market distortion" have in common? First, their success relies heavily on strong political support, especially from employees themselves. Seniority may have originated so as to reward superior skill or experience, or to retain a critical core of workers in case of a business slowdown, but current data do not prove any strong correlation between such worker characteristics and seniority.<sup>29</sup> Even so, seniority can be supported by all because new employees can look forward to the day when they, too, will enjoy its special privileges. Likewise, veterans' employment preference endures because the public at large appears to agree that wartime service merits special treatment in the labor market. The same type of value judgment probably allows a common salary scale at institutions of higher learning, with at least the tendency to recognize different fields of scholarship as of equal worth or value. These exceptions to the determination of wages by supply and demand represent exactly the kind of appeal to a philosophy of ethics proffered in the case of comparable worth. There, the argument is that a teacher's contribution to society is worth more than a school custodian's work, just as the work of a soldier or of a senior employee is worth more than that of others, even if they do the same job.

To dismiss cases of administrative wage-setting as mere market imperfections overlooks their lessons for those involved in the debate over comparable worth. What such cases suggest is the need to investigate the conditions that generate social or political support for a nonmarket solution to labor supply and demand. If labor and management agree, in an individual bargaining area, that jobs should be evaluated and wages set accordingly, then the internal labor market or job classification scheme will clearly take precedence over any external market forces. In such cases, even if some wages must be adjusted to reflect local or temporary shortages, this influence of the market will not negate the internal equity which has been achieved. If a State government or other public agency revises its job classification scheme to set nondiscriminatory wages, and both employees and legislators are strong supporters, the likelihood of success is very high. Because hard data to

oppose job evaluation are unavailable and analysis based on hypothetical markets is rarely persuasive, it is no wonder that comparable worth legislation is being considered in more than 30 of the 50 States.

Laws requiring such job evaluation schemes and wage adjustments throughout the private sector have not yet generated such support. Most workers realize that wide variations in pay for the same occupation exist across employers. For this and other reasons, it is not clear that sex-based wage discrimination accounts for all wage differentials.

However, it is important to note that there has been support expressed for comparable worth even within the private business community. For example, the editorial board of one of the Nation's major business magazines this year warned readers that "[c]omparable worth is an extension of women's demands for equal pay for equal work, an idea that is both reasonable and fair as a way of correcting the undeniable, historic wage discrimination against working women . . . . Business companies should scrutinize their pay systems to weed out even the appearance of discrimination."<sup>30</sup> And, in the same vein, the director of industrial relations for a prominent U.S. manufacturer recently indicated his support for a Federal law mandating job evaluation. While admitting to some trepidation at the prospect of legislation affecting private industry, he concluded that "[t]he concerns [about implementing it] are valid but we can't go on keeping an inequity alive."<sup>31</sup>

WHAT THE DEBATE OVER COMPARABLE WORTH in all its versions has done—with or without supporting statistical evidence—is dramatize existing differences between men and women in the labor market. Men's wage rates are higher, the pay in male-dominated jobs exceeds that for female-intensive jobs, women are more concentrated in women's jobs than are men in men's jobs, and earnings differ even after all possible corrections for ability, experience, time worked, age, education, and anything else that can be controlled for. The proponents of comparable worth have succeeded in shifting all these issues out of the research journals and into the press. This being so, the overall public support for some remedial action will undoubtedly grow. □

—FOOTNOTES—

<sup>1</sup>Walter Goodman, "Equal Pay for 'Comparable Worth' Growing as Job-Discrimination Issue," *The New York Times*, Sept. 4, 1984, p. B9.

<sup>2</sup>Laurence Collins, "Comparable-Worth Proposal Tangles Massachusetts Budget," *The Boston Globe*, May 21, 1985, p. 36.

<sup>3</sup>Congresswomen Patsy Mink, Keynote address at the National Strategy Conference of the National Institute for Women of Color, Oct. 19, 1984, as quoted in National Committee on Pay Equity, *Pay Equity News Notes*, December 1984; and Florine Koole, in *Federal Pay Equity Act of 1984*, Part 1, Hearings before the Subcommittee on Compensation and Employee Benefits of the Committee on Post Office and Civil Service, House of Representatives, 98th Cong. (Washington, 1984), p. 106.

<sup>4</sup>Hay Associates, as quoted in *Federal Pay Equity Act of 1984*, p. 73.

<sup>5</sup>Mary Corcoran, Greg J. Duncan, and Michael Panza, "Work Experience, Job Segregation, and Wages," in Greg J. Duncan and James N. Morgan, eds., *Five Thousand American Families* (Ann Arbor, University of Michigan, Institute for Social Research, 1983).

<sup>6</sup>Greg J. Duncan, *Years of Poverty, Years of Plenty* (Ann Arbor, University of Michigan Press, 1984).

<sup>7</sup>Mary Hatwood Futrell, in *Federal Pay Equity Act of 1984*, p. 42.

<sup>8</sup>Teresa Amott and Julie Matthai, "Comparable Worth, Incomparable Pay," *Radical America*, vol. 18, no. 5, 1984, p. 26.

<sup>9</sup>Winn Newman, in *Federal Pay Equity Act of 1984*, Hearings before the Manpower and Housing Subcommittee of the Committee on Govern-

ment Operations, House of Representatives, 98th Cong. (Washington, 1984), p. 23.

<sup>10</sup>Newman, *Federal Pay Equity Act of 1984*.

<sup>11</sup>*Poverty in the United States 1959 to 1968, Current Population Reports*, Series P-60, No. 68 (Bureau of the Census, 1969), p. 3.

<sup>12</sup>*Employment and Training Report of the President, 1981* (U.S. Department of Labor), p. 184.

<sup>13</sup>*Characteristics of the Population Below the Poverty-Level, 1983, Current Population Reports*, Series P-60, No. 147 (Bureau of the Census, 1985), pp. 1-6.

<sup>14</sup>*Poverty in the United States*, p. 3.

<sup>15</sup>*Characteristics of the Population*, pp. 1-6.

<sup>16</sup>Carolyn Shaw Bell, "Should Every Job Support a Family?" *The Public Interest*, Summer 1975.

<sup>17</sup>*Economic Characteristics of Households in the United States: First Quarter 1984, Current Population Reports*, Series P-70, No. 3 (Bureau of the Census, 1985), p. 23.

<sup>18</sup>*Child Support and Alimony: 1981, Current Population Reports*, Series P-23, No. 140 (Bureau of the Census, 1985), p. 26.

<sup>19</sup>Clair Vickery, "The Time-Poor: A New Look at Poverty," *Journal of Human Resources*, January 1977, pp. 27-49.

<sup>20</sup>Janet Norwood, *The Female-Male Earnings Gap: A Review of Employment and Earnings Issues*, Report 673 (Bureau of Labor Statistics, 1982).

<sup>21</sup>Nancy F. Rytina and Suzanne M. Bianchi, "Occupational reclassification and changes in distribution by gender," *Monthly Labor Review*, March 1984, p. 14.

<sup>22</sup>Earl F. Mellor, "Investigating the differences in weekly earnings of women and men," *Monthly Labor Review*, June 1984, pp. 17-28.

<sup>23</sup>Mellor, "Investigating the differences."

<sup>24</sup>Mark S. Sieling, "Staffing patterns prominent in female-male earnings gap," *Monthly Labor Review*, June 1984, p. 30.

<sup>25</sup>National Science Foundation, *The 1982 Postcensal Survey of Scientists and Engineers* (Washington, U.S. Government Printing Office), tables B-15, B-24.

<sup>26</sup>Newman, *Federal Pay Equity Act of 1984*.

<sup>27</sup>An excellent discussion of experience with equal pay provisions in 14 countries, including Australia, can be found in Janice Bellace, "A Foreign Perspective" in E. Robert Livernash, ed., *Comparable Worth: Issues and Alternatives* (Washington, 1984). Professor Bellace points out that, first, experience with equal pay activity in most countries is not yet sufficient to draw many conclusions and, second, most countries other than the United States have job evaluation schemes already incorporated into many wage-setting arenas.

<sup>28</sup>Francine Blau, *Equal Pay in the Office* (Lexington, MA, Lexington Press, 1978).

<sup>29</sup>James L. Medoff and Katherine G. Abrams, *The Role of Seniority at U.S. Workplaces: A Report on Some New Evidence*, Research Discussion Paper 809 (Cambridge, MA, Harvard Institute of Economic Research, January 1981).

<sup>30</sup>"Don't Duck Comparable Worth," *Business Week*, Jan. 28, 1985, p. 140.

<sup>31</sup>William Asher, quoted in Walter Goodman, "Equal Pay for 'Comparable Worth' Growing as Job-Discrimination Issue," *The New York Times*, Sept. 4, 1985, p. B9.

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### A note on communications

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

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# Comparable worth: organizational dilemmas

*One analyst explores the political, economic, and social implications of comparable worth for public and private employers and labor groups*

KAREN SHALLCROSS KOZIARA

Comparable worth has emerged as a major equal employment opportunity issue of the eighties. This issue is extremely controversial because it challenges traditional wage setting practices. What should be the basis for wage setting in our society? Should wages reflect supply and demand forces, or should they reflect the contribution individuals make to their employers?

To a certain extent, the answers to these questions are philosophical in that they reflect individual and cultural values. These questions also have important political and economic dimensions. It is not surprising that some observers describe comparable worth as a policy that could have dire economic consequences. Nor is it surprising that advocates see the issue in moral and ethical terms, and as a fundamental and necessary part of equal employment opportunity.

It is not yet clear how Federal courts will judge comparable worth claims brought under Title VII of the Civil Rights Act of 1964. Regardless of how the courts view comparable worth, public awareness of the issue is growing and has sparked the interest of women concentrated in primarily female occupations. Comparable worth is also a collective bargaining issue, and pay equity salary increases have been included in some settlements. In addition, a number of States and municipalities have either commissioned comparable worth studies or passed legislation requiring that public sector wages be based on comparable worth.

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Comparable worth could have a major effect on many organizations. This article identifies organizations likely to be affected and analyzes the issues these organizations will face. Public and private employer organizations are included in the discussion, as well as labor unions.

## Background

Although the 1963 Equal Pay Act and Title VII of the Civil Rights Act of 1964 became law over two decades ago, women working full time continue to earn about one-third less than men working full time. This gap has been both consistent and persistent. Much empirical research indicates that the major reason for the gap is the concentration of women in low-paying occupations.

The current labor force participation rate for women is approximately 53 percent, almost double what it was two decades ago. About 80 percent of the women in the labor force work in 25 of the 420 distinct occupations identified by the U.S. Department of Labor. Many of these jobs are generally filled by women. For example, about 99 percent of secretaries, 85 percent of registered nurses, 82 percent of librarians, and 86 percent of clerks are women.<sup>1</sup> The wages for these and similar "female jobs" are the focus of the comparable worth debate.

Wage adjustments based on comparable worth could affect the wages of a large proportion of women workers, as well as the wages of men working in female-dominated jobs. Thus, many employers view the possible economic consequences of comparable worth with grave concern. Predictions include increased labor costs, with resulting price increases and unemployment, particularly within job cate-

gories allocated comparable worth increases.<sup>2</sup> In contrast, advocates of comparable worth see its potential to bolster both the economic and political power of working women. Some observers cite possible sociological implications as well, for increasing the pay for female jobs may raise the status of these jobs and of women's work in general.<sup>3</sup>

Because comparable worth may result in significant economic, political, and sociological change, it could affect the external environment in which many organizations function. Organizations affected by comparable worth also will face changes in the internal environment involving dilemmas, constraints, and opportunities.

### Employer organizations

*External environment.* An employer's task environment includes the economic, political, sociological, and technological trends outside the organization that affect its functions. Currently, the majority of employers evaluating wages on the basis of job content and implementing comparable worth adjustments are in the public sector. There are several reasons for this. First, the highest positions in government employment are held by elected officials. Thus, public sector employers are more vulnerable to changes in the external political environment than are private sector employers. Second, many public sector employers are large organizations with diverse job titles, so there are enough different jobs to make wage comparisons between men and women possible. Third, there are enough women working for the government to make them an internal political force.

The comparable worth issue provides elected officials with some complex factors to evaluate in the external political and economic environment. One reason comparable worth developed as a political issue is the activity of coalitions of organizations advocating comparable worth. These coalitions include commissions on the status of women, working women's organizations, traditional labor unions, female legislators, and other interested groups. These coalitions attempt to increase public awareness and understanding of comparable worth and they also lobby for legislation. In some States, the filing of discrimination suits by such organizations was an effective pressure tactic.

Nonetheless, comparable worth remains a complex issue often misunderstood by the general public. In contrast, the voting public is well aware of the relationship between taxation and the increasing cost of providing government services. Although most public officials are reluctant to take a stand against comparable worth, even those who are sympathetic to the comparable worth issue answer to an electorate concerned about government budgetary responsibility. Government officials committed to avoiding tax increases while in office realize that comparable worth adjustments may require budgetary shifts from other programs.

One response public employers often make to demands for comparable worth adjustments is to commission a study

to determine whether their female and male employees are rewarded equitably. This can be an attractive short-run option because there is an inherent legitimacy in delaying action until a thorough study of the problem has been made. In the political arena, there is the added attractiveness that the results of the study may not have to be dealt with by one's own administration. Although relatively inexpensive, such a solution has potential political and economic costs. To date, the majority of the comparable worth studies show that women's jobs are undervalued in comparison to men's jobs. Once the study results are available, political pressure groups have a firmer base on which to act. Another risk to government employers is not to take action once the study is completed. Employers who do not act may be in jeopardy of having discrimination suits filed against them on the grounds that they knew female jobs were compensated unfairly, but took no action.

The cost of making comparable worth adjustments varies considerably by jurisdiction because of variations in numbers of employees, recommended adjustments, and methods of implementation. New Mexico was one of the first States to appropriate funds to implement comparable worth, allocating \$3.3 million to increase salaries in its lowest paid jobs. Women held about 86 percent of these jobs, and the remaining 14 percent were held primarily by Hispanic and Native American men. In contrast, Minnesota made an initial allocation of \$21.7 million and is expected to make an additional amount available to implement the adjustments over a period of 4 years. Suffering from severe unemployment and budget problems, Washington State made an initial appropriation of about \$100 a year for each person in affected job categories. This appropriation was primarily symbolic. Further adjustments are planned.<sup>4</sup>

A strategy used in the majority of jurisdictions implementing comparable worth adjustments is to phase them in over a period of several years. This approach offers several advantages to the employer. It allows gradual budget adjustments, provides sufficient time to review programs, when necessary, and permits identification and correction of problems in the implementation process. Similar phased adjustments are used to increase the minimum wage. Experience with minimum wage increases indicates that phased adjustments reduce the labor displacement effect of higher wages.

Elected officials who have an external environment which includes an informed and supportive electorate, strong comparable worth advocacy coalitions, and an expanding employment and tax base are the fortunate few. They can follow the example of Janet Gray Hayes, Mayor of San Jose, CA, who said following the comparable worth agreement between the city and Local 101 of the American Federation of State, County and Municipal Employees (AFSCME), "I am proud to be mayor of the city that took the first giant step toward fairness in the workplace for women. Today will go down in history as the day so-called women's work was recognized for its inherent value to society."<sup>5</sup>

Private employers are not immune from changes in the political environment. Although pressure for comparable worth has focused on the public sector, many employers speculate about the possibility of legislation spreading from the public to the private sector. Thus, some employer organizations lobby actively to discourage comparable worth legislation in general. A second concern focuses on current wage-setting practices, which even when codified and formalized often reflect the values of their originators. Therefore, as employee awareness of subjective elements in wage determination increases, so does the possibility of unionization efforts or Title VII suits. Employers concerned with these possibilities are reviewing their wage-setting practices, and a few are in the process of developing policies to initiate comparable worth adjustments.

*Internal environment.* Unlike the external environment, the internal issues raised by comparable worth are similar for public and private employers. There are two major internal issues. One is the effect of comparable worth adjustments on the organization's financial structure. Another is its impact on human resource administration.

As indicated earlier, estimates of the cost of comparable worth adjustments vary widely. For example, Minnesota's implementation costs were estimated to be approximately 1.25 percent of the personnel budget for the 1983-85 biennium. In contrast, implementation costs were estimated at 0.5 percent of the Burlington, VT, payroll budget and at least 5 percent of the State payroll budget of Washington.<sup>6</sup> The differences reflect how much was budgeted for equity increases, the speed of implementation, and the number and amount of equity adjustments.

It is even more difficult to estimate the possible costs of not making comparable worth adjustments. Discrimination suits entail litigation costs, and negative judgments can result in large backpay awards. Failure to make equity adjustment also may make an employer vulnerable to an expensive and unpredictable unionization campaign.

As a compensation issue, comparable worth has implications for human resource administration. Because comparable worth has as an objective the narrowing of wage differentials, it may affect perceptions of equity, status, and the desirability of jobs. Equity adjustments narrow wage differentials between higher paid, predominately male jobs and predominately female jobs. In most organizations, wage differentials and wage increases follow predictable patterns. Thus, wages paid for a particular job title have an established relationship with wages paid for other job titles. Once these wage parity relationships are formed, wage increases that deviate from parity often seem unfair to adversely affected employees. The perceived status of male and female jobs also may change as the differentials between predominately male and predominately female jobs narrow. Finally, an employer following a long-run policy of giving wage increases that narrow wage differentials may face labor turnover problems

among employees in its highest pay classifications.

Another issue is that employees in predominately male jobs may fear that comparable worth adjustments will result in their receiving smaller wage increases than they otherwise would, or perhaps taking a pay cut. Because of this fear, an issue in framing comparable worth legislation is whether there will be comparable worth "adjustments" or "increases." Adjustments imply that all jobs will be reviewed, with the possibility that some wages will be lowered.

There is anecdotal evidence to suggest that there have been some initial perceptions of comparable worth adjustment as violating established wage parity norms. However, it is likely that the new parity relationships will themselves eventually become the norms for evaluating wage setting. In addition, there may be more attention to upgrading job content and to changing the design of jobs receiving equity adjustments because higher wages make jobs more costly for employers. It may also open promotional opportunities by making the salaries for both male- and female-dominated jobs more similar.

## Unions

*External environment.* Factors in the external environment that affect employer organizations may also affect unions. However, because unions represent employees, environmental changes have a different meaning for unions than for employers. Female labor force participation rose dramatically during the last two decades. An increase in the number of women joining unions accompanied this increase in employment. Until recently, men were much more likely to be union members than were women, with 1 of every 4 male workers belonging to a union, compared with about 1 out of 7 female workers. Now, however, about half of all new union members are women. Currently, overall membership is falling, and organized labor is looking for ways to attract new members in areas such as white-collar work where historically there was relatively little union activity and where many women work.

Given the increasing numbers of women in the labor force and the emergence of the comparable worth issue, it is not surprising that some unions are major comparable worth advocates. The AFL-CIO passed a strong endorsement favoring comparable worth and is calling on its member unions to work for pay equity studies and to negotiate to upgrade wages paid for undervalued female jobs. Among the unions actively working to promote comparable worth are the American Federation of State, County and Municipal Employees (AFSCME); the Service Employees International Union (SEIU); the International Union of Electrical, Radio and Machine Workers (IUE); the Communications Workers of America (CWA); and the American Nurses Association (ANA). Tactics used include negotiating for comparable worth adjustments in collective bargaining contracts, lobbying for comparable worth laws, instituting litigation, and educating

members and the public at large about pay equity issues.

Comparable worth is potentially a powerful organizing issue. However, it faces some constraints in the external economic environment. For some unions, the possible trade-off between higher wages and fewer jobs is a major factor affecting decisionmaking about how vigorously comparable worth should be pursued. Some unions, such as the International Ladies' Garment Workers Union (ILGWU), operate in industries facing stiff competition from imported goods. In such industries, comparable worth adjustments could result in job losses, particularly because a large proportion of union members are women.

The way in which a union handles the comparable worth issue may also raise legal questions. For example, is a union in violation of Federal law if it does not attempt to get equity adjustments for female members? Unions have a duty to represent members fairly. This means that unions must act with good faith and honesty of purpose towards all employees in a bargaining unit. It is the union's responsibility to protect members against employer discrimination. If it does not do so, it may face a member's suit.<sup>7</sup>

*Internal issues.* The unions most active in support of comparable worth share several characteristics. First, they represent workers employed in organizations with diverse job titles because comparable worth questions are employer specific and require that an employer have different job titles so that comparisons can be made. Second, they have a high enough proportion of female members for women to be a viable political force within the union. These characteristics are shared by the previously mentioned unions. With the exception of the American Nurses Association, they also have a significant proportion of male members.

Comparable worth can create very real internal political issues for unions. Male members may oppose comparable worth adjustments if they have reason to believe that adjustments will be at their expense. Therefore, union leaders may face a balancing act between alienating female employees if comparable worth is not addressed, and alienating male employees by working for equity adjustments. Unions endeavor to educate their members regarding the concept and likely impact of comparable worth. It is not an issue that can be imposed on members with the expectation that

it will meet with wide acceptance.<sup>8</sup>

One approach unions can use is to consider low paying jobs generally, not just women's jobs, for equity adjustments. This broadens internal political support for comparable worth by increasing the number of employees who are eligible for adjustments. It also increases its acceptability by changing it from a women's issue to a fair treatment issue. Another approach is to negotiate for separate budget lines for equity adjustments and general wage increases. Separate budget lines communicate the idea that equity adjustments do not come at the expense of overall pay increases.

While some unions are working for comparable worth, others are not. Those less supportive are usually unions with predominately male memberships. In fact, some of these unions are avoiding comparable worth studies and adjustments. In Minnesota, police and firefighter unions broke ranks with other unions and began lobbying against comparable worth when a librarian's job was classified at the same level of pay as a firefighter's job.<sup>9</sup>

Comparable worth raises another important internal political issue for unions. Comparable worth may be a potentially potent organizing issue, if female workers perceive unionization as a way to achieve pay equity. However, if comparable worth occurs because of a legislated mandate or voluntary employer action, it may lessen the interest of unorganized female workers in unionization. Implementation of comparable worth might even reduce support of current members if they perceive that they will be adversely affected if union-supported wage adjustments result in narrowing of wage differentials.

The comparable worth issue is both controversial and multifaceted. One common question about comparable worth is whether it is possible to meaningfully compare different jobs. This is, however, not the question of concern to the organizations most directly involved in the comparable worth debate. The issue is not whether it is possible to meaningfully compare job content, but rather what effect comparable worth will have on the organization. Decisions to support or oppose comparable worth depend on perceptions of its organizational and political effect. This article outlines some of the questions that are considered by concerned organizations in their decisionmaking process. □

—FOOTNOTES—

<sup>1</sup>"Foreword," Subcommittee on Human Resources for the Joint Hearings on Pay Equity: Equal Pay for Work of Comparable Value, *Hearings held before the Subcommittees on Human Resources, Civil Service, Compensation and Employee Benefits of the Committee on Post Office and Civil Service, House of Representatives*, Sept. 16, 21, 30, and Dec. 2, 1982 (Washington, 1983).

<sup>2</sup>Mark R. Killingsworth, "The Economics of Comparable Worth: Analytical, Empirical and Policy Questions," in Heidi I. Hartmann, ed., *Comparable Worth* (Washington, National Academy Press, 1985), pp. 86-115.

<sup>3</sup>Heidi I. Hartmann and Donald J. Treiman, "Notes on the NAS Study of Equal Pay for Jobs of Equal Value," *Public Personnel Management*, Winter 1983, p. 415.

<sup>4</sup>Helen Remick, "An Update on Washington State," *Public Personnel*

*Management*, Winter 1983, p. 392.

<sup>5</sup>Robert L. Farnquist, David R. Armstrong, and Russell P. Strausbaugh, "Pandora's Worth: The San Jose Experience," *Public Personnel Management*, Winter 1983, p. 358.

<sup>6</sup>The National Council of Public Employers, *1984 Survey of Public Employees*, 1985.

<sup>7</sup>*The Wall Street Journal*, May 10, 1985, p. 27.

<sup>8</sup>Barbara N. McLennan, "Sex Discrimination in Employment and Possible Liabilities of Labor Unions: Implications of *County of Washington v. Gunther*," *Labor Law Journal*, January 1982, pp. 26-35.

<sup>9</sup>*The Wall Street Journal*, May 10, 1985, p. 27.

# Comparable worth: some questions still unanswered

*We know the issues surrounding and groups most likely to be affected by a national policy on comparable worth, but cannot quantify possible costs and benefits*

SANDRA E. GLEASON

A careful analysis of comparable worth as a national policy ideally should proceed by first defining the problem for which the concept of equal pay for different jobs of equal value to the employer is a perceived remedy. The first step could serve as the basis for the second step—determining the important causal factors and evaluating the costs and benefits of a comparable worth policy relative to alternative policies. Once these steps are completed, a remedy can be chosen through the political process based on informed judgments.

Unfortunately, as noted in the accompanying articles by Carolyn Bell and Karen Koziara, a complete and balanced policy analysis of comparable worth has not been conducted. As a consequence, questions remain unanswered, including: What is the magnitude of the employment impact resulting from labor supply and demand responses to the wage increases? What is the potential inflationary impact on the economy? What is the cost of comparable worth policy relative to alternative policies, such as occupational desegregation?

Economic theory can be used to predict the direction of labor market adjustments. We know the comparable worth wage increases required to remedy pay inequities for “underpaid” traditionally female-dominated jobs have averaged 20 percent; therefore, we can predict, other things being equal, that employers will hire fewer employees in these jobs. However, at the same time, the increase in the relative

wage will make these jobs more attractive, thereby encouraging more people, particularly women, to seek positions in these already crowded occupations. In addition, this wage increase will deter some women from moving into nontraditional jobs, thereby slowing the pace of occupational desegregation. However, because we do not have an estimate of the labor supply functions in the traditional female occupations, we do not have an estimate of the size of the labor supply effect.

In contrast, we do have some estimates of the elasticity of demand for broad categories of employees which can be used to make judgments, however crude, about the magnitude of the employment impact. These estimates suggest a relatively small displacement effect. For example, in 1975, Orley Ashenfelter and Ronald Ehrenberg estimated that the wage elasticity of demand for noneducation employees in State and local government is quite inelastic.<sup>1</sup> In 1984, Ronald Ehrenberg and Robert Smith estimated that a 20-percent wage increase would result in a 2- to 3-percent decrease in female employment overall at the State and local level.<sup>2</sup> However, if comparable worth continues to be implemented slowly over a multiyear period, the job displacement impact can be reduced. Current estimates by Sandra E. Gleason and Collette Moser suggest that the number of jobs eliminated each year would be less than the estimated annual attrition in the public sector if comparable worth is implemented over a 5-year period.<sup>3</sup>

The inelastic demand for labor in the public sector implies that aggregate earnings of those remaining employed will increase. However, even if the gainers as a group can compensate the job losers and still be better off, there will be

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social losses. The type of loss will depend on which employers are covered by the national policy. If only public sector and large private sector employers are covered, then employment may not decline. Those displaced will seek jobs in the noncovered sectors, thereby reducing wages in those sectors. The social loss in this case is the reduced productivity of the employee. In contrast, the maximum decrease in employment will occur if all employers are covered and if there is strict enforcement of the pay policy. The social cost is both less employment and less production. However, there may be some offsetting social benefits as well. For example, if low income women receiving noncash public assistance no longer require such aid after the wage increase, taxpayers' costs will be reduced as long as these women remain employed.<sup>4</sup> Unfortunately, there is no analysis available of the dollar costs and benefits associated with the full coverage and partial coverage scenarios, even though the employers and unions which expect to gain or lose from a policy on comparable worth have been identified. (See the Koziara article on pp. 13-16.)

In addition to the labor market effects, the potential for inflationary pressure generated by comparable worth wage increases must be evaluated realistically. The limited research available suggests that the maximum pay-equalizing effect to be expected is a decrease of no more than 4 percent.<sup>5</sup> The small magnitude of the predicted impact seems unlikely to set off severe inflation in the economy, but inflationary pressure will vary by industry. However, no estimates of inflation have been made, nor has the potential for offsetting factors which would raise employee productivity been studied. For example, some employers may have enough "organizational slack" to absorb the wage increases with little or no impact on consumer prices.<sup>6</sup>

Finally, little attention has been given to alternative policies. This may reflect the lack of consensus about what problem is to be remedied. As Carolyn Bell indicates, four problems have been discussed: female poverty, pre-labor market discrimination, occupational segregation, and sex-based wage discrimination. Comparable worth is not the best solution for all of these problems. However, contrary to the claims of some opponents, it is not necessarily the

most expensive remedy either. For example, some opponents advocate reliance on the market signals of higher wages in nontraditional occupations to encourage women to acquire education and training for better paying jobs. This approach is not costless if employers or the Federal Government assist this process by providing training. Some preliminary estimates of job training costs suggest that these can be higher than the cost of implementing some comparable worth wage adjustments.<sup>7</sup> Furthermore, if only 20 percent of the women employed in clerical and service occupations in 1981 were provided with programs designed to aid occupational change, the cost of training, counseling, and job placement services would be about \$14 billion.<sup>8</sup>

The research completed to date on the potential impact of a national pay policy based on the concept of comparable worth identifies the issues to be considered and predicts the directions of change in the labor market. However, we still have few estimates of the quantitative magnitude of these changes. As a consequence, we know who will gain and who will lose, but we do not know by how much. These missing pieces of information prevent a balanced evaluation of comparable worth as a national policy. □

—FOOTNOTES—

<sup>1</sup> Orley Ashenfelter and Ronald Ehrenberg, "The Demand for Labor in the Public Sector," in Daniel Hamermesh, ed., *Labor in the Public and Nonprofit Sectors* (Princeton, NJ, Princeton University Press, 1975).

<sup>2</sup> Ronald Ehrenberg and Robert Smith, *Comparable Worth in the Public Sector* (Cambridge, MA, National Bureau of Economic Research, 1984), NBER Working Paper, 1471.

<sup>3</sup> Sandra E. Gleason and Collette Moser, "Comparable Worth in the Public Sector: Why This Issue Won't Fade Away," mimeo, 1985.

<sup>4</sup> Sandra E. Gleason and Collette Moser, "Some Neglected Policy Implications of Comparable Worth," *Policy Studies Review*, May 1985, pp. 595-600.

<sup>5</sup> George Johnson and Gary Solon, *Pay Differences Between Women's and Men's Jobs: The Empirical Foundations of Comparable Worth Legislation* (Cambridge, MA, National Bureau of Economic Research, 1984), NBER Working Paper, 1472.

<sup>6</sup> Kalman Cohen and Richard Cyert, *Theory of the Firm: Resource Allocation in a Market Economy* (Englewood Cliffs, NJ, Prentice-Hall, Inc., 1965).

<sup>7</sup> Gleason and Moser, "Comparable Worth in the Public Sector."

<sup>8</sup> *Ibid.*

# Today's pension plans: how much do they pay?

*Benefit formulas in medium and large firms gave 30-year employees retiring on Jan. 1, 1984, at age 65 average monthly pensions of \$385 for those who earned \$15,000 during 1983*

DONALD G. SCHMITT

Under pension plans of medium and large firms, employees retiring on January 1, 1984, at age 65 after 30 years of service would have received monthly pensions averaging from \$385 for those earning \$15,000 in 1983 to \$886 for those earning \$40,000. The corresponding range for employees retiring after 20 years of service was \$263 to \$623. Social Security benefits, however, would significantly raise these levels of retirement income.

These data were calculated from benefit formulas of 832 pension plans in the 1984 Bureau of Labor Statistics survey of employee benefit plans.<sup>1</sup> The annual study covers the United States (excluding Alaska and Hawaii) and private industry establishments employing at least 50, 100, or 250 workers, depending on the industry. The 1984 survey sample consisted of 1,499 establishments, designed to statistically represent 21 million employees in 45,000 establishments.<sup>2</sup>

BLS field representatives obtained from survey respondents the written descriptions of pension plans that, under the Employee Retirement Income Security Act (ERISA), plan administrators are required to provide to covered employees. These descriptions include the formulas used in calculating employee benefits. Using the benefit formula for current service,<sup>3</sup> BLS calculated pensions that would have been paid to employees retiring on January 1, 1984, under each plan

by making alternative assumptions regarding the retirees' length of service and earnings history. (See appendix.)

According to the 1984 survey, 82 percent of the active workers in medium and large firms were covered by private retirement pension plans financed wholly or in part by their employers. The plans include defined benefit plans, money purchase plans, and career contribution plans.<sup>4</sup> The money purchase and career contribution plans, each accounting for only 2 percent of the total pension plan participants, were excluded from this analysis. Approximately 16.5 million workers participated in plans used in the calculation of the basic retirement benefits discussed here. Supplemental pension plans, available to a small number of workers in addition to their basic plan, also were excluded.

Finally, capital accumulation plans are not represented in this analysis. The number of these plans—which include profit-sharing, savings and thrift, and various stock plans—has increased in recent years.<sup>5</sup> Except for profit-sharing, these plans are relatively new, and it is difficult to determine their impact on retirement income. Moreover, many allow employees to obtain some portion of the benefits prior to retirement.

## Pension levels

Table 1 shows averages of monthly private pension payments calculated from the benefit formulas of plans surveyed in 1984. Because the formulas take account of length of service and, commonly, preretirement earnings as well, an-

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**Table 1. Average monthly private pension payments at normal retirement,<sup>1</sup> by final year's earnings and length of service, medium and large firms, 1984**

Final year's earnings	Years of service						
	10	15	20	25	30	35	40
<b>All participants</b>							
\$15,000	\$137	\$201	\$263	\$325	\$385	\$438	\$486
\$20,000	165	240	314	386	456	516	571
\$25,000	202	295	384	472	555	625	687
\$30,000	242	355	462	565	662	743	814
\$35,000	283	416	542	661	772	863	942
\$40,000	326	479	623	760	886	988	1,075
<b>Professional, administrative participants</b>							
\$15,000	\$133	\$194	\$254	\$312	\$367	\$416	\$458
\$20,000	170	246	321	393	462	520	571
\$25,000	218	316	410	501	586	657	718
\$30,000	269	393	510	621	723	807	878
\$35,000	323	473	613	747	866	963	1,044
\$40,000	378	554	720	875	1,014	1,126	1,216
<b>Technical, clerical participants</b>							
\$15,000	\$131	\$192	\$251	\$308	\$363	\$410	\$451
\$20,000	169	247	323	396	465	523	573
\$25,000	218	319	417	510	596	668	729
\$30,000	271	398	519	634	738	822	895
\$35,000	325	480	625	762	883	982	1,065
\$40,000	381	564	734	892	1,033	1,147	1,241
<b>Production participants</b>							
\$15,000	\$142	\$209	\$275	\$341	\$406	\$464	\$519
\$20,000	160	233	305	377	449	511	570
\$25,000	185	270	353	436	517	586	649
\$30,000	212	311	406	499	589	666	736
\$35,000	240	353	460	563	664	747	823
\$40,000	269	394	513	629	739	831	912

<sup>1</sup>The maximum pension available, not reduced for early retirement or joint-and-survivor annuity, was calculated under each pension plan using the earnings and service assumptions shown. Workers are assumed to have retired at age 65 with a total working career of 40 years.

Computations exclude 4 percent of participants in money purchase plans or plans with benefits based on career contributions.

nuities under each plan were determined for 42 combinations of service and earnings. In all cases, the data apply to workers retiring on January 1, 1984, at age 65.

Average benefits varied widely among the age-service combinations. The range for all pension plan participants was from \$137 monthly for retirees with 10 years of service and earning \$15,000 in 1983 to \$1,075 for retirees with 40 years of service and final earnings of \$40,000.<sup>6</sup>

Nevertheless, patterns did appear in the findings. Average payments increased, for example, with each rise in service and earnings. The amount of increase, however, grew smaller as the length of service increased, particularly for service beyond 30 years. This decreasing return for extra years of service mainly reflects provisions that limit the number of years credited in the payment calculation. One-third of all pension plan participants were covered by such provisions.<sup>7</sup> Also contributing to this result are formulas that provide a lower benefit rate after specified years of service, for example, 1.5 percent of earnings per year of service up to 20 years, and 1 percent thereafter.

At each service period examined, benefits increased with the assumptions of higher final earnings. Moreover, at the all-participant level, for a given increase in earnings, the

dollar amount of the pension rise was greater at higher earnings levels. Thus, for employees retiring after 30 years of service, the average pension increased by \$71 a month when earnings rose from \$15,000 to \$20,000 and by \$114 when earnings moved from \$35,000 to \$40,000. In relative terms, when worker earnings increased from \$15,000 to \$20,000 (33 percent), benefits went up by 18 percent; the considerably smaller percentage growth in earnings from \$35,000 to \$40,000 (14 percent) was accompanied by a 15-percent increase in pensions.

The relationship between benefit levels and earnings reflects the influence of a number of pension plan features. Benefits as a percent of preretirement earnings (replacement rates) are raised for retirees at the lower end of the earnings distribution when pension plans guarantee minimum benefit levels. Benefit replacement rates are also raised for low-wage earners when plans contain dollar-amount benefit formulas that provide annuities independent of prior earnings. Conversely, provision for maximum benefit levels reduces the return to retirement plan participants with relatively high earnings.<sup>8</sup> High-wage earners do have an advantage when so-called step-rate excess formulas are in effect; these formulas calculate benefits as a percent of prior earnings and specify a higher percentage return on that part of earnings above a specified level than below that level.<sup>9</sup>

Levels of private pension benefits also varied by occupational group. At equal levels of pay and years of service, white-collar groups (professional-administrative and technical-clerical) tended to receive higher benefits than blue-collar or production workers. This held true in all cases except at the lowest earnings level (\$15,000), where production workers had slightly larger benefits. As earnings increased from \$15,000 to \$40,000, however, the average gain in benefit amounts was much smaller for production workers. Half of the production workers had pension formulas specifying dollar amounts of benefits, usually independent of prior earnings. Conversely, most of the white-collar workers had earnings-based pension formulas, which calculate annuities as percentages of preretirement earnings.<sup>10</sup>

Assuming equal levels of earnings and service, technical-clerical workers commonly were eligible for greater benefits than professional-administrative workers. The latter employees, however, actually average higher salaries and thus tend to receive larger pension benefits at retirement.

Pension benefits varied widely within, as well as among, service-earnings groupings. Table 2 shows the distribution of participants by amount of benefits at selected service and earnings levels. As can be seen, retirees with 30 years of service and \$30,000 in final earnings could receive annuities ranging from less than \$100 monthly to \$1,200 or more. This spread in benefits reflects the wide variety of benefit formulas in private pension plans. The dispersion widens as earnings increase, because the benefits of workers with earnings-based formulas rise, while benefits remain constant

**Table 2. Percent of participants in private pension plans by expected annuity at normal retirement, selected combinations of final year's earnings and length of service, medium and large firms, 1984**

Monthly pension <sup>1</sup>	20 years of service				25 years of service				30 years of service			
	\$15,000	\$20,000	\$25,000	\$30,000	\$15,000	\$20,000	\$25,000	\$30,000	\$15,000	\$20,000	\$25,000	\$30,000
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than \$100	3.0	1.1	.8	.5	1.5	.8	.6	—	1.2	.8	.6	—
\$100—\$149	7.3	4.9	3.1	2.5	3.6	1.8	1.1	(1.2)	2.6	.8	.6	(.6)
\$150—\$199	15.1	7.7	4.8	4.5	8.4	4.6	2.7	2.7	4.7	2.2	1.4	1.5
\$200—\$249	23.0	11.9	9.1	4.5	12.4	7.4	4.8	3.7	9.2	7.5	4.8	3.9
\$250—\$299	15.6	17.0	4.9	5.2	20.5	9.8	7.3	4.5	11.9	4.0	3.4	2.8
\$300—\$349	15.6	21.9	13.0	8.1	12.4	12.7	4.6	4.3	15.9	7.7	4.6	4.5
\$350—\$399	13.9	21.1	22.3	10.1	16.8	14.2	8.2	6.1	13.3	11.5	6.2	3.7
\$400—\$449	2.4	6.1	15.6	11.3	5.4	15.6	12.1	4.2	7.7	12.8	3.6	2.5
\$450—\$499	2.2	3.5	11.2	9.5	12.9	20.2	16.4	11.9	13.4	11.8	11.1	6.7
\$500—\$549	.6	1.4	5.4	16.9	2.1	4.3	14.4	8.6	8.0	14.8	8.3	5.8
\$550—\$599	(1.3)	1.2	3.7	7.6	1.0	2.1	10.2	7.1	6.6	14.3	15.8	11.1
\$600—\$649	—	1.5	1.8	6.5	1.2	2.7	6.5	11.9	1.5	4.3	10.9	2.9
\$650—\$699	—	.5	2.1	5.4	.6	1.3	3.9	8.4	.8	1.2	8.7	8.2
\$700—\$749	—	(.2)	.3	2.3	.3	.8	1.6	6.5	1.5	2.4	5.5	3.6
\$750—\$799	—	—	1.1	1.9	.5	1.0	2.1	6.5	.5	1.7	6.4	16.2
\$800—\$849	—	—	(.8)	.6	(.4)	(.7)	1.4	4.7	(1.0)	.4	3.1	4.9
\$850—\$899	—	—	—	.8	—	—	.9	2.9	—	.4	.8	5.4
\$900—\$949	—	—	—	.6	—	—	.3	1.2	—	.4	1.2	2.4
\$950—\$999	—	—	—	.6	—	—	.8	1.2	—	.5	.8	6.3
\$1,000—\$1,049	—	—	—	(.6)	—	—	(.1)	.6	—	(.4)	1.2	2.0
\$1,050—\$1,099	—	—	—	—	—	—	—	.8	—	—	.3	1.1
\$1,100—\$1,149	—	—	—	—	—	—	—	.3	—	—	.2	1.2
\$1,150—\$1,199	—	—	—	—	—	—	—	.5	—	—	.5	.6
\$1,200 or more	—	—	—	—	—	—	—	.4	—	—	.1	2.1

<sup>1</sup>The maximum pension available, not reduced for early retirement or joint-and-survivor annuity, was calculated under each pension plan using the earnings and service assumptions shown. Workers are assumed to have retired at age 65 with a total working career of 40 years.

Computations exclude 4 percent of participants in money purchase plans or plans with benefits based on career contributions.

NOTE: To avoid showing small proportions scattered at or near the extremes of the distributions, the percentages of employees in these intervals have been accumulated and are shown in the interval above or below the extreme interval containing at least .5 percent. The percentages representing these employees are shown in parentheses. Because of rounding, sums of individual items may not equal 100.

when formulas provide flat dollar annuities per year of service independent of earnings. Dispersion also widens as service increases, but to a lesser extent. This is because nearly all pension plans incorporate length of service in the benefit formula.

### Replacement rates

Pension benefits are frequently evaluated through the use of replacement rates, that is, expressing the annuities as percentages of preretirement earnings. This facilitates examination of the degree to which pensions permit maintenance of preretirement standards of living. Because consumption patterns, tax liabilities, and rates of personal savings change upon retirement, living standards are typically maintained at less than a 100-percent replacement rate. The final report of the President's Commission on Pension Policy includes an estimate that, for single persons retiring in 1980, 79 percent of gross preretirement income was needed to maintain living standards at a \$6,500 level of preretirement income; a 51-percent rate was needed at a \$50,000 income level. The corresponding ratios for married couples were 86 and 55 percent.<sup>11</sup>

Estimates of replacement rates required to maintain living standards vary, depending in part on the precise definition given to the replacement rate concept. Are the annuities and preretirement earnings measured before or after taxes? Is the preretirement earnings base the final year's earnings? Is it some average of earnings in years immediately preceding

retirement (such as the 3 years of highest earnings in the last 10)? Or is it an average of earnings over the entire working career?<sup>12</sup> In this analysis, pension benefits are measured before taxes and preretirement earnings are defined as gross earnings in the final full year of employment. Consequently, replacement rates reported here are lower than if other definitions of earnings were employed, because earnings typically peak in the final year of work.<sup>13</sup>

Table 3 presents the monthly pension payments shown in table 1 (annualized) as percentages of earnings in the final year of work. These replacement rates rise substantially as service increases from 10 to 40 years. At the \$30,000 level of earnings, for example, the average replacement rate for all pension plan participants increases from 18.5 percent at 20 years of service to 26.5 percent at 30 years and 32.6 percent at 40 years.

Replacement rates for the overall group, however, tend to decrease as earnings levels increase within each service category. This results primarily from plans for production workers. While white-collar workers experience slight increases in average replacement rates as earnings rise above \$20,000, production workers experience a marked decline. As indicated earlier, the explanation for this difference lies in the relatively greater incidence of earnings-based benefit formulas among white-collar workers.<sup>14</sup>

As shown in table 4, earnings-based formulas tend to yield higher replacement rates as final earnings rise. Dollar-amount formulas (commonly providing benefits independent

**Table 3. Average replacement rates<sup>1</sup> of private pensions at normal retirement, by final year's earnings and length of service, medium and large firms, 1984**

Final year's earnings	Years of service						
	10	15	20	25	30	35	40
<b>All participants</b>							
\$15,000	11.0	16.1	21.0	26.0	30.8	35.0	38.9
\$20,000	9.9	14.4	18.8	23.2	27.4	31.0	34.3
\$25,000	9.7	14.2	18.4	22.7	26.6	30.0	33.0
\$30,000	9.7	14.2	18.5	22.6	26.5	29.7	32.6
\$35,000	9.7	14.3	18.6	22.7	26.5	29.6	32.3
\$40,000	9.8	14.4	18.7	22.8	26.6	29.6	32.3
<b>Professional, administrative participants</b>							
\$15,000	10.6	15.5	20.3	25.0	29.4	33.3	36.6
\$20,000	10.2	14.8	19.3	23.6	27.7	31.2	34.3
\$25,000	10.5	15.2	19.7	24.0	28.1	31.5	34.5
\$30,000	10.8	15.7	20.4	24.8	28.9	32.3	35.1
\$35,000	11.0	16.2	21.0	25.6	29.7	33.0	35.8
\$40,000	11.3	16.6	21.6	26.3	30.4	33.8	36.5
<b>Technical, clerical participants</b>							
\$15,000	10.5	15.4	20.1	24.6	29.0	32.8	36.1
\$20,000	10.1	14.8	19.4	23.8	27.9	31.4	34.4
\$25,000	10.5	15.3	20.0	24.5	28.6	32.1	35.0
\$30,000	10.8	15.9	20.8	25.4	29.5	32.9	35.8
\$35,000	11.1	16.5	21.4	26.1	30.3	33.7	36.5
\$40,000	11.4	16.9	22.0	26.8	31.0	34.4	37.2
<b>Production participants</b>							
\$15,000	11.4	16.7	22.0	27.3	32.5	37.1	41.5
\$20,000	9.6	14.0	18.3	22.6	26.9	30.7	34.2
\$25,000	8.9	13.0	16.9	21.0	24.8	28.1	31.2
\$30,000	8.5	12.4	16.2	20.0	23.6	26.6	29.4
\$35,000	8.2	12.1	15.8	19.3	22.8	25.6	28.2
\$40,000	8.1	11.8	15.4	18.9	22.2	24.9	27.4

<sup>1</sup>Retirement annuity as a percent of earnings in the final year of work. The maximum pension available, not reduced for early retirement or joint-and-survivor annuity, was calculated under each pension plan using the earnings and service assumptions shown. This benefit level was then expressed as a percent of earnings in the last year of employment. Workers are assumed to have retired at age 65 with a total working career of 40 years.

Computations exclude 4 percent of participants in money purchase plans or plans with benefits based on career contributions.

NOTE: Data exclude Social Security payments, which are included in the replacement rates of tables 5 and 6.

of earnings) produce the opposite result. In fact, dollar-amount formulas produced the highest replacement rates for final earnings of \$15,000—the lowest level used in this analysis.

Earnings-based private pensions commonly are integrated with Social Security benefits. This explains the tendency for greater replacement rates at higher earnings levels under these private formulas. The Social Security benefit formula yields pensions that, as a percent of preretirement earnings, are greater for retirees with relatively low earnings histories, and it takes account only of earnings up to the Social Security taxable wage base—\$37,800 in 1984. Integrated private pension plans counter this by providing higher replacement rates as earnings rise. Dollar-amount pension formulas, however, are rarely integrated with Social Security benefits.<sup>15</sup>

### Social Security as a component

Private pension plans do not operate independently. They supply retirement income as part of a "three-legged stool," which also includes Social Security and individual sav-

ings.<sup>16</sup> Replacement rates, consequently, become more meaningful when Social Security benefits are added to the computation.

The Office of the Actuary, Social Security Administration, determined the benefit amounts that would be applicable for workers with the earnings histories used in this study. These Social Security benefits were added to the private pension benefits presented in table 1, and new replacement rates were determined using the combination of these two sources of retirement income.

Table 5 shows average replacement rates of combined private pension and Social Security retirement income for a single worker (one who is not receiving spousal benefits under Social Security). The inclusion of Social Security retirement benefits raises the rates significantly from those in table 3. Except at the higher earnings and service levels, Social Security benefits provide the major share of total retirement income.

Inclusion of Social Security benefits also changes the relationship between the size of the replacement rate and the preretirement earnings level. Private pension plans, on average, yield slightly higher replacement rates for white-collar workers, when earnings rise above \$20,000 (table 3). After adding Social Security benefits to the replacement rate calculation, however, the highest replacement rates are at

**Table 4. Average replacement rates<sup>1</sup> of private pensions at normal retirement, by type of benefit formula<sup>2</sup> and final year's earnings and length of service, medium and large firms, 1984**

Final year's earnings	Years of service						
	10	15	20	25	30	35	40
<b>Terminal earnings</b>							
\$15,000	8.9	13.4	18.0	22.6	26.9	30.5	33.5
\$20,000	9.3	14.1	19.0	23.7	28.1	31.8	34.9
\$25,000	10.0	15.2	20.4	25.3	30.0	33.8	36.9
\$30,000	10.5	16.0	21.4	26.7	31.5	35.4	38.5
\$35,000	11.0	16.7	22.3	27.7	32.6	36.5	39.6
\$40,000	11.4	17.3	23.0	28.4	33.5	37.4	40.6
<b>Career earnings</b>							
\$15,000	9.7	12.2	14.1	15.4	16.8	17.8	18.5
\$20,000	10.0	12.6	14.5	16.0	17.3	18.3	19.0
\$25,000	10.2	13.0	15.0	16.6	18.0	19.1	19.8
\$30,000	10.4	13.3	15.4	17.2	18.6	19.7	20.4
\$35,000	10.6	13.6	15.8	17.6	19.1	20.2	21.0
\$40,000	10.8	14.0	16.2	18.0	19.5	20.7	21.5
<b>Dollar amount</b>							
\$15,000	11.6	17.4	23.2	29.0	34.7	39.8	44.8
\$20,000	8.9	13.3	17.8	22.2	26.6	30.5	34.3
\$25,000	7.4	11.1	14.9	18.5	22.3	25.5	28.7
\$30,000	6.5	9.7	12.9	16.1	19.3	22.1	24.9
\$35,000	5.8	8.6	11.5	14.3	17.2	19.7	22.2
\$40,000	5.2	7.8	10.4	13.0	15.5	17.8	20.0

<sup>1</sup>Retirement annuity as a percent of earnings in the final year of work. The maximum pension available, not reduced for early retirement or joint-and-survivor annuity, was calculated under each pension plan using the earnings and service assumptions shown. This benefit level was then expressed as a percent of earnings in the last year of employment. Workers are assumed to have retired at age 65 with a total working career of 40 years.

Computations exclude 4 percent of participants in money purchase plans or plans with benefits based on career contributions.

<sup>2</sup>Terminal earnings formulas calculate annuities as percents of earnings in the final years of work—for example, the 5 highest consecutive years of earnings in the last 10. Career earnings formulas are similar, but take account of earnings throughout an employee's career. Under dollar-amount formulas, workers' years of service are multiplied by a dollar amount to calculate benefit payments.

**Table 5. Average replacement rates<sup>1</sup> of private pensions and Social Security retirement income (without spousal benefit) combined, by final year's earnings and length of service, medium and large firms, 1984**

Final year's earnings	Years of service						
	10	15	20	25	30	35	40
<b>All participants</b>							
\$15,000	53.9	59.0	64.0	69.0	73.8	78.0	81.8
\$20,000	49.0	53.5	58.0	62.3	66.5	70.1	73.4
\$25,000	42.4	46.8	51.1	55.3	59.3	62.7	65.7
\$30,000	37.5	42.0	46.3	52.6	54.3	57.5	60.4
\$35,000	33.8	38.4	42.7	46.8	50.6	53.7	56.4
\$40,000	30.9	35.5	39.8	43.9	47.7	50.7	53.3
<b>Professional, administrative participants</b>							
\$15,000	53.6	58.5	63.3	67.9	72.3	76.2	79.6
\$20,000	49.3	53.9	58.4	62.7	66.8	70.3	73.4
\$25,000	43.2	47.9	52.4	56.7	60.8	64.2	67.2
\$30,000	38.6	43.5	48.2	52.6	56.7	60.1	62.9
\$35,000	35.2	40.3	45.1	49.7	53.8	57.1	59.9
\$40,000	32.4	37.7	42.7	47.3	51.5	54.9	57.6
<b>Technical, clerical participants</b>							
\$15,000	53.4	58.3	63.0	67.6	72.0	75.8	79.0
\$20,000	49.3	54.0	58.5	63.0	67.0	70.5	73.5
\$25,000	43.2	48.0	52.7	57.2	61.3	64.8	67.7
\$30,000	38.6	43.7	48.6	53.2	57.3	60.7	63.6
\$35,000	35.2	40.6	45.5	50.2	54.4	57.8	60.6
\$40,000	32.5	38.0	43.1	47.8	52.1	55.5	58.3
<b>Production participants</b>							
\$15,000	54.3	59.7	65.0	70.2	75.4	80.1	84.5
\$20,000	48.7	53.1	57.4	61.7	66.1	69.8	73.3
\$25,000	41.6	45.6	49.6	53.6	57.5	60.8	63.8
\$30,000	36.3	40.2	44.0	47.8	51.4	54.4	57.2
\$35,000	32.3	36.2	39.9	43.4	46.9	49.7	52.3
\$40,000	29.2	32.9	36.5	40.0	43.3	46.0	48.4

<sup>1</sup>Retirement annuity as a percent of earnings in the final year of work. The maximum pension available, not reduced for early retirement or joint-and-survivor annuity, was calculated under each pension plan using the earnings and service assumptions shown. This benefit level was then expressed as a percent of earnings in the last year of employment. Workers are assumed to have retired at age 65 with a total working career of 40 years.

Computations exclude 4 percent of participants in money purchase plans or plans with benefits based on career contributions.

**Table 6. Average replacement rates<sup>1</sup> of private pensions and Social Security retirement income (with spousal benefit) combined, by final year's earnings and length of service, medium and large firms, 1984**

Final year's earnings	Years of service						
	10	15	20	25	30	35	40
<b>All participants</b>							
\$15,000	75.4	80.4	85.4	90.3	95.1	99.4	103.2
\$20,000	68.6	73.1	77.5	81.8	86.0	89.6	92.9
\$25,000	58.7	63.1	67.4	71.6	75.6	79.0	81.9
\$30,000	51.4	55.9	60.2	64.3	68.2	71.4	74.2
\$35,000	45.8	50.4	54.3	58.4	62.6	65.7	68.4
\$40,000	41.4	46.0	50.3	54.4	58.2	61.3	63.9
<b>Professional, administrative participants</b>							
\$15,000	75.0	79.8	84.6	89.3	93.7	97.6	101.0
\$20,000	68.9	73.4	77.9	82.3	86.4	89.9	92.9
\$25,000	59.4	64.1	68.6	73.0	77.0	80.5	83.4
\$30,000	52.4	57.4	62.1	66.5	70.6	74.0	76.8
\$35,000	47.2	52.4	57.2	61.7	65.8	69.2	71.9
\$40,000	43.0	48.2	53.2	57.9	62.0	65.4	68.1
<b>Technical, clerical participants</b>							
\$15,000	74.8	79.7	84.4	89.0	93.4	97.1	100.4
\$20,000	68.8	73.5	78.1	82.4	86.6	90.1	93.1
\$25,000	59.4	64.3	69.0	73.4	77.6	81.0	84.0
\$30,000	52.5	57.6	62.4	67.0	71.2	74.6	77.5
\$35,000	47.3	52.6	57.6	62.3	66.4	69.8	72.7
\$40,000	43.1	48.6	53.6	58.4	62.6	66.0	68.9
<b>Production participants</b>							
\$15,000	75.7	81.0	86.3	91.6	96.8	101.4	105.8
\$20,000	68.3	72.7	77.0	81.3	85.6	89.3	92.9
\$25,000	57.8	61.9	65.9	69.9	73.8	77.1	80.1
\$30,000	50.2	54.1	57.9	61.6	65.2	68.3	71.1
\$35,000	44.4	48.2	51.9	55.4	58.9	61.7	64.4
\$40,000	39.7	43.4	47.0	50.5	53.8	56.5	59.0

<sup>1</sup>Retirement annuity as a percent of earnings in the final year of work. The maximum pension available, not reduced for early retirement or joint-and-survivor annuity, was calculated under each pension plan using the earnings and service assumptions shown. This benefit level was then expressed as a percent of earnings in the last year of employment. Workers are assumed to have retired at age 65 with a total working career of 40 years.

Computations exclude 4 percent of participants in money purchase plans or plans with benefits based on career contributions.

the lower earnings levels. As already noted, the Social Security benefit formula provides higher replacement rates to lower wage earners.

If the retired worker has a husband or wife age 65 or over who is not eligible for a Social Security benefit on his or her own account, an additional benefit from Social Security equal to 50 percent of the worker's benefit is payable to the spouse. Adding this benefit to the worker's private pension

and Social Security payments results in the average replacement rates presented in table 6. Here, except in the high income and short service examples, the data typically show replacement rates of 60 percent or more. Indeed, workers with relatively low earnings and long service may have all or nearly all of their preretirement income replaced by combined private pension and Social Security benefits when the latter includes an additional amount for the spouse. □

FOOTNOTES

<sup>1</sup>Industrial coverage includes mining; construction; manufacturing; transportation, communications, electric, gas, and sanitary services; wholesale trade; retail trade; finance, insurance, and real estate; and selected services. Major findings of the 1984 survey are reported in *Employee Benefits in Medium and Large Firms, 1984*, Bulletin 2237 (Bureau of Labor Statistics, 1985). For information on the background and conduct of the survey, see Robert Frumkin and William Wiatrowski, "Bureau of Labor Statistics takes a new look at employee benefits," *Monthly Labor Review*, August 1982, pp. 41-45.

<sup>2</sup>Excluded from the survey were executives (those whose decisions have direct and substantial effects on an organization's policymaking), part-time, temporary, and seasonal workers, and operating employees in constant travel status, such as airline flight crews and long-distance truck-drivers.

<sup>3</sup>When pension formulas are revised, the new formula may apply only to "current" service, that is, service from the date of the revision. Prior service may still be covered under the previous benefit formula.

<sup>4</sup>Defined benefit plans contain a formula for calculating retirement benefits (for example, a specified percent of earnings or flat dollar amount for each year of service) and obligate the employer to contribute to a fund whatever amounts are necessary to provide the benefits so determined. Benefits under career contribution plans are directly related to contributions made by the employer or both the employer and employee. Money purchase plans do not specify benefit levels; instead, they obligate the employer to contribute money to a pension fund according to a formula (such as a specified percent of earnings).

<sup>5</sup>See "The World of Pensions Ten Years After ERISA," *EBRI Issue Brief* (Employee Benefit Research Institute, September 1984), p. 9.

<sup>6</sup>As described in the technical appendix, based on year-to-year changes in national average wage levels, earnings histories were developed leading to the specified pay levels in 1983.

<sup>7</sup>*Employee Benefits in Medium and Large Firms, 1984*, p. 11.

<sup>8</sup>Fewer than 1 percent of the participants had plans with floors providing a specified minimum monthly benefit. Twelve percent had ceilings limiting the maximum size of the benefit. These maximums are independent of ceilings imposed by tax laws, which are substantially higher than those specified in the private pension plans examined.

<sup>9</sup>Step-rate excess formulas provide a way of integrating private and Social Security benefits. See Donald Bell and Diane Hill, "How social security payments affect private pensions," *Monthly Labor Review*, May 1984, pp. 15–20.

<sup>10</sup>According to the Bureau's 1984 employee benefits study, 92 percent of professional-administrative participants, 86 percent of technical-clerical participants, and 46 percent of production participants were covered by earnings-based pension formulas. See *Employee Benefits in Medium and Large Firms, 1984*, table 39.

<sup>11</sup>*Coming of Age: Toward a National Retirement Income Policy* (President's Commission on Pension Policy, February 26, 1981), pp. 42–43. Earlier estimates are in Peter Henle, "Recent trends in retirement benefits

related to earnings," *Monthly Labor Review*, June 1972, p. 18; and Jane L. Ross, *Maintenance of Preretirement Standards of Living After Retirement*, Technical Analysis Paper No. 10 (Office of the Assistant Secretary of Planning and Evaluation, Department of Health, Education, and Welfare, 1976).

<sup>12</sup>These alternatives parallel the varying definitions of earnings found in earnings-based pension benefit formulas. See *Employee Benefits in Medium and Large Firms, 1984*, tables 39 and 41.

<sup>13</sup>For recent discussions of the replacement rate concept, see Michael J. Boskin and John B. Shoven, *Concepts and Measures of Earnings Replacement During Retirement*, Working Paper No. 1360 (Cambridge, MA., National Bureau of Economic Research, 1984); and Congressional Research Service, *Designing a Retirement System for Federal Workers Covered by Social Security*, 98th Cong., 2d sess., Committee Print 98–17 (Committee on Post Office and Civil Service, House of Representatives, 1985), pp. 305–15.

<sup>14</sup>See footnote 10.

<sup>15</sup>See Bell and Hill, "How social security payments affect private pensions."

<sup>16</sup>See *Coming of Age*, pp. 12–14.

## APPENDIX: Analyzing pension plans

This study of pension benefit levels follows one of a number of alternative approaches to examining private pension plan provisions. A common approach is to review individual plan provisions, such as vesting requirements, early and normal retirement ages, benefit formulas, and pre- and post-retirement survivor options.<sup>1</sup> This approach provides a wealth of detail about plan provisions but does not permit summarization on an overall plan basis.

Such summarization is possible through examination of amounts employers spend on funding their pension liabilities, either in terms of dollars per employee per year, cents per hour worked, or percent of total compensation outlays.<sup>2</sup> Employer cost levels, however, are commonly influenced not only by plan provisions, but also by such characteristics of the covered work force as age, length of service, and earnings history and the actuarial assumptions used in financing individual plans.<sup>3</sup>

The approach used here looks at the level of benefits available under plans in effect in 1984. It focuses on the pensions payable to workers retiring on January 1, 1984, under the latest (current service) benefit formulas of their pension plans at that time.

Aside from the pension formula itself, retirement benefits may be affected by possible coordination of private benefits with Social Security payments, limits on years of credited service, and minimums and maximums on benefits. These were taken into account in calculating retirees' pensions for this analysis. Also, many plans had more than one pension formula, and specified use of the formula providing the highest benefit for each worker's circumstances. When multiple formulas were found, each alternative within a plan was examined and, for each combination of years of service and earnings considered for study, the formula selected was the one yielding the highest pension.

Nevertheless, the study did not take account of all factors affecting a retiree's pension. For example, it did not consider benefit reductions to finance continuation of payments to a surviving spouse (joint-and-survivor annuity). Similarly, the possibility of post-retirement pension increases—either on an ad hoc basis or through an automatic cost of living adjustment formula—was ignored.

After determination of the pension benefits under individual plans, overall averages were computed. In computing these averages, individual plans were weighted by the number of active workers participating in each plan.<sup>4</sup>

Benefits under a given pension plan are influenced by retirement age, length of service with the firm, and earnings history. It is, therefore, necessary to specify values for these variables to determine retirement benefits. One approach is to assume average conditions prevailing throughout the economy—average retirement age, average seniority, average earnings. This approach, however, ignores the fact that benefit formulas in individual pension plans are influenced by the characteristics of the workers that they cover.<sup>5</sup>

Consequently, in the approach followed here, age 65 was chosen as the assumed retirement age because all workers are entitled to their fully accrued benefit at that age under the Employee Retirement Income Security Act. (Sixty-three percent of the participants in the pension plans studied, however, were under plans which allowed for full retirement with an unreduced pension before age 65.)

Instead of using a single assumption regarding the employee's length of service and earnings history, the multiple assumptions shown on the tables were used. The earnings levels specified represent the employee's gross earnings in the final year of work (1983). Earnings levels in each year from 1944 to 1983 were then developed from these final earnings using year-to-year changes in Social Security data

on national average wage levels.<sup>6</sup>

The same final earnings levels and earnings histories were used for all three occupational groups studied—professional-administrative, technical-clerical, and production workers. Nevertheless, some of the final earnings levels presented would not have wide applicability in each occupational group. For example, it is unlikely that many technical-clerical workers in medium and large firms had final earnings as high as \$40,000, nor is it likely that many professional-administrative workers had final earnings as low as \$15,000 in 1983. Because pension benefit formulas are often designed for a specific group of workers with a known range of earnings, some distortion in benefits at

unlikely earnings levels is possible. Thus, when examining the results of this analysis, the focus should be on the benefits provided at earnings levels applicable to a particular occupational group.

Social Security benefits are important not only as a source of retirement income but also as a factor affecting benefits under many private pension plans. For example, a common approach to integrating private and public annuities is to reduce private pensions by a percentage of Social Security benefits.<sup>7</sup> To estimate benefits under the Social Security system, it was assumed that an employee worked in covered employment for a total of 40 years.<sup>8</sup>

—FOOTNOTES—

<sup>1</sup> See, for example, *Employee Benefits in Medium and Large Firms, 1984*.

<sup>2</sup> Such data were developed in the Bureau's survey of employer expenditures for employee compensation, which has been discontinued. See, for example, *Employee Compensation in the Private Nonfarm Economy, 1977*, Summary 80-5 (Bureau of Labor Statistics, 1980).

<sup>3</sup> Differences in labor force characteristics and actuarial assumptions may be accounted for by estimating what it would cost to provide surveyed pension plans to a standardized work force, using uniform actuarial assumptions. For an illustration of this approach, see *Total Compensation Comparability: Background, Method, Preliminary Results* (Compensation Group, United States Office of Personnel Management, 1981).

<sup>4</sup> Sample weights assigned to each surveyed establishment were also applied to provide representation of all establishments covered by the survey, not only those providing data. The resulting averages are measures of benefits payable under assumptions discussed in the remainder of this appendix. They are not, however, measures of average benefits actually

being received by retirees. For such measures, see Linda Drazga Maxfield and Virginia P. Reno, "Distribution of Income Sources of Recent Retirees: Findings From the New Beneficiary Survey," *Social Security Bulletin*, January 1985, pp. 7-13. Also see *Findings From the Survey of Private Pension Benefit Amounts* (Office of Pension and Welfare Benefit Programs, U.S. Department of Labor, 1985).

<sup>5</sup> Furthermore, average earnings of all workers are considerably less than the average for full-time employees nearing the retirement age. See Alicia H. Munnell, *The Economics of Private Pensions* (Washington, Brookings Institution, 1982), pp. 25-27.

<sup>6</sup> See *Social Security Bulletin, Annual Statistical Supplement, 1983*, p. 28.

<sup>7</sup> See Bell and Hill, "How social security payments affect private pensions."

<sup>8</sup> Actually, for retirees in 1984, the measuring period used to determine Social Security benefits would be the same for individuals with 25 years of service or more. See Robert Myers, *Social Security* (Homewood, Ill., Richard D. Irwin, Inc., 1981), pp. 54-55.

# Shift work pay differentials and practices in manufacturing

*Most of the late-shift workers received premium pay for such schedules; however, shift differential pay has not increased as rapidly as basic day-shift wage levels*

SANDRA L. KING AND HARRY B. WILLIAMS

About one-fourth of the production workers in metropolitan area factories worked on late shifts in the early 1980's—a proportion that has remained fairly stable over the past two decades. The incidence of late-shift work, however, varies greatly among manufacturing industries, ranging from less than 5 percent of the production work force in such labor intensive industries as apparel and wood furniture to approximately one-half in more capital intensive industries such as cotton and manmade textiles, cigarettes, and glass containers.

In 1984, at least nine-tenths of the late-shift workers in urban factories received premiums over the pay rates of their day-shift counterparts. Most commonly, the differential was a cents-per-hour addition to day-shift rates, averaging 23.2 cents for work on the second shift and 29.9 cents for work on the third shift. For those cases in which there were percentage differentials, the average was 7.3 percent of day rates for the second shift and 10.0 percent for the third. Among individual industries surveyed between May 1978 and October 1984, types and amounts of differentials varied widely. For second shifts, cents-per-hour differentials commonly averaged between 10 and 20 cents; percentage premiums, usually between 5 and 10 percent. Similar ranges for third shifts were 15 to 25 cents per hour and 5 to 10 percent. Differentials expressed in cents-per-hour have been

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## Glossary of shift terms

**Fixed shift:** An arrangement whereby employees remain on the same daily work schedule for long periods of time.

**First shift (day):** A work period in which half or more of the hours fall between 8am and 4pm.

**Second shift (evening):** A work period that is scheduled to end at or near midnight.

**Third shift (night, graveyard, lobster):** A work period that is scheduled to start at or near midnight.

**Rotating shift:** An arrangement whereby employees work successive weeks on day, evening, and night schedules.

**Oscillating shift:** An arrangement whereby employees alternate, usually weekly, between day and evening shifts, or between evening and night shifts, but do not make the full 24-hour cycle as under rotating shift arrangements.

**Split shift:** A daily work schedule which is divided into two or more parts; for example, work 7am to 11am, off 11am to 2pm, and work 2pm to 6pm.

**Swing shift:** A relief or fourth shift used at periodic intervals in plants with rotating shifts, and operating 7 days a week. It may also be used to equalize day and night work among workers.

increased periodically but, generally, not as rapidly as basic hourly pay rates.

These observations are derived from data collected in the Bureau of Labor Statistics' area and industry wage survey

programs. Both surveys report occupational wage rates and the incidence of selected employee benefits and establishment practices, including late-shift provisions and practices.

Area wage surveys are conducted annually in a sample of 70 Standard Metropolitan Statistical Area (SMSA's). Although the emphasis is on occupational pay and benefits found in individual areas, results of the 70 area surveys are combined, with appropriate weighting, to represent all SMSA's in the United States (excluding Alaska and Hawaii).<sup>1</sup> As of July 1984, factories within scope of the wage survey program employed three-fifths of the Nation's 13 million manufacturing production workers.<sup>2</sup>

Twenty-five industry wage surveys are conducted in the manufacturing sector and 15 in nonmanufacturing, generally on a 3- or 5-year cycle.<sup>3</sup> The most recent industry surveys used in this analysis—which is limited to the manufacturing sector—span the period between October 1979 and October 1984 which included both upswings and downturns in the economy. They covered industries employing about one-fifth of all manufacturing production workers in 1984.

### Late-shift operations

Late-shift operations in manufacturing are primarily a product of economic and technological developments associated with factory production.<sup>4</sup> Increasing ratios of capital investment to labor costs provide an incentive for maximum use of plant and equipment. Furthermore, continuous process industries, like basic steel, require round-the-clock operations to avoid high start-up and shut-down costs. Lower rates charged by electric utilities for night usage may provide another incentive for customers to add shift work. Still another factor may be the need for temporary night workers to meet unanticipated or seasonal increases in the demand for a factory's output.<sup>5</sup>

Establishments operating at night may use either a second shift only or both second and third shifts to supplement their daytime hours. The second (evening) shift generally ends at or near midnight, while the third (night) shift begins at this time. Arrangement is thus commonly made for three 8-hour shifts in a 24-hour period.<sup>6</sup> Individual employees may regularly work on the same shift or may alternate among shifts. The various possibilities are described in a glossary of shift terms. (See the box.)

### Incidence of late-shift work

Workers on late shifts accounted for 24.9 percent of the 6 million production and related workers employed in metropolitan area factories in 1984.<sup>7</sup> (See table 1.) This compares with 22.8 percent of 7 million workers in 1959–60, the earliest period for which such data are available.<sup>8</sup> In 1984, 17.7 percent of the factory production workers were on second shifts and 7.2 percent were on third shifts.

The incidence of late shifts among metropolitan areas varied, in part, because of differences in industry mix within individual localities. In the Miami area, for example, where

**Table 1. Percent of manufacturing production workers on late shifts and average shift differentials, metropolitan areas<sup>1</sup> of the United States, 1959–84**

Year of survey <sup>2</sup> and shift schedule	Percent employed on late shifts	Percent with shift differential			Average shift differential		
		Total	Uniform cents-per-hour	Uniform percentage	Other <sup>3</sup>	Uniform cents-per-hour	Uniform percentage
<b>1959–60</b>							
Second shift . . .	16.4	15.5	10.5	4.0	0.9	8.8	7.8
Third shift . . . .	6.4	6.1	4.6	.1	.5	11.1	9.9
<b>1964–65</b>							
Second shift . . .	17.8	16.6	11.5	4.2	.9	9.5	7.6
Third shift . . . .	6.5	6.3	4.9	.9	.5	12.0	9.9
<b>1967–68</b>							
Second shift . . .	18.7	17.7	11.9	4.9	.8	10.0	7.6
Third shift . . . .	7.3	7.1	5.2	1.2	.7	12.8	9.9
<b>1971–72</b>							
Second shift . . .	19.6	18.6	12.3	5.8	.5	12.3	7.3
Third shift . . . .	6.7	6.5	4.9	1.1	.5	16.1	9.9
<b>1975</b>							
Second shift . . .	21.3	20.2	13.7	6.0	.5	13.5	7.1
Third shift . . . .	7.6	7.4	5.6	1.4	.4	17.7	9.9
<b>1977</b>							
Second shift . . .	19.2	18.0	11.5	6.0	.5	16.8	6.8
Third shift . . . .	7.7	7.4	5.3	1.7	.4	21.6	9.7
<b>1980</b>							
Second shift . . .	20.1	18.8	11.8	6.7	.4	19.8	6.9
Third shift . . . .	8.0	7.7	5.4	1.7	.6	25.3	9.8
<b>1984</b>							
Second shift . . .	17.7	16.6	10.8	5.3	.4	23.2	7.3
Third shift . . . .	7.2	6.9	5.1	1.2	.6	29.9	10.0

<sup>1</sup>Standard Metropolitan Statistical Areas (excluding those in Alaska and Hawaii), as defined by the U.S. Office of Management and Budget.

<sup>2</sup>Data are based on BLS wage surveys of 60 metropolitan areas in 1959–60; 80 areas in 1964–65; 85 metropolitan areas in 1967–68 and 1971–72; and 70 areas in 1975, 1977, 1980, and 1984. The results of these surveys were weighted to represent all Standard Metropolitan Statistical Areas, excluding those in Alaska and Hawaii, as defined by the U.S. Office of Management and Budget in 1959, 1961, 1967, and 1974.

<sup>3</sup>Includes pay at regular rates for more hours than worked, a paid lunch period not provided day-shift workers, a flat sum per shift, and other provisions, often provided in combination with a cents or percentage differential for hours actually worked.

NOTE: Because of rounding, sums of individual items may not equal total. A tabulation providing distributions of cents-per-hour and percentage differentials is available from the Bureau of Labor Statistics.

there is a high share of apparel industries, the relatively low proportions of late-shift workers—7.9 percent on second shifts and 2.5 percent on third shifts in 1984—reflect the influence of the apparel industries, which do not typically operate late shifts. In Green Bay, however, where there is round-the-clock pulp and paper manufacturing, second shifts accounted for 25.3 percent of the manufacturing production workers and third shifts, for 15.3 percent.<sup>9</sup>

The incidence of late shifts is generally highest in industries that are capital intensive, including those having continuous process operations. (See examples from the Bureau's industry wage survey program shown in table 2.) The highest proportions of workers on late shifts are in cotton and manmade textile (51.5 percent), cigarette (51 percent), and glass container industries (50 percent) which are all capital intensive. Late shifts accounted for between 40 and 50 percent of the workers in a number of other industries, including those with continuous process operations (basic steel; pulp, paper, and paperboard; blended and prepared

**Table 2. Percent of production and related workers employed on late shifts and percent paid shift differentials, selected manufacturing industries, 1973-84**

Industry	Most recent BLS survey <sup>1</sup>						Previous BLS survey <sup>1</sup>					
	Survey date	All production and related workers (thousands)	Second shift		Third shift		Survey date	All production and related workers (thousands)	Second shift		Third shift	
			Working	Receiving differential	Working	Receiving differential			Working	Receiving differential	Working	Receiving differential
<b>Food and kindred products:</b>												
Meatpacking	June/84	82,948	18.9	16.9	4.3	4.2	May/79	104,348	14.9	14.2	2.2	2.2
Prepared meat products	June/84	50,854	18.1	16.3	4.1	3.7	May/79	48,804	15.4	14.4	3.1	3.1
Flour and other grain mill products	Sept./82	8,115	19.7	18.7	12.2	11.8	Sept./77	10,550	17.1	16.3	11.5	11.1
Rice milling	Sept./82	3,246	17.3	6.2	14.6	6.2	Sept./77	2,642	22.2	4.7	9.8	4.6
Blended and prepared flour	Sept./82	5,588	31.1	25.0	15.5	12.0	Sept./77	5,187	26.5	24.3	14.0	12.8
Wet corn milling	Sept./82	6,312	23.0	20.9	20.5	18.4	Sept./77	6,337	23.1	22.8	20.3	20.1
<b>Tobacco manufactures:</b>												
Cigarettes	June/81	32,438	31.3	31.3	19.7	19.7	May/76	32,826	32.9	32.9	16.5	16.5
<b>Textile mill products:</b>												
Cotton and manmade textiles	Aug./80	269,079	27.8	5.5	23.7	19.6	May/75	305,530	29.4	5.5	23.6	19.0
Wool textiles	Aug./80	13,088	27.0	13.5	17.0	15.6	May/75	13,122	24.8	11.9	14.9	12.6
Women's hosiery	Aug./81	20,107	13.1	4.6	6.6	2.1	July/76	23,803	13.6	5.5	5.1	1.9
Other hosiery	Aug./80	28,032	16.5	6.0	7.3	2.8	July/76	23,913	14.8	4.8	5.0	2.3
Textile dyeing and finishing	Aug./80	48,927	27.4	11.3	17.8	15.4	June/76	51,458	26.7	11.8	14.8	13.0
<b>Apparel and other textile products:</b>												
Men's and boys' suits and coats	June/84	46,716	1.0	1.0	( <sup>2</sup> )	( <sup>2</sup> )	April/79	61,409	1.0	1.0	( <sup>2</sup> )	( <sup>2</sup> )
Men's and boys' shirts	May/84	64,789	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	May/81	64,969	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Men's and boys' separate trousers	May/78	85,442	1.0	1.0	( <sup>2</sup> )	( <sup>2</sup> )	June/74	71,086	1.0	1.0	( <sup>2</sup> )	( <sup>2</sup> )
<b>Furniture and fixtures:</b>												
Nonupholstered wood furniture	June/79	137,150	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	June/74	122,350	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
<b>Paper and allied products:</b>												
Pulp, paper, and paperboard products	July/82	150,200	22.9	22.7	22.6	22.3	Sum./77	170,757	24.6	24.5	23.1	23.0
Corrugated and solid fiber boxes	May/81	57,301	30.0	29.7	8.2	8.2	March/76	61,912	29.7	29.7	5.2	5.2
<b>Lumber and wood products:</b>												
Millwork	Sept./84	50,419	13.1	10.1	1.4	1.2	June/79	43,914	12.9	10.0	1.7	1.4
<b>Chemicals and allied products:</b>												
Industrial chemicals	May/81	115,230	17.3	17.1	15.2	15.1	June/76	129,952	18.2	18.0	15.9	15.8
<b>Petroleum and coal products:</b>												
Petroleum refining	May/81	65,566	15.7	15.4	15.6	15.4	April/76	63,289	17.1	16.5	17.4	16.8
<b>Stone, clay, and glass products:</b>												
Glass containers	May/80	54,518	25.3	24.6	24.5	24.0	May/75	62,591	25.4	25.4	24.1	24.1
Other pressed or blown glass	May/80	28,394	25.2	24.3	18.9	18.7	May/75	28,328	23.2	23.2	16.9	16.9
Structural clay products <sup>4</sup>	Sept./80	26,290	10.0	9.1	4.6	4.2	Sept./75	32,954	10.7	9.0	4.1	3.6
Brick and structural clay tile	Sept./80	11,691	6.6	4.6	2.5	1.7	Sept./75	15,375	7.6	4.8	3.2	2.3
Clay refractories	Sept./80	6,340	17.9	17.9	7.8	7.8	Sept./75	7,585	18.0	18.0	7.7	7.7
<b>Primary metal industries:</b>												
Basic iron and steel	Aug./83	184,078	26.1	24.7	20.0	18.6	Feb./78	345,163	25.3	25.1	20.1	19.8
Iron and steel foundries	Sept./79	177,371	26.2	26.0	11.4	11.4	Nov./73	185,394	25.8	25.6	10.5	10.4
<b>Fabricated metal products:</b>												
Fabricated structural metal	Nov./79	51,935	13.7	12.7	1.8	1.8	Nov./74	63,741	15.3	14.8	1.4	1.4
<b>Transportation equipment:</b>												
Motor vehicle parts and accessories	May/83	170,825	23.4	22.6	5.7	5.6	April/74	242,148	27.9	27.6	8.0	7.9
Shipbuilding and repairing	Sept./81	109,410	23.7	23.7	9.0	9.0	Sept./76	104,027	21.7	21.4	8.4	8.4

<sup>1</sup>Data are based on the most recent and the previous BLS nationwide occupational wage surveys in selected manufacturing industries, conducted between October 1973 and October 1984. The industry studies nearly always have a minimum establishment size cutoff; establishments below the cutoff usually account for less than one-tenth of an industry's total work force, and if included, would not substantially affect the percentages provided above. The cutoff was 20 workers for all except the following: cotton and manmade textiles (50), industrial chemicals (50), petroleum refining (100), basic steel (100), motor vehicle parts

(50), and shipbuilding (250). Industry definitions are from the 1967 and 1972 editions of the *Standard Industrial Classification Manual*, prepared by the U.S. Office of Management and Budget.

<sup>2</sup>Less than 0.5 percent.

<sup>3</sup>Precise estimate not available; less than 2 percent.

<sup>4</sup>Includes data for industries in addition to those shown separately.

flour; and wet corn milling), and those with relatively high ratios of capital investment to wages (other pressed or blown glass, and textile dyeing and finishing). Industrial chemicals, petroleum refining, and shipbuilding each employed about a third of their workers on late shifts. The lowest

incidence—less than 3 percent of the workers—was found in the labor intensive apparel, footwear, and furniture industries.

For most of the manufacturing industries having 30 percent or more of their workers on late shifts, the ratio of

second shift employment to third shift employment was less than 2 to 1. The ratio was generally much higher where relatively few workers were on late shifts. In the millwork and fabricated structural metal industries, for example, late shifts accounted for about 15 percent of the workers, and second shift workers outnumbered those on third shifts by at least 7 to 1.

Unless special circumstances dictate three shifts (such as increased product demand, favorable utility rates, continuous processing), the economic advantages gained from adding a third shift are generally not as great as those provided by the addition of a second shift. For example, a second shift may reduce fixed overhead costs per unit of output by one-half, while second and third shifts combined

**Table 3. Percent of production and related workers on late shifts at time of survey,<sup>1</sup> selected manufacturing industries and regions,<sup>2</sup> 1979-84**

Industry	New England		Middle Atlantic		Border States		Southeast		Southwest	
	Second shift	Third shift	Second shift	Third shift	Second shift	Third shift	Second shift	Third shift	Second shift	Third shift
Food and kindred products:										
Prepared meat products	14.4	2.6	12.9	2.5	16.8	0.4	18.6	8.7	11.1	1.2
Flour and other grain mill products	—	—	16.7	12.3	—	—	26.8	11.9	16.0	9.9
Rice milling	—	—	—	—	—	—	—	—	19.7	16.6
Blended and prepared flour	—	—	—	—	—	—	—	—	29.3	9.9
Wet corn milling	—	—	—	—	—	—	—	—	—	—
Textile mill products:										
Cotton and manmade textiles <sup>3</sup>	23.9	12.3	21.8	16.7	—	—	28.0	24.4	30.9	15.0
Wool textiles <sup>3</sup>	26.9	11.6	—	—	—	—	27.7	23.1	—	—
Women's hosiery <sup>3</sup>	—	—	—	—	—	—	12.7	6.8	—	—
Other hosiery <sup>3</sup>	—	—	11.6	7.0	—	—	16.7	7.5	—	—
Textile dyeing and finishing <sup>3</sup>	28.9	12.8	22.6	3.2	—	—	27.9	20.8	—	—
Paper and allied products:										
Pulp, paper, and paperboard	23.8	23.7	21.9	21.5	—	—	23.7	23.6	24.3	24.3
Corrugated and solid fiber boxes	27.6	5.0	30.8	7.0	29.8	8.6	28.1	9.2	23.1	6.8
Chemicals and allied products:										
Industrial chemicals	13.6	10.8	19.3	17.2	19.1	15.7	22.8	19.5	11.6	10.9
Stone, clay, and glass products:										
Glass containers	—	—	23.2	21.7	27.7	27.7	26.6	26.5	23.7	23.0
Other pressed or blown glass	—	—	24.5	14.1	23.6	15.4	—	—	—	—
Structural clay products <sup>4</sup>	—	—	11.8	2.9	13.5	5.1	8.2	6.3	7.6	2.1
Brick and structural clay	—	—	12.1	3.1	6.2	2.9	8.0	2.4	3.0	2.6
Clay refractories	—	—	17.4	3.6	—	—	—	—	—	—
Primary metal industries:										
Iron and steel foundries	16.3	5.5	22.7	11.0	31.2	20.0	23.5	6.8	26.0	14.2
Fabricated metal products:										
Fabricated structural metal	10.9	—	12.3	4.5	19.1	.8	8.7	—	12.9	.9
			Great Lakes		Middle West		Mountain		Pacific	
			Second shift	Third shift	Second shift	Third shift	Second shift	Third shift	Second shift	Third shift
Food and kindred products:										
Prepared meat products			24.7	4.9	14.6	2.8	16.1	2.2	18.7	4.9
Flour and other grain mill products			21.1	13.8	17.9	12.6	20.1	10.7	19.7	11.3
Rice milling			—	—	—	—	—	—	—	—
Blended and prepared flour			30.3	20.9	36.6	12.8	—	—	—	—
Wet corn milling			22.3	19.6	26.4	24.9	—	—	—	—
Paper and allied products:										
Pulp, paper, and paperboard			22.4	21.3	—	—	—	—	21.1	21.1
Corrugated and solid fiber boxes			32.5	7.5	27.5	3.9	—	—	31.3	16.0
Chemicals and allied products:										
Industrial chemicals			20.0	16.5	20.6	20.4	22.5	16.3	15.1	14.2
Stone, clay, and glass products:										
Glass containers			26.1	25.2	—	—	—	—	26.5	26.5
Other pressed or blown glass			26.0	25.2	—	—	—	—	—	—
Structural clay products <sup>4</sup>			6.8	3.3	20.8	8.8	—	—	4.9	3.2
Brick and structural clay			5.0	3.2	—	—	—	—	—	—
Clay refractories			10.7	5.2	24.7	11.2	—	—	—	—
Primary metal industries:										
Iron and steel foundries			28.5	12.5	20.4	6.3	31.1	7.3	21.0	8.0
Fabricated metal products:										
Fabricated structural metal			18.1	4.5	15.1	—	16.2	.7	13.0	1.6

<sup>1</sup>See table 2, column 2 for date of survey.

<sup>2</sup>The regions are defined as follows: New England—Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont; Middle Atlantic—New Jersey, New York, and Pennsylvania; Border States—Delaware, District of Columbia, Kentucky, Maryland, Virginia, and West Virginia; Southeast—Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, and Tennessee; Southwest—Arkansas, Louisiana, Oklahoma, and Texas; Great Lakes—Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin; Middle West—Iowa, Kansas, Missouri, Nebraska, North Dakota, and South Dakota; Moun-

tain—Arizona, Colorado, Idaho, Montana, New Mexico, Utah, and Wyoming; and Pacific—California, Nevada, Oregon, and Washington. Alaska and Hawaii were not included in the study.

<sup>3</sup>No data were reported or data did not meet publication criteria for the following regions: Great Lakes, Middle West, Mountain, and Pacific.

<sup>4</sup>Includes data for industries in addition to those shown separately.

NOTE: Dashes indicate no data or data that do not meet publication criteria.

may reduce these costs by two-thirds. Thus, the addition of the third shift results in incremental savings in overhead costs of only one-sixth.<sup>10</sup>

Fourteen of the industries listed in table 2 increased the proportion of production workers on late shifts between the survey dates shown; 7 had declines; and 10 had virtually no change (that is, a change of less than 1 percentage point). The largest proportionate increases were in meatpacking (from 17.1 to 23.2 percent), prepared meat products (from 18.5 to 22.2 percent), and hosiery other than women's (from 19.8 to 23.8 percent). Increases of at least 10 percent were also recorded for blended and prepared flour, flour and other grain mill products, wool textiles, and other pressed or blown glass. Shift work declines were most dramatic in motor vehicle parts (from 35.9 percent in 1973 to 29.1 percent in 1984) and in brick and structural clay (from 10.8 to 9.1 percent). Overall production worker employment also changed substantially in a number of these industries, but there was no consistent relationship between work force

changes and changes in the proportions of shift workers.

Regionally, the proportions of shift workers did not vary substantially for such industries as pulp, paper, and paperboard; chemicals; glass containers; and cotton and manmade textiles. (See table 3.) However, in a few of the industries analyzed, such as iron and steel foundries, the proportion of all late-shift workers in one region (Border States) of the country was more than double that in some of the other regions studied during the early 1980's. Where comparisons were possible, the proportions of workers on late shifts were usually below industrywide levels in the New England, Middle Atlantic, and Southwest regions, while generally above those in the Border States, Southeast, and Great Lakes. Comparisons with industrywide proportions yielded no general pattern in the Middle West, Mountain, and Pacific regions.

Late-shift work is not confined to the manufacturing sector. For the economy as a whole, the Current Population Survey (a household survey conducted for the BLS by the

**Table 4. Percent of late shift production and related workers receiving differentials, and average differentials, selected manufacturing industries, 1973-84**

Industry	Survey date	Industry average hourly earnings <sup>1</sup>	Second shift				Third shift					
			All workers receiving differential <sup>2</sup>	Cents-per-hour differential		Percentage differential		All workers receiving differential <sup>2</sup>	Cents-per-hour differential		Percentage differential	
				Percent receiving	Average amount	Percent receiving	Average amount		Percent receiving	Average amount	Percent receiving	Average amount
<b>Most recent survey<sup>3</sup></b>												
<b>Food and kindred products:</b>												
Meatpacking	June/84	\$ 7.80	100	79.2	13.7	0.1	5.0	100	42.8	18.1	—	—
Prepared meat products	June/84	7.61	100	74.2	16.8	0.1	10.0	100	59.4	18.3	—	—
Flour and other grain mill products	Sept./82	8.59	100	98.9	17.8	—	—	100	99.9	25.0	—	—
Rice milling	Sept./82	6.25	100	100.0	10.7	—	—	100	100.0	14.7	—	—
Blended and prepared flour	Sept./82	8.01	100	93.6	16.5	2.0	10.0	100	95.0	22.4	4.2	15.0
Wet corn milling	Sept./82	10.72	100	100.0	18.1	—	—	100	100.0	31.2	—	—
<b>Tobacco manufactures:</b>												
Cigarettes	June/81	10.47	100	100.0	18.1	—	—	100	100.0	31.2	—	—
<b>Textile mill products:</b>												
Cotton and manmade textiles	Aug./80	5.09	100	94.6	9.4	1.8	7.5	100	98.5	7.4	0.5	6.7
Wool textiles	Aug./80	4.91	100	96.3	7.8	3.7	6.8	100	99.4	9.0	0.6	10.0
Women's hosiery	Aug./81	4.70	100	69.6	21.6	30.4	4.2	100	52.4	17.3	47.6	9.2
Other hosiery	Aug./81	4.56	100	60.0	10.9	38.3	6.1	100	57.2	19.4	39.3	10.4
Textile dyeing and finishing	Aug./80	5.23	100	98.2	7.6	0.9	5.0	100	99.4	8.0	—	—
<b>Paper and allied products:</b>												
Pulp, paper, and paperboard products	July/82	10.22	100	100.0	20.0	—	—	100	100.0	27.6	—	—
Corrugated and solid fiber boxes	May/81	7.09	100	98.0	14.1	1.0	8.3	100	99.7	20.9	0.3	5.0
<b>Chemicals and allied products:</b>												
Industrial chemicals	May/81	9.88	100	91.2	29.5	2.9	6.0	100	86.0	50.1	4.5	3.2
<b>Petroleum and coal products:</b>												
Petroleum refining	May/81	11.58	100	98.7	50.0	—	—	100	96.8	98.3	2.0	10.0
<b>Stone, clay and glass products:</b>												
Glass containers	May/80	7.66	100	96.4	16.9	—	—	100	96.3	20.9	—	—
Other pressed or blown glass	May/80	6.40	100	96.7	15.2	2.9	10.0	100	96.3	19.3	3.2	10.0
Structural clay products <sup>4</sup>	Sept./80	5.86	100	92.3	17.1	6.6	5.8	100	95.2	18.5	2.4	7.5
Brick and structural clay tile	Sept./80	5.07	100	87.0	15.0	10.9	6.4	100	82.4	19.1	11.8	8.8
Clay refractories	Sept./80	7.96	100	100.0	18.7	—	—	100	100.0	23.8	—	—
<b>Primary metal industries:</b>												
Basic iron and steel	Aug./83	11.87	100	99.6	28.4	—	—	100	100.0	41.8	—	—
Iron and steel foundries	Sept./79	7.16	100	72.3	18.2	25.8	5.2	100	67.5	21.6	28.9	9.4
<b>Fabricated metal products:</b>												
Fabricated structural metal	Nov./79	6.35	100	89.0	20.7	7.1	7.8	100	94.4	28.8	0.6	5.0
<b>Transportation equipment:</b>												
Motor vehicle parts and accessories	May/83	8.20	100	86.3	18.7	12.4	6.8	100	85.7	22.4	12.5	9.3
Shipbuilding and repairing	Sept./81	8.97	100	43.9	30.7	38.4	7.9	100	40.0	43.4	34.4	7.9

Bureau of the Census) reports that 11 percent of all full-time nonfarm wage and salary workers were on late shifts in May 1980.<sup>11</sup> The proportion of workers on late shifts was higher in goods-producing (13 percent) than in service-producing (10 percent) industries. By broad occupational group, the range was from 3 percent for salesworkers to 29 percent for service workers—a group that frequently works late shifts and includes police officers, firefighters, and health and cleaning personnel.

### Shift premiums

Late-shift work, although often economically advantageous to employers, may adversely affect workers—bio-

logically, psychologically, and socially. Evening or night work, according to some authorities, may lead to a variety of physical problems and may impair normal family and social life.<sup>12</sup>

As a consequence, extra pay is generally provided for late-shift work.<sup>13</sup> Payment of premiums to workers on late shifts can be traced at least to World War I, when the National War Labor Board awarded a 5-percent shift bonus in several cases under its review. During the 1920's, a survey by the National Industrial Conference Board indicated that about 10 percent of the workers in 243 companies, largely in manufacturing, were on night shifts. The study found that premiums were rarely paid for rotating shift work, but were commonly found for fixed shifts. During the 1930's

**Table 4. Continued—Percent of late shift production and related workers receiving differentials, and average differentials, selected manufacturing industries, 1973–84**

Industry	Survey date	Industry average hourly earnings <sup>1</sup>	Second shift				Third shift					
			All workers receiving differential <sup>2</sup>	Cents-per-hour differential		Percentage differential		All workers receiving differential <sup>2</sup>	Cents-per-hour differential		Percentage differential	
				Percent receiving	Average amount	Percent receiving	Average amount		Percent receiving	Average amount	Percent receiving	Average amount
<b>Previous survey<sup>3</sup></b>												
Food and kindred products:												
Meatpacking	May/79	\$6.97	100	99.3	16.3	0.1	5.0	100	100.0	17.5	—	—
Prepared meat products	May/79	6.52	100	99.3	17.7	0.7	10.0	100	96.8	19.2	3.2	10.0
Flour and other grain mill products	Sept./77	5.52	100	100.0	12.4	—	—	100	100.0	19.3	—	—
Rice milling	Sept./77	3.85	100	100.0	13.3	—	—	100	100.0	22.4	—	—
Blended and prepared flour	Sept./77	6.14	100	95.9	12.1	0.4	7.0	100	99.2	19.4	0.8	10.0
Wet corn milling	Sept./77	6.87	100	100.0	15.0	—	—	100	100.0	26.6	—	—
Tobacco manufactures:												
Cigarettes	May/76	5.71	100	61.1	26.6	38.9	8.0	100	52.1	35.0	47.9	10.0
Textile mill products:												
Cotton and manmade textiles	May/75	3.08	100	85.5	8.7	10.1	8.2	100	95.8	6.9	3.2	6.8
Wool textiles	May/75	3.17	100	97.5	6.6	0.8	7.0	100	99.2	8.5	—	—
Women's hosiery	July/76	3.00	100	60.0	18.2	34.6	6.7	100	42.1	16.2	42.1	11.6
Other hosiery	July/76	3.05	100	41.7	7.9	47.9	5.1	100	47.8	12.3	39.1	8.9
Textile dyeing and finishing	June/76	3.82	100	90.7	8.3	4.2	6.2	100	94.6	8.3	1.5	7.5
Paper and allied products:												
Pulp, paper, and paperboard products	Sum./77	6.54	100	98.8	14.0	—	—	100	99.1	21.6	—	—
Corrugated and solid fiber boxes	March/76	4.65	100	98.0	10.2	2.1	4.3	100	98.1	16.7	—	—
Chemicals and allied products:												
Industrial chemicals	June/76	6.28	100	88.9	18.4	5.6	7.1	100	88.6	31.0	5.7	7.1
Petroleum and coal products:												
Petroleum refining	April/76	7.38	100	100.0	21.2	—	—	100	—	43.4	—	—
Stone, clay, and glass products:												
Glass containers	May/75	4.63	100	100.0	13.8	—	—	100	100.0	17.8	—	—
Other pressed or blown glass	May/75	4.32	100	100.0	11.7	—	—	100	100.0	15.0	—	—
Structural clay products <sup>4</sup>	Sept./75	3.79	100	96.7	12.0	2.2	6.8	100	91.7	15.7	1.1	8.8
Brick and structural clay tile	Sept./75	3.35	100	99.6	9.4	0.4	9.0	100	99.7	12.1	0.3	9.0
Clay refractories	Sept./75	4.78	100	99.4	13.7	0.6	5.0	100	88.3	18.0	1.3	7.5
Primary metal industries:												
Basic iron and steel	Feb./78	8.32	100	100.0	20.0	—	—	100	100.0	30.0	—	—
Iron and steel foundries	Nov./73	4.12	100	75.8	11.4	23.4	5.3	100	62.5	15.0	36.5	10.0
Fabricated metal products:												
Fabricated structural metal	Nov./74	4.55	100	87.8	13.1	6.8	6.2	100	92.9	17.3	2.4	5.0
Transportation equipment:												
Motor vehicle parts and accessories	April/74	4.45	100	75.0	13.4	24.6	5.5	100	79.8	14.2	16.5	8.0
Shipbuilding and repairing	Sept./76	5.66	100	52.8	22.8	35.1	7.3	100	70.2	19.3	17.9	7.5

<sup>1</sup>Data relate to straight-time hourly earnings which exclude premium pay for overtime and for work on weekends, holidays, and late shifts.

<sup>2</sup>Includes workers receiving other than cents-per-hour or percentage differentials.

<sup>3</sup>See footnote 1, table 2.

<sup>4</sup>Includes data for industries in addition to those shown separately.

NOTE: Dashes indicate no data or data that do not meet publication criteria. A tabulation providing distributions of cents-per-hour and percentage differentials is available from the Bureau of Labor Statistics. Because of rounding, sums of individual items may not equal 100.

and 1940's, the practice of paying premiums for fixed night-shift work expanded, and since World War II, the payment of late-shift premiums has become a widespread practice in American industry.<sup>14</sup>

In 1984, more than 90 percent of the workers on second and third shifts in urban manufacturing plants received premium pay for such schedules. Uniform cents-per-hour differentials, averaging 23.2 and 29.9 cents above day-shift rates, applied to two-thirds of the second-shift workers and to three-fourths of the third-shift workers, respectively. Similarly, uniform percentage differentials, averaging 7.3 percent and 10.0 percent of day rates, applied to one-third of the second-shift workers and nearly one-fifth of the third-shift workers. Other types of differentials included pay at regular rates for more hours than worked (such as 8 hours' pay for 7.5 hours' work), paid lunch periods which were not provided to first-shift workers, or a flat sum per shift. These "other differential" arrangements, available to fewer than 1 percent of the workers, were commonly provided in combination with a cents-per-hour or percentage differential for hours actually worked.

More than 90 percent of the late-shift workers in the manufacturing industries surveyed separately by BLS during the October 1973–October 1984 period were paid shift differentials. (See table 2.) Industries in which the proportions paid shift differentials were substantially below 90 percent for second shifts included rice milling (36 percent of the workers), cotton and manmade textiles (20 percent), women's hosiery (35 percent), other hosiery (36 percent), and textile dyeing and finishing (41 percent). Industries in which the incidence of third-shift differentials fell substantially below 90 percent of the workers included rice milling (42 percent), women's hosiery (32 percent), and other hosiery (38 percent).

In part, these differences among the industries studied reflect the influence of collective bargaining. For 25 of the industries shown in table 2, it was possible to compare the percent of late-shift workers receiving shift premiums and

the percent of the industry's production workers employed in establishments with collective bargaining agreements covering a majority of these workers. A positive relation was found between an industry's incidence of premium pay for shift work and its degree of unionization; the coefficient of correlation was 0.87.

Shift differential pay has not increased as rapidly as basic day-shift wage levels.<sup>15</sup> For example, straight-time average hourly earnings of unskilled plant workers in metropolitan areas rose 92 percent from July 1975 to July 1984, and skilled maintenance worker averages rose 97 percent. In contrast, the average cents-per-hour shift differential advanced 72 percent for second-shift and 69 percent for third-shift work.

Between 1975 and 1984, for workers receiving percentage differentials, the average premium rose 3 percentage points for second-shift and 1 percentage point for third-shift work. Percentage premiums automatically reflect increases in hourly pay rates, but cents-per-hour premiums (the principal type used) require adjustment to keep pace.

Shift differentials in the industries studied separately were usually paid as cents-per-hour additions to day-shift rates and typically averaged from 10 to 20 cents more for second shifts and from 15 to 25 cents more for third shifts. (See table 4.) When paid as a percentage of day-shift rates, differentials for second and third shifts averaged 5 to 10 percent and were most frequently found in industries such as women's hosiery, iron and steel foundries, brick and structural clay tile, shipbuilding, and motor vehicle parts. In most of the industries, the average cents-per-hour differential increased between the survey periods studied. In a few instances, growth in the average shift differential outpaced the rise in average hourly earnings. For example, between April 1976 and May 1981, the average cents-per-hour differential in petroleum refining increased from 21.2 to 50.0 cents for second shifts and from 43.4 to 98.3 cents for third shifts.<sup>16</sup> Over the same period, average hourly earnings increased 57 percent, from \$7.38 to \$11.58. □

—FOOTNOTES—

<sup>1</sup>For summaries of findings of surveys conducted in 1984, see *Area Wage Surveys: Selected Metropolitan Areas, 1984*, Bulletin 3025–72 (Bureau of Labor Statistics, 1985); and *Occupational Earnings in All Metropolitan Areas, July 1984*, Summary 85–4 (Bureau of Labor Statistics, 1985).

<sup>2</sup>The surveys are restricted to establishments employing 50 workers or more in the following industry divisions: manufacturing; transportation, communications, electric, gas, and sanitary services; wholesale trade; retail trade; finance, insurance, and real estate; and selected services. (In the 13 largest areas studied, the minimum establishment size is 100 workers in manufacturing; transportation, communications, electric, gas, and sanitary services; and retail trade.)

<sup>3</sup>For an example, see *Industry Wage Survey: Meat Products, June 1984*, Bulletin 2247 (Bureau of Labor Statistics, 1985).

<sup>4</sup>See Janice Neipert Hedges and Edward S. Sekscenski, "Workers on late shifts in a changing economy," *Monthly Labor Review*, September 1979, pp. 14–15.

<sup>5</sup>Outside manufacturing, round-the-clock demand for medical, protection, and other services require night work. For a detailed analysis, see Marc Maurice, *Shiftwork, Economic Advantages and Social Costs* (Geneva, International Labour Office, 1975). See also Murray F. Foss, "Changing utilization of fixed capital: an element in long-term growth," *Monthly Labor Review*, May 1985, pp. 3–8.

<sup>6</sup>An alternative approach is described in Herbert R. Northrup, James T. Wilson, and Karen M. Rose, "The Twelve Hour Shift in the Petroleum and Chemical Industries," *Industrial and Labor Relations Review*, April 1979, pp. 312–26.

<sup>7</sup>Information on shift work typically is obtained in a given metropolitan area once every 3 years, with the information being collected annually in a third of the areas. Data for 1984 actually relate to information collected in 1982, 1983, and 1984. For ease of reference, the survey period is labeled 1984.

<sup>8</sup>For an analysis of late-shift employment during the 1960's, see Charles M. O'Connor, "Late-shift employment in manufacturing industries," *Monthly Labor Review*, November 1970, pp. 37–42.

<sup>9</sup>Summary data for individual areas surveyed in 1984 are in *Area Wage Surveys: Selected Metropolitan Areas, 1984*.

<sup>10</sup>This example is cited in F. P. Cook, *Shift Work* (London, Institute of Personnel Management, 1954), p. 8.

<sup>11</sup>The latest date for which this information is available. See *Workers on Late Shifts*, Summary 81-83 (Bureau of Labor Statistics, 1981).

<sup>12</sup>See Peter Finn, "The effects of shift work on the lives of employees," *Monthly Labor Review*, October 1981, pp. 31-35; and Graham L. Staines and Joseph H. Pleck, *The Impact of Work Schedules on the Family* (Ann Arbor, MI, Institute for Social Research, University of Michigan, 1983).

<sup>13</sup>Unlike overtime premium provisions in union-management agreements, which may be set high enough to deter long workweeks, collectively bargained shift premiums are essentially designed as compensation for work at disagreeable hours; unions rarely seek penalty payments as deterrents to shift operations. See Sumner H. Slichter, James J. Healy, and E. Robert Livernash, *The Impact of Collective Bargaining on Management* (Washington, Brookings Institution, 1960), pp. 228-30. Further discussion of collective bargaining issues and shift work is found in John Zalusky, "Shiftwork—A Complex of Problems," *AFL-CIO American Federationist*, May 1978, pp. 1-6.

Provisions for shift differentials appeared in 1,290 of 1,550 collective bargaining agreements covering 1,000 workers or more which were in effect on or after January 1, 1980. See *Characteristics of Major Collective Bargaining Agreements, January 1, 1980*, Bulletin 2095 (Bureau of Labor Statistics, 1981), pp. 50-52. (Analysis of collective bargaining agreements was discontinued in 1981.)

<sup>14</sup>For a brief history of shift premiums, see Milton Derber, "The History of Basic Work Hours and Related Benefit Payments in the United States," in *Studies Relating to Collective Bargaining Agreements and Practices Outside the Railroad Industry*, Appendix Volume IV to the *Report of the Presidential Railroad Commission* (Washington, February 1962), pp. 288-90.

<sup>15</sup>Shift differential pay accounted for less than 1 percent of total compensation of production workers in manufacturing in 1977, the last year for which such data were published. See *Employee Compensation in the Private Nonfarm Economy, 1977*, Summary 80-5 (Bureau of Labor Statistics, 1980), p. 8.

<sup>16</sup>During the 1976 union contract negotiations between petroleum refiners and the Oil, Chemical and Atomic Workers' Union, shift premium pay was doubled for both evening and night shifts. For further details, see *Current Wage Developments* (Bureau of Labor Statistics, February 1977).

## ERRATUM

Because of a typographical error, a tabulation was duplicated in the Howard N Fullerton, Jr. article "The 1995 labor force: BLS' latest projections," November issue, p. 22, first column. The paragraph containing the correct tabulation appears below:

The labor force participation rates of a few age groups of women are projected to increase by more than 1 percent a year. The following tabulation shows the eight groups with the fastest participation growth projected for 1984-95:

Race	Age group	Projected growth per year
White women . . . . .	25-34	1.4
White women . . . . .	35-44	1.3
White women . . . . .	45-54	1.1
Black women . . . . .	35-44	1.0
Black women . . . . .	45-54	.9
Black women . . . . .	25-34	.9
Black women . . . . .	20-24	.8
White women . . . . .	18-19	.8

# Productivity growth low in the oilfield machinery industry

*Output per employee hour increased  
an average of only 1.2 percent annually  
in the oilfield machinery industry  
between 1967 and 1983, with output  
going through several boom and bust cycles*

BRIAN L. FRIEDMAN AND ARTHUR S. HERMAN

Output per employee hour in the oilfield machinery industry<sup>1</sup> grew at an average annual rate of 1.2 percent between 1967 and 1983, compared with a 2.4-percent rate for the entire manufacturing sector. During this period, output grew at an average annual rate of 8.1 percent, while average annual growth in employee hours was 6.8 percent.

This industry has been strongly influenced by worldwide changes in the price of oil with resulting shifts in production of crude oil and natural gas. Increases in oil prices and expectations of future oil price increases have led to spurts in activity in the oilfield machinery industry, followed by periods of slower output growth or output declines as oil prices stabilized or dropped.

Long-term gains in productivity have reflected some innovations in machining techniques, such as numerical control and improvements in handling and storing materials. However, this industry is rather labor intensive, making a variety of products with highly specific requirements for individual customers. Large increases in output have generally been offset by similar jumps in employment, leading to overall modest productivity growth. Sharp gains in capital expenditures, spurred by rapidly increasing oil prices, were more in the nature of duplicating facilities to meet growth in demand rather than expenditures for more advanced types of technology.

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The oilfield machinery industry produces equipment for the drilling of oil and gas wells and equipment to control the flow of oil and gas from producing wells. This includes surface and subsurface drilling equipment for both rotary and cable tool types of drilling operations. Waterwell and blasthole drilling equipment are made in this industry, as is portable drilling equipment. Equipment for offshore oil drilling is produced and sold to the shipbuilding industry, which manufactures the offshore platforms. Subsea wellhead equipment is also produced.

## Trends in productivity and output

The productivity trend in this industry recorded a distinct change between the 1967–73 period and that of 1973–81. This change can be related to the impact of the Mideast oil embargo, which began in 1973. In 1982, a third period began, characterized by a sharp drop in demand. (See table 1.)

During 1967–73, productivity grew at a rate of 3.5 percent, with its greatest gains at the end of the period, in 1972 and 1973. The productivity trend reflected an average annual gain of 4.8 percent in output and 1.2 percent in employee hours. During this period, productivity declined in only one year—1969.

After 1973, there was a turnaround and productivity fell off. Despite a boom in output, productivity recorded a decline over 1973–81. Spurred by oil shortages in 1973–74 and again in 1979, the price of crude oil quintupled during

**Table 1. Output per employee hour and related indexes in the oilfield machinery and equipment industry, 1967-83**

[1977 = 100]

Year	Output per employee hour			Output	Employee hours		
	All employees	Production workers	Non-production workers		All employees	Production workers	Non-production workers
1967 . . .	86.3	86.6	85.4	49.1	56.9	56.7	57.5
1968 . . .	87.2	86.3	89.1	52.5	60.2	60.8	58.9
1969 . . .	82.1	80.3	86.0	54.5	66.4	67.6	63.4
1970 . . .	86.4	87.2	84.7	54.7	63.3	62.7	64.6
1971 . . .	90.7	95.1	82.0	52.5	57.9	55.2	64.0
1972 . . .	99.7	103.1	92.8	59.7	59.9	57.9	64.3
1973 . . .	105.7	107.3	102.2	70.6	66.8	65.8	69.1
1974 . . .	121.4	120.4	123.5	92.5	76.2	76.8	74.9
1975 . . .	107.9	105.0	115.0	98.4	91.2	93.7	85.6
1976 . . .	100.7	100.9	100.6	94.5	93.8	93.7	93.9
1977 . . .	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1978 . . .	109.3	107.2	114.8	124.1	113.5	115.8	108.1
1979 . . .	105.6	104.6	107.6	128.8	122.0	123.1	119.4
1980 . . .	104.0	102.7	107.3	147.4	141.7	143.5	137.4
1981 . . .	104.7	101.1	114.5	191.9	183.2	189.9	167.6
1982 . . .	98.4	99.7	95.6	157.2	159.7	157.7	164.4
1983 . . .	100.7	112.8	80.6	94.1	93.4	83.4	116.7
<b>Average annual percent change<sup>1</sup></b>							
1967							
-83 . . .	1.2	1.4	1.1	8.1	6.8	6.7	7.0
1967							
-73 . . .	3.5	4.2	2.1	4.8	1.2	0.5	2.7
1973							
-81 . . .	-0.8	-1.1	0.1	10.9	11.8	12.1	10.8
1981							
-83 . . .	-1.9	5.6	-16.1	-30.0	-28.6	-33.7	-16.6

<sup>1</sup>Based on the linear least squares trend of the logarithms of the index numbers.

this period. Output in the oilfield machinery industry increased at an average annual rate of 10.9 percent from 1973 to 1981. Average annual increases of 11.8 percent in employee hours, however, led to an overall average annual decline of 0.8 percent in productivity.

There were very large output increases in 1974—31.0 percent—and in 1978—24.1 percent. Toward the end of the period, very rapidly increasing oil prices and expectations of continuing oil price increases beginning in 1979 led to another boom in demand for industry products. Output increased 14.4 percent in 1980 and 30.2 percent in 1981, when demand peaked.

Many industry products, especially the oil drilling rigs themselves, are reused in the exploration for oil and therefore can be stockpiled. When drilling activity slows and the need for oilfield machinery is filled, industry demand slumps rapidly. Periods of strong output growth are usually followed by periods of more modest growth or declines. Therefore, during 1973-81, despite the overall high rate of growth, output posted only moderate gains in 1975, 1977, and 1979. In 1976, output declined 4.0 percent. However, employee hours had gains in every year and very large increases in 1974, 1975, 1978, 1980, and especially 1981 (23.9 percent). Therefore, there were only three productivity increases during this period: 14.9 percent in 1974, 9.3 percent in 1978, and a modest 0.7 percent in 1981. The remaining years had productivity declines with large drops in 1975 (-11.1 percent) and 1976 (-6.7 percent).

During the boom period, the industry's major interest was satisfying burgeoning demand for oilfield equipment.<sup>2</sup> New plant and equipment were added rapidly. In this period, the industry's customers—drilling contractors and oil companies—were more concerned with their ability to search for and find oil than with the cost of equipment. Prices for oilfield machinery increased drastically. The price index for the industry more than tripled from 1973 to 1981. Despite the price gain, capital expenditures (in constant 1972 dollars) by the crude petroleum and natural gas industry increased by almost 500 percent between 1972 and 1981. The products made in this industry tend to be expensive relative to other industrial equipment: for example, a standard-sized carbide drill bit currently costs around \$6,000 and a subsea well Christmas tree (complicated wellhead valve) could cost as much as \$320,000.<sup>3</sup> However, in relation to the overall costs of exploring for oil or the return on investment of a successful well, the equipment cost is low. This is also true for wellhead equipment, such as "Christmas trees," where a subsea blowout can cause serious environmental problems. Therefore, rapidly increasing equipment prices were less important to the oil exploration industry than the need to provide oil during this period.

The boom in demand for industry products halted abruptly in 1981.<sup>4</sup> Worldwide oversupply of oil began depressing oil prices. Uncertainty about continued increases in oil prices caused a sharp decline in drilling rig activities. In the United States alone, the number of rotary oil rigs in use fell from a high of more than 4,500 in 1981 to fewer than 2,400 in 1982.<sup>5</sup> There was an oversupply of usable oil rigs. Industry output fell 18.1 percent in 1982 and plummeted 40.1 percent in 1983. A large reduction in employee hours in 1982 did not keep pace with output, and productivity fell 6.0 percent. However, in 1983, employee hours dropped more than output, falling 41.5 percent, and productivity recorded a gain of 2.3 percent.

### Exports and employment boom

The U.S. industry is the leader in worldwide oilfield machinery production. It supplies nearly all of domestic demand and much of the equipment used by foreign nations. Exports have been a large part of the industry's shipments, and this segment grew substantially during the period measured. In 1967, 26 percent of oilfield machinery produced in the United States was exported. By 1972, this percentage had grown to 45.2 percent. Exports have remained at least 40 percent of shipments since 1972, and reached peaks of 65 percent in 1975 and 63 percent in 1976.<sup>6</sup> The United States has few international competitors in oilfield equipment. For example, while Japan and Korea produce offshore oil barges and platforms, the drilling equipment installed on these units tends to be supplied by the United States.<sup>7</sup>

Total employment in the oilfield machinery industry increased from 39.9 thousand in 1967 to a high of 122.3 thousand in 1981 and then fell off sharply to 68.3 thousand

in 1983. This growth is equivalent to the very high rate of 6.8 percent per year during 1967–83. In fact, this is the highest rate of employment gain among all the industries with published productivity measures, and can be contrasted with the low growth rate of 0.1 percent per year for the total manufacturing sector over the same period.

The employment gain in this industry paralleled the changes in demand for equipment by the oil-producing industry. Employment remained fairly level between 1967 and 1972 and was not affected much by the recession of 1970. In 1973, however, employment started to expand rapidly. Employment was up 8.8 percent between 1972 and 1973, it grew 13.9 percent more by 1974, and was up 20.3 percent by 1975. These large gains were in contrast to the employment situation in the total manufacturing sector, which was negatively affected by the 1974–75 recession and recorded employment declines in both 1974 and 1975. Employment in the oilfield machinery industry continued to grow strongly from 1975 to 1978. The energy crisis in 1979 accelerated demand for oilfield equipment and employment expanded even more rapidly, growing 9.4 percent from 1978 to 1979, an additional 14.3 percent to 1980, and jumping 26.5 percent to its peak in 1981. However, in 1982, the sharp falloff in drilling activity hit the industry drastically, and employment dropped 7.7 percent between 1981 and 1982 and another 39.5 percent between 1982 and 1983.

Employment of production workers grew at about the same high rate (6.7 percent per year) as total employment during 1967–83. Employment of nonproduction workers increased at the slightly higher rate of 7.0 percent over the period. Production workers accounted for about two-thirds of total employment in 1967. This proportion remained fairly stable over the study period.

The growth in hours of all employees, production workers, and nonproduction workers was quite similar to the employment growth in these categories from 1967 to 1983. Therefore, average annual hours did not change much over the period.

### **Wages above average**

Average hourly earnings of production workers were somewhat higher for the oilfield machinery industry than for the average of all-manufacturing industries during the study period. In 1967, the earnings of production workers in the oilfield machinery industry were about 6 percent higher than the all-manufacturing average. This earnings advantage remained approximately the same until 1973 and then began to increase during the period of accelerating demand for oilfield equipment. So, by 1983, average hourly earnings of production workers at \$10.41 were about 18 percent higher in this industry than in manufacturing as a whole.

These higher earnings are one indicator that the skill levels of the workers in this industry are somewhat higher than in manufacturing as a whole. Data on occupations tend to substantiate this. Occupational data exactly matching this

industry are unavailable. However, data on occupations are available at a broader level of aggregation for the construction and related machinery and equipment group. In 1982, employment in the oilfield machinery industry accounted for the largest proportion of this group. Therefore, the aggregate data should be indicative of the occupational distribution in the industry.<sup>8</sup> Although the proportion of craft workers was slightly higher in all manufacturing than in this group, in key craft occupations the group including oilfield machinery accounted for a higher percentage than manufacturing as a whole in 1982. For example, metalworking craft workers were 5.2 percent of all workers, compared with 3.1 percent in manufacturing. Within the metalworking category, machinists and layout markers accounted for 2 percent of employment, compared with 0.9 percent for manufacturing.

For operatives, the proportions were quite similar, 41 percent for the group including oilfield machinery, compared with 40 percent for manufacturing. However, metalworking operatives were significantly greater in this group at 23.3 percent, compared with only 6.8 percent for manufacturing as a whole. Within metalworking, machine tool operators at 13.2 percent were much higher than all manufacturing at 4.7 percent, while welders were also significantly higher at 9.9 percent in this group versus 1.7 percent for manufacturing.

Although the proportion of engineers was slightly higher for manufacturing as a whole, mechanical engineers in the industry group including oilfield machinery accounted for 1.5 percent, compared with 0.6 for manufacturing. In addition, drafters at 2.2 percent were significantly above the 0.6 percentage for manufacturing.

### **The industry expands**

Rapid industry growth during the post-1973 output boom can be seen in the increase in the number of establishments. In 1967, there were 360 establishments in the industry and this number declined to 315 by 1972. In 1977, however, the number of establishments had grown to 478, and by 1982 there were 1,011.

The size of establishments in this industry also increased rapidly during the post-1973 period. In 1967, there were 69 establishments with 100 employees or more. By 1972, the number of these establishments had risen to only 71; however, in 1977, there were 103 of these larger establishments and by 1982, 172.

The industry is located for the most part in oil-producing States. In 1982, more than half of the establishments—537—were in Texas. Oklahoma had the next highest number of establishments, 132; Louisiana had 83; and California, 75.

### **Capital expenditures**

Capital expenditures per employee for this industry were below the average for all-manufacturing industries in 1967

and 1968 and roughly equal to all-manufacturing levels during 1969–73. Industry expansion after 1973, however, caused a sharp increase in capital expenditures, which nearly tripled in terms of current dollars from 1973 to 1974. From 1974 forward, average capital expenditures per employee were well above all-manufacturing levels. For example, capital expenditures per employee were \$9,116 in 1982, more than double the all-manufacturing average of \$3,923.

Although capital expenditures increased sharply during the post-1973 period, many of the plants and much of the equipment installed was duplicative rather than innovative. The industry's major concern was rapidly increasing production capacity in order to satisfy soaring demand. Efficiency of operations was not emphasized as long as production could be maximized. Employment increased sharply and productivity was negative from 1973 to 1981.

### Technological change

The products made in this industry include items such as drill bits, drawworks, mud pumps, wellhead valves (such as Christmas trees), derricks, as well as complete stationary and truck-mounted drilling rigs. The manufacture of these items generally involves some form of metalworking. Materials used usually are iron and steel castings and forgings and steel shapes. Most of the products made tend to be fairly unique and are not made in long runs. Therefore, manufacturing consists mainly of batch operations limiting the opportunities for efficiencies related to assembly line production. Many of the manufacturing operations are very labor intensive. Much of the new technology in use was introduced for product changes and tighter tolerances rather than for labor savings.<sup>9</sup>

In most cases, production equipment tends to be situated in cell-type layouts in which machine tools of a similar type are grouped together, rather than in workflow layouts. This has occurred because of frequent product changes, resulting in workflow shifts, making it more economical to move the product to a specialized machine tool center than to dedicate specific machine tools to a rigid workflow pattern. In some cases, for example, the manufacture of tool joints, workflow layouts have been set up to increase efficiency.

Numerical control of machine tools has been one of the most important innovations in this industry. Numerically controlled machining equipment is particularly suited to the batch type operations common to the industry, and such equipment is in widespread use. Computerized numerically controlled machine tools, a fairly recent innovation, are being used to some extent. Computerization increases the flexibility of the units being controlled and results in continuously produced shapes and tolerances not otherwise feasible.<sup>10</sup> However, manually operated machine tools continue to be used for many industry operations because of the low-volume nature of the products made.

Numerical control has also been applied to welding, which is an important manufacturing operation in this industry.

Computer-controlled electron beam welding also is in use, as is friction welding. Numerically controlled flame-cutting equipment has also been operating in this industry.

Computer-assisted design and computer-assisted manufacturing (CAD–CAM) is another important innovation that is beginning to be utilized in the industry. These techniques allow quick changes in the design of products to meet specific needs. CAD–CAM is particularly useful in making items such as specialized valves, Christmas trees, and other wellhead equipment that must be tailored to fit severe operating conditions, such as for subsea or arctic wells. Using CAD, designs that might have taken months are now completed in weeks.<sup>11</sup> CAD is in more widespread use in the industry than CAM. However, in some cases the computer system used produces tapes to run numerically controlled machine tools (CAM). For example, one drill bit manufacturer uses CAD–CAM to create new designs or modify existing designs three to twenty times faster than using conventional design-drafting techniques. The specifications for all their products are in their data base for immediate access, and tapes are produced to run numerically controlled machine tools making parts for the final product.<sup>12</sup>

An important innovation is the use of computers for scheduling workflow and for inventory control. Computerized high-rise warehouses have been installed by a number of firms in the industry. Also, computers are being used for testing, for example, in checking subsea and arctic wellhead valves.

### Future productivity uncertain

Lower levels of industry activity that began in 1982 are expected to continue through the mid-1980's. Demand for industry output is likely to vary by product. For products such as drill bits and tool joints, which wear out with use, industry experts project some increases in demand as drilling activity resumes modest long-term trends. However, demand for drill rigs, which can be stockpiled, will be affected by the oversupply of usable rigs, and output is expected to be low in the next few years. Much of limited demand for drill rigs should come from Third World nations and the People's Republic of China.<sup>13</sup>

Output of oilfield machinery is greatly influenced by expectations of demand for oil and future oil prices. A large drilling project, requiring a number of drill rigs, may not produce oil for up to 2 years after the equipment is ordered. In the past, demand for oil could be gauged by projections of U.S. and worldwide economic growth. This relationship, however, has been upset by conservation efforts. The effect of possible changes in the tax laws regarding oil depletion allowances has added to the financial uncertainty in oil well drilling. In addition, many smaller exploration companies were hard hit by the slump.<sup>14</sup> Because of these factors, drilling activity in the near future will probably continue to remain well below the recent peak period and demand for industry products is expected

to be low.<sup>15</sup> This situation, however, could change rapidly if there is another oil crisis.

During the current slowdown, many firms are emphasizing efficiency in an effort to cut costs. Inefficient capacity in operating plants has been shut down. Some plants have

been completely closed, and firms have gone out of business. Therefore, the industry's inability to increase productivity has been enhanced. However, the continued low level of output growth that is expected will make substantial productivity growth unlikely. □

—FOOTNOTES—

<sup>1</sup>The oilfield machinery and equipment industry is classified as Standard Industrial Classification (SIC) 3533 in the *Standard Industrial Classification Manual 1972* and its 1977 supplement, issued by the U.S. Office of Management and Budget. This industry includes establishments primarily engaged in manufacturing machinery and equipment for use in oil and gas fields or for drilling waterwells.

<sup>2</sup>"Equipment Supplies Tighten as U.S. Drilling Rises," *Oil and Gas Journal*, Mar. 17, 1980, p. 86.

<sup>3</sup>Information obtained from industry representatives.

<sup>4</sup>Rick Hagar, Glenda E. Smith, and Roger Vielvoje, "World Production of Oil Sinks to Lowest Volume in a Decade," *Oil and Gas Journal*, Mar. 14, 1985, pp. 23-26.

<sup>5</sup>*Hughes Rig Count* (Hughes Tool Company, 1983).

<sup>6</sup>*U.S. Industrial Outlook 1985* (Washington, U.S. Department of Commerce, International Trade Administration), pp. 23-26.

<sup>7</sup>Information obtained from industry representatives.

<sup>8</sup>*BLS Industry—Occupational Employment Matrix, 1982, 1995 Alternatives* (Bureau of Labor Statistics), pp. 154-65, 385-90.

<sup>9</sup>Information obtained from industry representatives.

<sup>10</sup>*Oilfield Catalog, 1984* (Hughes Tool Division), p. 76.

<sup>11</sup>Information obtained from industry representatives.

<sup>12</sup>*Oilfield Catalog, 1984* (Hughes Tool Division), p. 71.

<sup>13</sup>Information obtained from industry representatives.

<sup>14</sup>"Significant Surge in U.S. Drilling Seen at Least One Year Away," *Oil and Gas Journal*, July 11, 1983, pp. 25-28.

<sup>15</sup>"U.S. Drilling Outlay Down 36.3 Percent in 1983," *Oil and Gas Journal*, Dec. 17, 1984, pp. 48-50.

### APPENDIX: Measurement techniques and limitations

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

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

Because data on physical quantities are not reported for the oilfield machinery industry, real output was estimated by a deflated value technique. Changes in price levels were removed from current-dollar values of production by means of appropriate price indexes at various levels of subaggregation from the variety of products in the group. To combine segments of the output index into a total output measure, employee hour weights relating to the individual segments were used, resulting in a final output index that is concep-

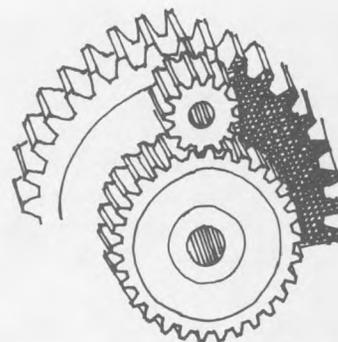
tually close to the preferred output measure.

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

The indexes of output per employee hour relate total output to one input—labor. The indexes do not measure the specific contribution of labor or capital, or any other single factor. Rather, they reflect the joint effect of factors such as changes in technology, capital investment, capacity utilization, plant design and layout, skill and effort of the work force, managerial ability, and labor-management relations.

The average annual rates of change presented in the text are based on the linear least squares trend of the logarithms of the index numbers. Extensions of the indexes appear annually in the BLS Bulletin, *Productivity Measures for Selected Industries*. A technical note describing the methods used to develop the indexes is available from the Division of Industry Productivity and Technology Studies.

# Productivity Reports



## The decline in productivity during the first half of 1985

LAWRENCE J. FULCO

Labor productivity in the nonfarm business sector declined over the first two quarters of 1985 as payroll hours grew faster than output in the sector. The increase in hours resulted entirely from employment gains because average weekly hours were unchanged. Increases in hourly compensation remained moderate, as they have during much of the period since the trough of the last recession, but unit labor costs advanced somewhat faster, reflecting the decline in productivity.

Output per hour of all persons engaged in the nonfarm business sector—labor productivity—declined at a 1.0-percent annual rate between the fourth quarter of 1984 and the second quarter of 1985. The decline reflected a 1.5-percent annual rate of growth of output and a 2.5-percent gain in hours.

Hourly compensation rose at a 4.2-percent annual rate over the period, and unit labor costs—compensation per unit of output—increased 5.2 percent. When the rise in the Consumer Price Index for All Urban Consumers (CPI-U) is taken into account, real hourly compensation edged upward at a 0.5-percent annual rate.

The following tabulation shows the changes during the first half of this year in productivity and related measures relative to the fourth quarter of 1984. Additional information appears in tables 29 to 32 of the Current Labor Statistics section of this issue.

Sector	Productivity	Output	Hours
Business	-1.2	1.3	2.6
Nonfarm business	-1.0	1.5	2.5
Manufacturing	3.6	1.4	-2.1
Durable	3.9	0.9	-2.8
Nondurable	3.1	2.2	-1.0
Nonfinancial corporations	-1.4	1.3	2.7

Lawrence J. Fulco is a supervisory economist in the Office of Productivity and Technology, Bureau of Labor Statistics.

**Table 1. Changes in productivity and related measures 10 quarters after the trough of postwar recessions**

[Percent change at compound annual rate]

Trough quarter	Productivity	Output	Hours	Employment	Hourly compensation	Unit labor costs
<b>Business</b>						
1949 IV	5.1	7.3	2.1	2.2	8.3	3.1
1954 II	3.0	5.1	2.1	2.3	4.7	1.7
1958 II <sup>1</sup>	2.7	5.7	2.9	2.6	4.6	1.8
1961 I	4.5	5.4	0.9	0.9	4.4	-0.1
1970 IV	3.6	6.7	3.0	3.1	6.9	3.3
1975 I	3.7	7.0	3.2	3.2	7.9	4.1
1980 III <sup>1</sup>	2.7	4.5	1.7	1.9	9.3	6.4
Average cycle	4.0	6.3	2.3	2.3	6.5	2.4
1982 IV	2.2	6.5	4.2	3.7	3.9	1.7
<b>Nonfarm business</b>						
1949 IV	4.0	7.8	3.6	3.4	7.6	3.4
1954 II	2.3	5.3	2.9	2.7	5.0	2.7
1958 II <sup>1</sup>	2.3	6.0	3.6	3.2	4.3	1.9
1961 I	4.0	5.7	1.6	1.5	3.6	-0.3
1970 IV	3.7	7.0	3.2	3.2	6.9	3.1
1975 I	3.4	7.1	3.5	3.5	7.7	4.1
1980 III <sup>1</sup>	2.0	3.8	1.8	2.0	9.5	7.4
Average cycle	3.5	6.6	3.0	2.9	6.2	2.6
1982 IV	2.3	6.6	4.3	3.8	4.1	1.8
<b>Manufacturing</b>						
1949 IV	3.8	11.1	6.9	6.0	8.4	4.4
1954 II	2.2	5.5	3.2	2.4	5.5	3.2
1958 II <sup>1</sup>	3.4	8.5	4.9	3.9	4.2	0.8
1961 I	6.3	9.6	3.1	2.1	3.2	-2.9
1970 IV	5.9	10.2	4.1	3.1	6.2	0.3
1975 I	4.1	8.3	4.0	2.9	8.2	3.9
1980 III <sup>1</sup>	4.2	6.6	2.3	2.0	8.4	4.0
Average cycle	4.5	9.0	4.3	3.3	6.3	1.8
1982 IV	3.8	8.1	4.1	3.1	3.7	-0.1

<sup>1</sup>Percent change, trough to peak, as designated by the National Bureau of Economic Research.

### Business sector

Business productivity declined at a 1.2-percent annual rate over the first two quarters of 1985, reflecting slower output growth and faster increases in hours than in nonfarm business. (Although farming is a relatively small activity—it presently makes up less than 4 percent of output and hours—wide swings in farm productivity and related measures can have an impact on the more comprehensive business

series.) During the first quarter, productivity declined at a 3.9-percent annual rate. Output was unchanged from the fourth quarter of 1984, so the increase in hours of all persons engaged in the sector was translated into lower productivity. In the second quarter, changes in output and hours were more nearly balanced, and productivity increased 1.5 percent.

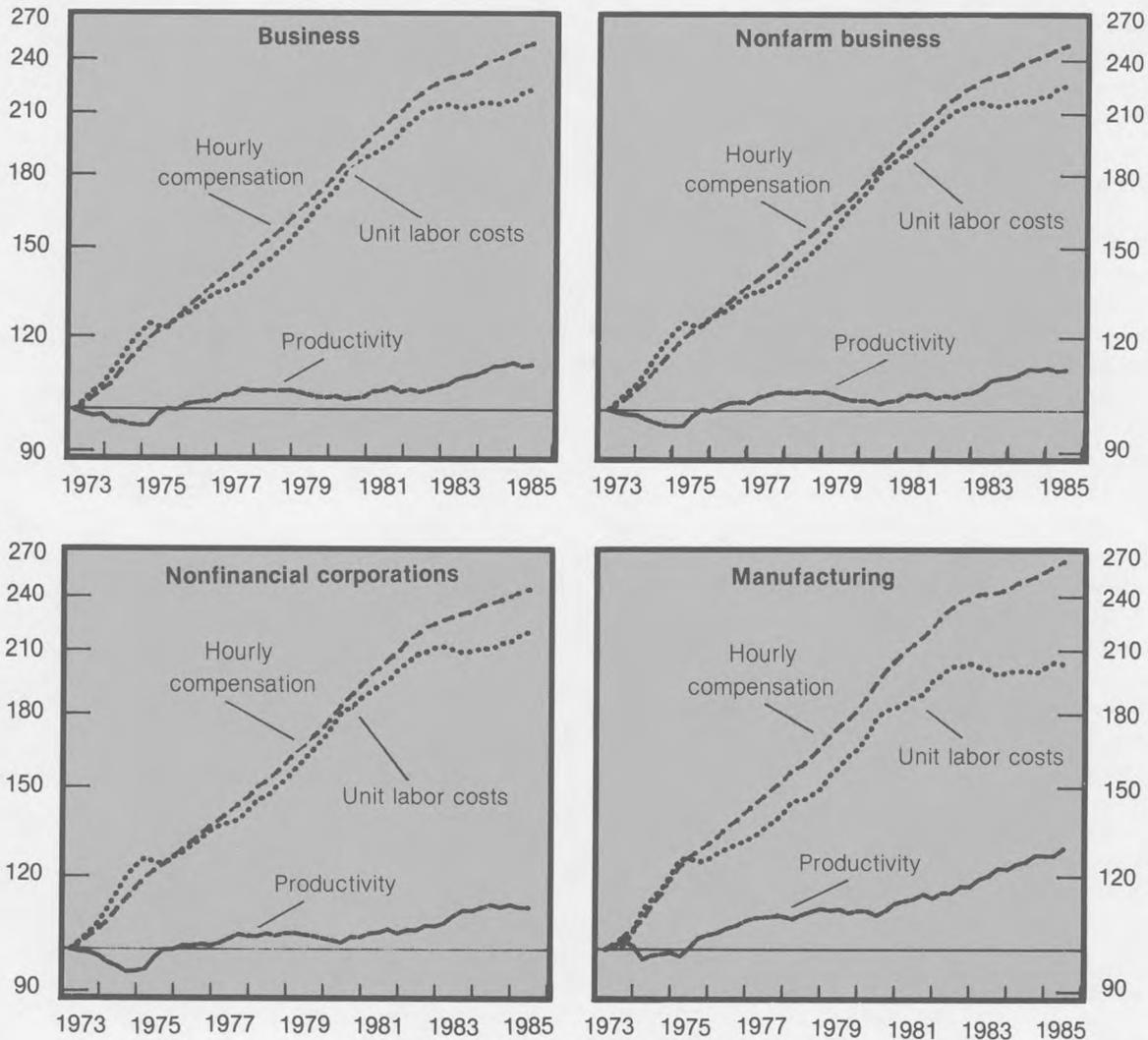
Hourly compensation increased at a 4.8-percent annual rate during the first quarter of 1985, then slowed to 3.3 percent in the second quarter. When increases in consumer prices are considered, real hourly compensation rose 1.4 percent in the first quarter, but declined at a 0.9-percent annual rate during the second. This measure of the real

return to labor for producing the goods and services which make up business output peaked in mid-1978 but subsequently declined as the CPI-U outstripped gains in hourly compensation. During the top quarter of the previous business cycle (the third quarter of 1981) real hourly compensation declines ended; since then slow but fairly steady increases have occurred. Although the increases amounted to a 3.5-percent gain by the second quarter of 1985 over the low of 4 years earlier, real hourly compensation remained 2.7 percent below the 1978 peak.

Unit labor costs (compensation per unit of output) rose at a 9.1-percent annual rate during the first quarter, the largest quarterly increase in almost 3 years. During the

**Chart 1. Productivity and related measures in four major sectors of the economy, 1st quarter 1973-2nd-quarter 1985**

Ratio scale (1st quarter 1973 = 100)



second quarter, the rise was a more modest 1.7 percent, reflecting both moderation in the rate of increase in hourly compensation and a resumption of productivity gains.

Business employment increased 1.1 million during the first half of 1985 (increasing at a 2.7-percent annual rate), bringing the increase in employment, since the recovery began in late 1982, to 7.5 million.

### Nonfarm business

Nonfarm business productivity declined in the first half of 1985, compared with a 4.2-percent annual rate of increase between January and June 1984. As in the more comprehensive business sector, the productivity decline in the first half of 1985 reflected more rapid gains in hours than in output.

During the first quarter, productivity declined, reflecting little output growth, while hours increased more rapidly. In the second quarter the situation reversed: output increased faster and gains in hours slowed, so productivity moved upwards. Hourly compensation increases in the first and second quarters were smaller than during the same quarters last year, but unit labor costs grew much more during 1985 because of the relatively poorer record of productivity growth. Nonfarm business employment rose 1.1 million in the first 6 months of 1985, bringing the gain since the trough of the recession to 7.4 million nonfarm business jobs.

### Manufacturing

Manufacturing productivity moved up strongly during the first half of 1985 as hours and employment were reduced, while output increased. The productivity gain in the first half of 1985 was roughly the same as during the same period a year earlier, but stemmed from different underlying movements in output and hours. During 1984, output and hours posted strong gains between January and June, but in 1985, manufacturing output grew slowly, while hours were cut back.

Productivity moved upward in the first and second quarters, in contrast to the productivity declines which occurred in the first quarter in the business sectors. Output growth accelerated from a 0.9-percent annual rate in the first quarter to a 2.0-percent gain during the second, while hours of all persons engaged in the sector increased slightly in the first but declined in the second quarter.

Hourly compensation increased in both quarters, but unit labor costs declined in the second quarter, partly reflecting the strong growth in productivity.

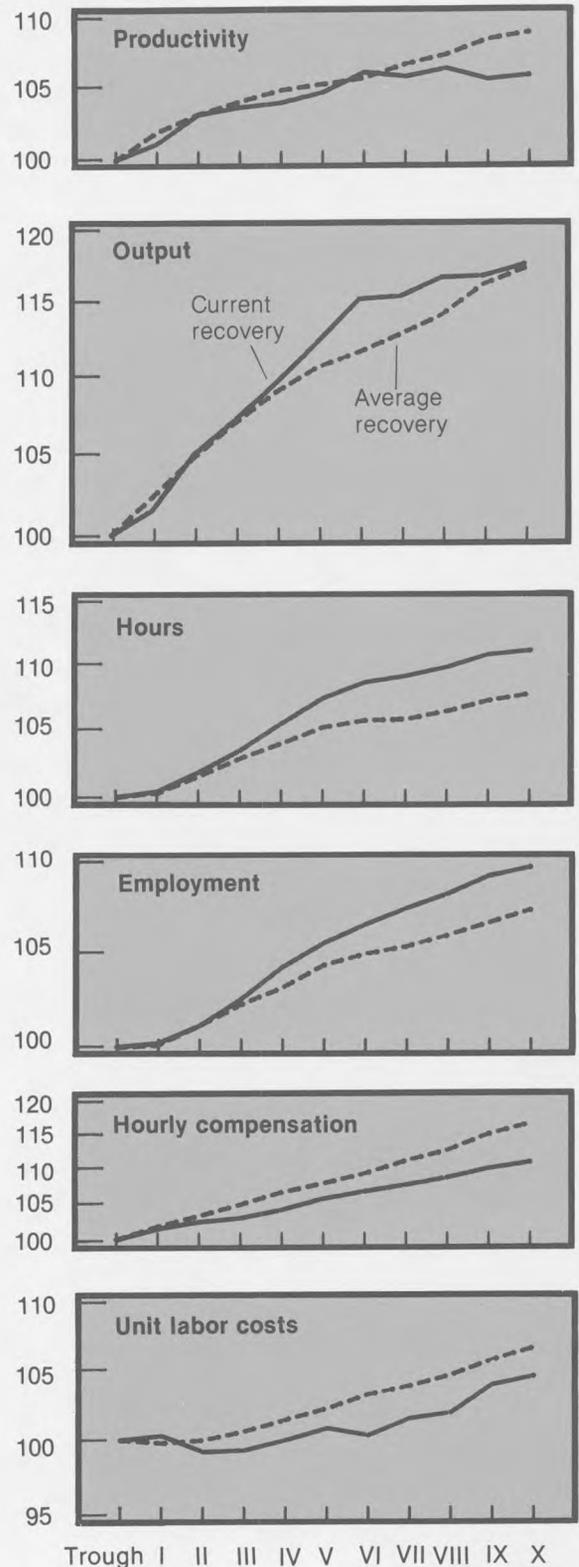
Employment declined in the first half of 1985, but stood 1.5 million higher than during the trough of the business cycle.

### Nonfinancial corporations

Productivity declined during the first 6 months of 1985 in the nonfinancial corporate sector, as hours increased more rapidly than output in the sector. Unlike the business sectors,

**Chart 2. Productivity and related measures 10 quarters after the trough of the business cycle in the nonfarm business sector**

(Index, trough quarter = 100)



however, productivity declined in the first and second quarters, as output grew more slowly than employee hours during both periods.

Hourly compensation increased 3.9 percent in the first quarter and 3.0 percent in the second, but after allowing for the rise in consumer prices, real hourly compensation grew 0.6 percent in the first quarter but declined 1.2 percent in the second. Both unit labor and nonlabor costs (indirect business taxes and capital consumption allowance) increased during the first two quarters, but unit profits fell. Employment in the sector increased by nearly a million jobs during the first half of 1985, and by 6.1 million since the trough of the business cycle.

Chart 1 shows how productivity, hourly compensation, and unit labor costs have behaved since 1973.

### Recovery period

The second quarter of 1985 marked the 10th quarter since the trough of the most recent business cycle. The trough occurred in November 1982, according to the National Bureau of Economic Research. Since 1947, eight business cycle troughs have been identified by the National Bureau of Economic Research; six of these troughs have been followed by at least 10 quarters of recovery and expansion. Although productivity growth generally accelerates during recoveries in the business cycle, the annual rate of growth during the 10-quarter period following the most recent trough (2.3 percent) was below the average (3.5 percent) of previous like recovery periods in nonfarm business and showed the least growth of any 10-quarter recovery. Other similar recovery periods had growth rates which ranged from 2.3

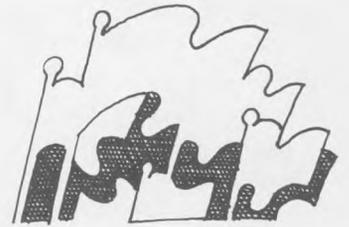
to 4.0 percent. (See table 1.)

However, comparing recovery periods ignores the slowdown in productivity growth after 1973. Prior to 1973, nonfarm productivity grew at about half again the trend rate during the 10 quarters of recovery. In the current instance, productivity growth during recovery is better than double the underlying trend rate. Thus, the "productivity dividend" associated with this recovery period appears much stronger when the slower underlying trend is considered. In manufacturing, there is a smaller difference between the current recovery productivity increment and the average pre-1973 acceleration, but the current recovery still represents a bigger improvement over trend than during the average manufacturing recovery prior to the slowdown.

This recovery has also been marked by an unusually slow rate of increase in hourly compensation, so that despite the sluggish productivity recovery, unit labor cost increases have been very modest over the 10 quarters. In manufacturing, these costs have actually declined somewhat. Chart 2 shows how nonfarm business productivity and related measures have performed since the trough of the business cycle.

Compensation outlays account for the largest portion of value added by nonfarm business. Typically, the compensation of labor makes up roughly two-thirds of output (in current dollars). The slow rate of increase in hourly compensation and unit labor costs during the present expansion is reflected in the measure of labor share (compensation divided by output). Labor share has been below average in nearly every quarter of the current recovery, and in the second quarter of 1985 remained 3.0 percent below its fourth-quarter 1982 level. □

# Foreign Labor Developments



## ILO adopts new standards on health services, labor data

TADD LINSENMAYER

The 71st International Labor Conference, meeting in Geneva, Switzerland, largely kept disruptive political issues below the surface, and adopted new international labor standards on occupational health services and labor statistics, according to American delegates.

The June 7 to 27 Conference also gave preliminary consideration to standards concerning asbestos, adopted a resolution and conclusions on equal opportunities and equal treatment for men and women in employment, and approved two technical resolutions concerning steps to alleviate Africa's food problems and to curtail the use of dangerous substances and processes in industry.

U.S. Secretary of Labor William E. Brock, in his first appearance before the ILO's annual meeting, stressed the importance of ILO programs aimed at promoting labor/management cooperation, explaining to the Conference that "new technologies often demand a more flexible approach to the organization of work, one guided by greater interaction, understanding and cooperation between labor and management."

To help the ILO begin collecting and disseminating information on effective labor/management solutions to specific problems, Brock offered a special grant to study successful labor/management efforts to develop training and retraining programs in advance of the introduction of new technology.

Of the Conference's four technical agenda items, two—occupational health services and labor statistics—had been carried over from the 1984 Conference.

The Conference adopted both a convention (which can be formally ratified by governments, giving it the same legal status as an international treaty) and a recommendation concerning occupational health services. The convention sets out a general framework for national occupational health services. It emphasizes the preventive nature of such services and defines the functions of health services to include

identification of workplace health risks, surveillance of the working environment, and workers' health, training, and participation in workplace design and choice of equipment and substances used in work. The recommendation deals in more specific detail with the organization and functions of occupational health services.

Two controversial issues arose during consideration of these standards. The first involved language requiring that workers and their representatives "cooperate and participate" in implementing occupational health services. American and other employers argued that this inappropriately introduced labor relations issues into the standards.

Employer delegates objected even more strongly to a provision in the recommendation requiring multinational enterprises to provide "the highest standard of services, without discrimination, to the workers in all its establishments, regardless of the place or country in which they are situated." The employers argued that this provision raised serious issues of sovereignty and could lead to a multiplicity of levels and standards of services in countries in which many multinationals operate.

The majority of delegates, including U.S. Government and worker delegates, believed there was sufficient flexibility in the standards to allow implementation consistent with varying national laws and practices.

The Conference also adopted a new convention and recommendation concerning labor statistics, which revised a set of standards which the ILO had originally adopted in 1938. The new standards identify nine areas for coverage in national labor statistics programs, including employment and unemployment, labor force, earnings and hours of work, labor costs, occupational injuries and illnesses, and industrial disputes.

Efforts by the U.S. Government to include productivity among statistical programs required under the convention were not successful. However, productivity was included in the recommendation and in a special resolution asking the ILO to give high priority to problems of productivity measurement.

The first discussion of safety in the use of asbestos (this issue will also be on the agenda of the 1986 conference) proved every bit as controversial as expected. A number of delegates proposed an international ban on asbestos and its replacement with appropriate substitutes. This effort was

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defeated, and the decision to ban or restrict the use of asbestos was left to national authorities. Similarly, a provision urging national authorities to give special attention to the exposure of young workers to asbestos was adopted in place of an outright prohibition of youth under age 18 from working with asbestos.

The Conference's preliminary conclusions concerning asbestos call for national laws and regulations to control exposure to asbestos by, among other means, encouraging alternative materials and technology, establishing and enforcing exposure limits, ensuring proper cleaning and containment of workers' clothing to prevent carrying asbestos fibers outside the workplace, and through effective training and surveillance programs.

Unlike the other technical agenda items, consideration of equal opportunities and equal treatment for men and women in employment was not designed to lead to the adoption of standards. Rather, the Conference adopted a resolution and conclusions establishing certain fundamental principles.

In its final conclusions, the Conference noted the "uneven" pace of progress in promoting equality and, in some cases, even a deterioration in the situation of women. The conclusions call for, among other things, new measures to promote the employment of women and provide equal employment opportunities, further development of education and training programs, intensified efforts to eliminate occupational segregation in labor markets, and promotion of the principle of "equal remuneration for work of equal value," that is, comparable worth.

The work of the Conference committee considering the equal opportunity agenda item was complicated by efforts by some Eastern European countries to introduce extraneous political issues.

According to the U.S. Government representative in the committee, East Germany and Czechoslovakia introduced a separate draft resolution which, while giving lip service to equality for men and women, in reality attempted to introduce such extraneous issues as disarmament, apartheid, colonialism, neo-colonialism, and creation of a new international economic order.

While this resolution was never substantively considered, a related proposal to amend the committee's conclusions to include a reference to disarmament provoked prolonged debate. In the end, the Conference committee rejected the reference as inappropriate to the subject of equality of opportunity and treatment.

The Conference also adopted a resolution concerning action to assist African countries in achieving, in particular, food security. Against the backdrop of mounting concern for the African famine, the resolution calls for increased international assistance and ILO technical programs aimed at rural public works, skills training, and development of cooperatives.

A second resolution concerning dangerous substances and processes in industry came, in part, as a result of the fatal

gas explosion in Mexico and the methyl isocyanate leak in Bhopal, India. As finally adopted by the Conference after extensive debate in committee and consideration of many amendments, the resolution calls on national authorities to "ensure that the introduction of new hazardous substances and processes are effectively monitored and covered by adequate health and safety measures," urges employers to provide the safest possible operating and control systems, and asks the ILO to place more emphasis on controlling hazardous substances in its technical programs.

Although political controversy was largely kept below the surface and did not dominate this year's Conference as it has in some other years, politics was not absent.

According to Robert W. Searby, chairman of the U.S. delegation, Nicaragua attempted to introduce, in the name of the Non-Aligned Movement (a loose association of developing countries), a strong condemnation of U.S. policies in Central America. The United States and other ILO members insisted that such a political issue was not relevant to the ILO. In the end, only a much watered-down letter was sent to the President of the Conference which was neither officially distributed nor granted the status of a Conference document.

Of somewhat more concern to members of the American delegation was the "suspension" of discussion of Soviet violations of the ILO's freedom of association standards.

In 1977, the United States quit the ILO citing, in particular, the Conference's "selective concern for human rights," that is, the ILO's tendency to criticize human rights violations in developing countries while ignoring serious problems in the Soviet Union and Eastern Europe.

More recently, and particularly since the United States rejoined the ILO in 1980, the organization has been far more vocal in its criticism of Soviet bloc violations, in particular, Poland's efforts to crush the Solidarity trade union. According to Searby, this has prompted a strong Soviet attack on the ILO's human rights machinery—including increased political and financial pressure to secure a "selective immunity" from ILO monitoring. Although the Conference committee dealing with the implementation of standards by ILO members continued to carefully and objectively examine violations of the crucial freedom of association standards by many developing and Western countries, this year, the workers' vice chairman in the committee—to the surprise of many—successfully instigated the suspension of substantive consideration of long-standing Soviet violations.<sup>1</sup>

This move prompted the U.S. Government representative to express "concern" about the possible "return to the moratorium" on discussion of Soviet violations which prevailed throughout the 1960's and into the 1970's. Secretary of State George P. Shultz, in hearings before the Senate Labor and Human Resources Committee in September, expressed concerns about "backsliding" in the ILO's willingness to look critically at Soviet violations in the face of increasing Soviet pressures.

Finally, the Conference continued its practice of reviewing the policy of apartheid in South Africa, urging intensified efforts by governments, employers, and workers to pressure the South African government into eliminating it. The Conference also adopted a \$253 million budget to cover ILO activities for the 1986–87 period.

In 1986, the ILO Conference will again consider proposed standards on asbestos and will hold general discussions (not

leading to new international standards) on the promotions of small- and medium-sized undertakings, and on the problems of young workers. □

—FOOTNOTE—

<sup>1</sup> Although the Conference committee did examine violations of freedom of association and discrimination in employment standards by Czechoslovakia, it was unable to review violations by Poland and Romania because those governments refused to participate in the committee.

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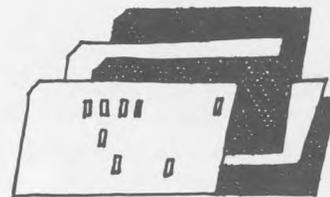
### A different kind of cost-of-living study

The [BLS] . . . participated in an innovative cost-of-living inquiry conducted by the International Labor Office in 1930–31. The study originated with a request by the Ford Motor Company for information to help in setting wage rates of its employees in certain European cities to ensure the same general living standard as that of its employees in Detroit. The Bureau conducted the work in Detroit, covering a sample of 100 families. The Detroit budget was then used by the various European statistical agencies, with adjustment for differences in national consumption habits, government social insurance payments, and other factors, to determine the cost of living in those cities relative to Detroit.

—JOSEPH P. GOLDBERG AND WILLIAM T. MOYE

*The First Hundred Years of the  
Bureau of Labor Statistics,  
Bulletin 2235 (Bureau of Labor  
Statistics, 1985).*

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## Regional pay variations in millwork manufacturing

Straight-time hourly earnings of production and related workers in the millwork industry averaged \$7.37 in September 1984, according to a study by the Bureau of Labor Statistics.<sup>1</sup> Regionally, earnings averaged between \$5.40 and \$5.70 in the Southeast, Southwest, and Border States. Elsewhere, the averages ranged from \$6.51 in New England to \$8.04 in the Great Lakes and \$8.62 in the Pacific States. (See table 1.) Together, the last two regions accounted for 53 percent of the industry's production workers.

The 1,039 millworking establishments within scope of the survey (those having eight workers or more) employed an estimated 50,400 production workers in September 1984. These workers manufacture a variety of products, including interior and exterior doors, windows (frames or complete units), stairs, and interior and exterior ornamental woodwork. Based on an establishment's primary product, three-tenths of the production workers were employed by manufacturers of interior woodwork products and one-fourth by window manufacturers. Nearly one-fifth of the workers were in plants where interior doors (softwood) were the major product and one-eighth were in plants producing flush and molded exterior doors. The remainder of the production workers were involved principally in the manufacture of window and door sash, stairs, and exterior woodwork.

Among the product categories studied separately, workers in plants primarily manufacturing windows had the highest average hourly pay (\$8.18); softwood doors, the lowest (\$6.13). Workers in establishments primarily producing flush and molded doors averaged \$7.55 an hour; and those producing interior woodwork, \$7.46. These nationwide pay levels were influenced largely by the regional distribution of workers in each product category. For example, the Great Lakes, the second highest paying of the regions, accounted for three-fifths of the workers in plants primarily manufacturing windows, while the Southeast and the Southwest, the two lowest paying regions, accounted for none of the workers in this category. Where comparisons could be made, regional pay differences for a product category frequently were substantial.

Twenty-two occupations were selected to represent the industry's wage structure, workers' skills, and manufactur-

ing operations. Pay levels among these jobs, which accounted for slightly more than half of the production workers, ranged from \$5.24 an hour for hand sanders and \$5.42 for janitors to \$9.15 an hour for journeyman millworkers and \$9.69 for millwrights. Assemblers of wood products (nearly one-fifth of the workers) averaged \$7.47 an hour.

Occupational pay levels were typically highest in the Pacific States and lowest in the Southeast. Pay relationships, however, varied widely by occupation. For example, general utility maintainers in the Pacific States averaged 21 percent more than the national average, while their counterparts in the Great Lakes averaged 2 percent less. Conversely, hand sanders in the latter region averaged 28 percent above the national average, while in the Pacific States they averaged 9 percent less.

Occupational pay levels also were compared by size of community, size of establishment, and labor-management contract coverage. Nationwide, occupational averages were generally 20 to 30 percent more in plants with at least 250 workers than in plants with 8 to 99 workers; and 25 to 40 percent higher in plants with union contracts than in non-union plants. Where regional comparisons were possible by size of community and size of establishment, these national patterns were often reversed.

Virtually all production workers were in establishments providing paid holidays, paid vacations, and at least part of the cost of various health and insurance plans. Six to 11 holidays annually were typical, as were 1 to 3 weeks of vacation pay, depending on years of service.

Retirement pension plans covered slightly more than half of the work force; retirement severance plans applied to nearly one-tenth. Employers typically paid the entire cost of these retirement plans.

Slightly over three-tenths of the workers were employed in establishments having collective bargaining agreements covering a majority of the production workers. On a regional basis, collective bargaining agreement coverage ranged from slightly less than one-tenth of the workers in the Southeast and Southwest to nearly two-thirds in the Middle Atlantic region. Of the two major regions the proportions of workers in union establishments were nearly one-half in the Great Lakes and two-fifths in the Pacific. The predominant union in the industry is the United Brotherhood of Carpenters and Joiners (AFL-CIO).

A comprehensive bulletin on the study, *Industry Wage*

**Table 1. Average hourly earnings<sup>1</sup> in millwork manufacturing by selected characteristics, United States and regions,<sup>2</sup> September 1984**

Characteristic	United States	New England	Middle Atlantic	Border States	Southeast	Southwest	Great Lakes	Middle West	Mountain	Pacific
All production workers .....	\$7.37	\$6.51	\$7.61	\$5.69	\$5.41	\$5.61	\$8.04	\$7.73	\$6.70	\$8.62
Men .....	7.46	6.62	7.70	5.93	5.52	5.81	8.20	—	6.82	8.81
Women .....	—	5.20	5.53	5.04	4.79	4.77	—	—	6.06	—
Size of community:										
Metropolitan areas <sup>3</sup> .....	7.48	6.76	7.60	—	5.41	5.61	8.04	7.93	6.45	8.70
Nonmetropolitan areas .....	6.86	4.94	7.64	5.58	5.40	—	—	—	7.63	8.07
Size of establishment:										
8-99 workers .....	7.21	6.68	7.81	5.76	5.51	6.22	6.98	7.46	6.62	9.27
100-249 workers .....	6.63	—	7.34	5.99	5.13	5.14	7.28	—	7.00	7.94
250 workers or more .....	7.97	—	—	—	—	5.22	8.63	—	—	8.25
Labor-management contract coverage:										
Establishments with—										
Majority covered .....	8.52	7.68	8.07	—	—	6.25	7.70	8.35	9.47	10.51
None or a minority covered .....	6.83	6.26	6.72	5.58	5.40	5.55	8.35	7.62	6.18	7.46
Principal product:										
Flush and molded doors .....	7.55	—	5.75	—	5.22	5.12	7.43	—	6.02	10.37
Softwood doors .....	6.13	5.88	6.93	—	4.80	5.14	6.72	8.38	6.66	7.53
Windows .....	8.18	6.36	6.81	—	—	—	8.68	—	7.89	8.95
Interior woodwork .....	7.46	8.21	10.21	—	6.26	7.21	7.13	7.51	6.36	7.94
Selected production occupations:										
Assemblers .....	7.47	5.33	7.68	5.49	5.55	5.80	8.49	7.59	6.17	8.28
Cut-off saw operators .....	7.25	5.57	5.83	5.57	4.88	5.23	6.89	7.61	6.62	8.43
Janitors .....	5.42	5.72	5.65	4.66	4.11	4.56	6.40	5.69	4.99	5.94
Maintainers, general utility .....	8.12	7.46	8.03	6.70	6.82	7.84	7.95	8.05	7.99	9.90
Millworkers, journeyman .....	9.15	8.92	9.55	5.65	6.95	10.44	10.29	8.77	8.61	10.34
Molding-machine operators .....	8.03	7.34	6.12	—	6.09	6.26	7.42	8.10	7.71	9.32
Off-bearers, machine .....	6.51	5.58	5.95	5.19	4.29	4.44	6.93	6.83	6.09	7.57
Power-truck operators .....	7.44	6.83	6.87	6.17	5.56	5.43	7.40	7.52	7.18	8.92
Sanders; hand .....	5.24	—	8.49	—	4.49	4.79	6.73	—	4.59	4.79
Tenoner operators .....	7.44	7.51	6.73	5.71	5.80	5.43	7.99	8.25	7.57	8.68

<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 bonuses were included as part of the workers' regular pay. 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 year-end bonuses, and other nonproduction bonuses.

<sup>2</sup>The regions used in this study include: New England—Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont; Middle Atlantic—New Jersey, New York, and Pennsylvania; Border States—Delaware, District of Columbia, Kentucky, Mary-

land, Virginia, and West Virginia; Southeast—Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, and Tennessee; Southwest—Arkansas, Louisiana, Oklahoma, and Texas; Great Lakes—Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin; Middle West—Iowa, Kansas, Missouri, Nebraska, North Dakota, and South Dakota; Mountain—Arizona, Colorado, Idaho, Montana, New Mexico, Utah, and Wyoming; and Pacific—California, Nevada, Oregon, and Washington. Alaska and Hawaii were not included in the study.

<sup>3</sup>Metropolitan Statistical Areas, as defined by the U.S. Office of Management and Budget through June 1983.

NOTE: Dashes indicate no data or data that do not meet publication criteria.

*Survey: Millwork, September 1984*, may be purchased from the Bureau of Labor Statistics Publication, Sales Center, P.O. Box 2145, Chicago, IL 60690, or the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. The bulletin provides additional information on occupational earnings, such as distributions, and on the incidence of employee benefits. □

—FOOTNOTE—

<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 bonuses were included as part of the workers' regular pay. 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.

# Major Agreements Expiring Next Month

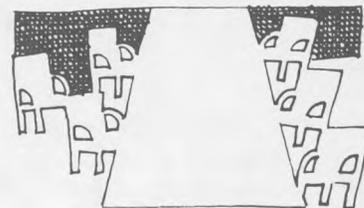


This list of selected collective bargaining agreements expiring in January is based on information from the Bureau's Office of Wages and Industrial Relations. The list includes agreements covering 1,000 workers or more. Private industry is arranged in order of Standard Industrial Classification.

Employer and location	Private industry	Labor organization <sup>1</sup>	Number of workers
Associated General Contractors of America, Arizona Chapter and Arizona Building Chapter, 4 agreements (Arizona)	Construction	Carpenters; Laborers; Cement Masons; Operating Engineers	13,250
Sugar Companies Negotiating Committee (Hawaii)	Food products	Longshoremen's and Warehousemen's (Ind.)	7,500
Philip Morris USA (Interstate)	Tobacco	Bakery, Confectionery and Tobacco Workers	10,300
P. Lorillard Co. (Kentucky)	Tobacco	Bakery, Confectionery and Tobacco Workers	1,250
Masonite Corp., Laurel division (Laurel, MS)	Lumber	Woodworkers	1,000
Time, Inc. (New York, NY)	Printing and publishing	Newspaper Guild	1,500
American Cyanamid Co., Lederle Laboratories division (Pearl River, NY)	Chemicals	Chemical Workers	1,450
Atlantic Richfield Co. and Arco Pipe Line Co. (Interstate)	Petroleum	Oil, Chemical and Atomic Workers	3,300
American Oil Co. (Interstate)	Petroleum	Oil, Chemical and Atomic Workers	3,500
Standard Oil Co., Amoco Texas Refining Co. (Texas City, TX)	Petroleum	Oil, Chemical and Atomic Workers	1,350
Gulf Oil Corp. (Port Arthur, TX)	Petroleum	Oil, Chemical and Atomic Workers	2,700
Mobil Oil Corp. (Beaumont, TX)	Petroleum	Oil, Chemical and Atomic Workers	1,200
Shell Oil Co. (Houston, TX)	Petroleum	Oil, Chemical and Atomic Workers	2,000
Shell Oil Co., Wood River refinery (Wood River, IL)	Petroleum	Various unions	1,200
Shell Oil Co. (Martinez, CA)	Petroleum	Oil, Chemical and Atomic Workers	1,200
Standard Oil Co. of Indiana, Amoco Oil Co. (Whiting, IN)	Petroleum	Oil, Chemical and Atomic Workers	1,200
Standard Oil Co. of California, Chevron USA division (Richmond, CA)	Petroleum	Oil, Chemical and Atomic Workers	1,200
Union Oil Co. of California (Los Angeles, CA)	Petroleum	Oil, Chemical and Atomic Workers	2,000
Atlantic Richfield Co. (Long Beach, CA)	Petroleum	Oil, Chemical and Atomic Workers	1,100
Champion Spark Plug Co. (Interstate)	Electrical products	Auto Workers	2,500
Bulova Watch Co. (New York)	Instruments	Independent Production, Maintenance and Service Employees (Ind.)	1,200
CPG Products Corp., Kenner Products division (Cincinnati, OH)	Miscellaneous manufacturing	Industrial Workers	1,500
Queens Transit and 3 other companies (New York, NY)	Transit	Transport Workers	1,200
Utah Power and Light Co. (Utah, Wyoming, and Idaho)	Utilities	Electrical Workers (IBEW)	3,800
Woodward and Lothrop, Inc. (Washington, DC)	Retail trade	Food and Commercial Workers	5,500
Greater Seattle Retail Drug Association Inc. (Washington)	Retail trade	Food and Commercial Workers	1,900
Montefiore Medical Center, nurses (New York, NY)	Hospitals	Nurses' Association (Ind.)	1,400
	<b>Government activity</b>	<b>Labor organization<sup>1</sup></b>	<b>Number of workers</b>
New York: Oneida County general unit	Multidepartments	State, County and Municipal Employees	1,000

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

# Developments in Industrial Relations



## Chrysler's wages and benefits match GM, Ford

About 70,000 striking employees of Chrysler Corp. resumed work after the company and the Auto Workers agreed on a 35-month contract. The breakthrough in the negotiations came in late October, when the parties tentatively agreed on the terms, which were subsequently approved by the union's 170-member Chrysler Council and by rank-and-file members.

The union attained its goal of regaining parity with the wage and benefit provisions of its current contracts with General Motors Corp. and Ford Motor Co. However, the possibility of future variations still exists because the Chrysler agreement expires in September 1988, a year after the 3-year agreements at GM and Ford. The UAW had sought a September 1987 expiration date for the Chrysler contract. The company's chief negotiator said that having a different expiration date reduces the "tendency for one-upmanship" between branches of the union. He also maintained that negotiating separately will enable Chrysler—a considerably smaller company with a narrower product line—to tailor contracts to its own needs.

Details of the Chrysler-UAW contract will appear in the January issue of the *Monthly Labor Review*.

## Master contract covers Sunshine Biscuits plants

In the bakery industry, Sunshine Biscuits Inc. and the Bakery, Confectionery and Tobacco Workers negotiated a second 2-year master contract for 1,700 workers at four plants. Prior to their first 2-year master contract, negotiated in 1983, the parties negotiated on a plant-by-plant basis.

The new contract, which was effective on October 1, provides for a 50-cent-an-hour general wage increase on April 1, 1986. There is no provision for a second-year wage increase but a \$1,000 lump-sum payment will be made on October 1, 1986, to all employees who received 13 paychecks during the preceding 12 months.

In another wage provision, workers at the facilities in Sayreville, NJ, Columbus, GA, and Sante Fe Springs, CA, will also receive two 5-cent-an-hour wage increases to bring their rates closer to those at Oakland, CA, where current rates are \$10.90 for general helpers and \$11.57 for mixers.

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"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.

Other provisions included a \$50 a month increase in the normal pension benefit, which is now available when a worker's age plus years of service total 80 (previously, a worker had to have 25 years of service, regardless of age); a 2.5-cent-an-hour increase in the night shift premium; and increased health care benefits for retirees.

## Agreement ends shipyard strike

A 99-day strike against Bath Iron Works Corp. ended when members of Local 6 of the Marine and Shipbuilding Workers ratified a 34½-month contract. The drawn-out struggle resulted because the shipyard was seeking labor cost reductions it said were necessary to compete effectively against lower cost foreign yards, while the 4,500 workers were seeking economic gains they contended were warranted by their performance and Bath's profitability. The three Bath yards, located in Maine, and other U.S. shipyards are essentially limited to competing for construction of ships for the U.S. Navy because of the intense competition from the foreign yards. According to the Shipbuilders Council of America, only five large commercial vessels have been built in the U.S. since 1981, when the Federal Government stopped subsidizing production of commercial vessels.

The Bath accord, which was a compromise, does not provide for any increases in hourly pay rates, which range up to \$11.47, but the employees received immediate \$1,000 lump-sum payments, to be followed by \$500 payments in December of 1986 and 1987. They will also receive \$200 payments for each 6 months of perfect attendance.

A type of two-tier system was adopted, under which new employees will start at \$3 an hour below the top rate for their job and move to the top rate in three steps at 1-year intervals. Previously, employees started at 50 cents below the top rate and moved to the top rate in a single step after 35 working days.

Other terms included employee payment of part of the premium cost for medical insurance (previously, Bath had paid the entire amount) and 4 days paid annual sick leave (previously, 3 days).

## Teachers' settlements

At the end of September, the number of teachers strikes had dropped to 12, involving about 60,000 students in Pennsylvania, Ohio, and Illinois. One of the settlements was in

Seattle, where 3,700 teachers and related employees negotiated a 1-year contract and ended their 25-day walkout.

Terms included allocation of money to help reduce the size of classes; to add 3 working days (at more than \$204 a day) to the teachers' 182-day schedule; and to increase the nonteaching staff.

Basic salaries for the teachers were not at issue because State law sets pay levels throughout the State. The Seattle teachers are represented by the National Education Association.

In Pittsburgh, the school board and the local unit of the American Federation of Teachers acted to improve their bargaining relationships and facilitate educational reforms by settling a year in advance of the scheduled August 31, 1986, expiration date of their contract. The 2-year extension, running to August 31, 1988, gives the parties a 3-year period during which they can concentrate on educational issues.

In the final year of the agreement, salaries will range from \$20,000 a year for starting teachers to \$40,000 for those with 9 years' experience, up from the current \$15,400 to \$34,410 range. The accord, covering 3,500 teachers, also provides for expanding their duties and responsibilities.

### **Airlines settle**

More than 12,000 mechanics and other ground service employees were covered by a settlement between American Airlines and the Transport Workers. Over the 3½-year contract term, the workers will receive three lump-sum payments totaling \$2,000, plus a 5-percent wage increase on March 5, 1988. Other provisions included continuation of company-paid health benefits for current employees (there were some cuts for new employees); revision of the pension plan to give employees credit for service they had accrued before age 25; and the addition of 1,400 members to the list of employees who cannot be required to relocate.

Northwest Orient Airlines and the Railway and Airline Clerks negotiated a 42-month contract for 4,300 clerical, ticket, and reservation workers. The contract, which was effective July 1, 1985, provides for 4-percent wage increases on January 1 of 1986 and 1987 and a 3.5-percent increase on January 1, 1988. This will bring the pay rate range to \$1,622-\$2,501 a month for ticket agents. In a change in the pay progression schedule, new employees will have to wait 10 years to attain the top rate for their job, compared with 7 years for current employees. Benefit changes included a 9.4-percent increase in the pension rate and a 10-day increase (to 130 days) in maximum sick leave accrual.

### **Kroger Co. modifies current contract**

In West Virginia, midterm contract modifications negotiated by the Kroger Co. and the United Food and Commercial Workers included a one-time severance payment offer intended to eventually reduce employment costs. The \$8,000 payment was limited to employees with hourly earnings of at least \$10.16 who agreed to quit their jobs within 60 days. A union official predicted that only 75 to 100 of the more than 2,000 eligible workers would accept the offer.)

The accord, covering a total of 3,600 workers at 57 stores (including a few in Ohio and Kentucky), also eliminated possible automatic cost-of-living pay adjustments in October of 1985 and 1986.

### **Safeway, Lucky stores negotiate concessions**

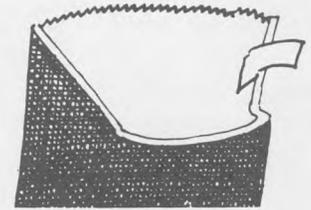
In Northern California, 14 months of bitter negotiations between the Teamsters and Safeway Stores, Inc., and Lucky Stores, Inc., finally resulted in a 45-month contract for delivery and warehouse workers that was retroactive to the August 1, 1984, expiration date of the prior contract. Although 64.4 percent of the votes cast were against the accord, it carried because the union's bylaws require that two-thirds of the votes be negative for a turndown. A union official said the requirement was appropriate because the union believes a strike cannot be effective without the support of at least two-thirds of the members.

The concessions took several forms. One was adoption of a two-tier compensation structure under which employees hired after July 13, 1985, will take 3 years to progress to the maximum pay rate for their job, unlike current employees who started at the single rate. The same progression structure also applies to sick leave.

There also were permanent changes in benefits, with new employees limited to 6 paid holidays, compared with 11 for current employees, and 1 week of paid vacation, compared with maximum of 6 weeks for current employees.

During the first part of the contract, employees will receive semi-annual lump-sum payments calculated at 50 cents for each straight-time hour worked during the preceding 6 months. The first payment will be in March 1986 and the last in 1987. At that time, the 1,850 workers will begin receiving a 50-cent increase in hourly wage rates, which reportedly averaged \$16.02 for drivers and \$15.42 for warehouse workers at the time of settlement.

The contract also provided for increased use of casual and part-time workers and for changes in work schedules to permit weekend work to be performed at straight-time pay rates. □



# Book Reviews

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## Strategies for fighting stagflation

*The Politics of Inflation and Economic Stagnation: Theoretical Approaches and International Case Studies.* Edited by Leon N. Lindberg and Charles S. Maier. Washington, The Brookings Institution, 1985. 612 pp. \$38.95, cloth; \$18.95, paper.

This volume is the outgrowth of a conference held by The Brookings Institution in 1978 to examine the elements making for the persistent inflation and economic stagnation among the major industrial countries from the mid-1960's to the 1980's. The composition of the authorship of this treatment is unusual, as is the orientation. The 15 contributors of individual chapters are political scientists, historians, sociologists, as well as economists. Their frame of reference was to analyze the interaction of national political and social forces with the market conditions making for inflation and the deterioration of economic conditions. The editors, Leon N. Lindberg of the University of Wisconsin and Charles S. Maier of Harvard University, have marshaled the several contributions and their own perceptive syntheses and conclusions into a logical whole.

The need for an institutional approach to stagflation is explained by several of the authors. Albert O. Hirschman of Harvard observes that the elaborate economic theories of inflation dominate the field because they can be utilized for policy advice, while economists tend to treat the deeper political and social roots in vague notions such as "rising expectations," "faltering social cohesion," and "governability crisis." Furthermore, conventional economic analyses treated the events associated with inflation in the 1970's as random influences, even as they became so continuous as to suggest systemic conditions. Maier points out that the major analysis by the Organization for Economic Cooperation and Development in 1977 of inflation and recession, while recognizing that there had been basic changes in behavior patterns and power relationships internationally and within countries, attributed these to "an unusual bunching of unfortunate disturbances unlikely to be repeated on the same scale, the impact of which was compounded by some avoidable errors in economic policy."

While some events may be random, and policy errors may be made, persistent economic conditions require more incisive examination of the underlying political and social

conditions. The authors have achieved this through a cross-sectional treatment of individual national case studies of Japan, Italy, West Germany, and Sweden in contrast with experience in the United States, the United Kingdom, and Latin America, on which are also based theoretical discussions regarding the roles of trade union wage restraint, public expenditures, governmental policy, democracy, and central banks. The authors demonstrate that both economic ends and means are political acts. Nations decide on their priorities, with the preferences and observed needs determined by cultural and historic traditions in setting the mix of growth, employment, price stability, and equity.

The responses of the leading industrial countries to inflation between 1970 and 1982 are categorized by Lindberg into three configurations. "Open and unstructured confrontation" characterized the United States, United Kingdom, Canada, Australia, and Italy, with policy actions utilized to attain power and income claims, and few means available for circumscribing conflict. "Muted confrontation and structured bargaining" characterized West Germany, Austria, the Netherlands, and the Scandinavian countries, with explicit bargaining among Scandinavian groups, including labor and business, and the State, to allocate real income losses. The third category, "statist or controlled management," characterized France and Japan, with governing elites with power to channel investment, encourage industrial concentration, determine acceptance of altered monetary constitution, and ability to guarantee income and employment security. In the first configuration, labor was relatively weak and in an adversarial position with management. In the second, labor was strong, unions and employers were centrally organized for bargaining, and cooperative relations existed within the normal competitive roles of capitalism. In the statist mode, labor was weak and fragmented, business was centralized and well organized.

The authors comment on the heavy economic toll taken by the deliberately restrictive economic policies of the United States, the United Kingdom, and Canada, in coping with inflation, with moderate improvement in the United States, but continued substantial unemployment in the United Kingdom. Up to the early 1980's, restrictive policies apparently worked more efficiently in West Germany and Japan where economic decisions maintained a closer balance with long developed government guarantees and institutional arrange-

ments. Some of the smaller countries, which had to accept higher unemployment rates, eased the burdens with improved welfare and job training programs. Sweden, Norway, and Japan kept rates of unemployment low by encouraging wage and price restraint, or through manpower, investment, and industry policies directed at the supply side of the economy. Lindberg concludes that economic strategies that strip away long established guarantees "in the name of liberating market forces and subjecting economic and political transactions to the discipline of the market may produce a politics and economics of disinflation that is more destabilizing than the disturbances produced by the inflation of the 1970's."

The experience described in the volume is cited as basis for the conclusion that modern, democratic, capitalist economies must adapt to technological and structural changes through large bureaucratic organizations and by recognizing a broad distribution of power. "The approaches that Japan, West Germany, Sweden, and Austria have taken to economic change seem to have important advantages. They counsel employment-oriented policies, active inclusion of workers in productivity and even in investment decisions at the plant level and in economic policymaking at the national level, and government participation in carrying out the strategies of industrial adaptation."

The authors find that while neo-Keynesianism could not meet the test of price and wage stability in the 1970's, neither is primary reliance on the market acceptable, in that it has resulted in high unemployment and regressive transfers of income. New initiatives are needed and possible "if there is to be an alternative to smashing unions, forcing concessionary wages as an anti-inflationary strategy, and eroding the welfare state." With appropriate cautions, they suggest that corporatism, the policy of involving spokesmen for labor, business, and the state in tripartite consensual bargaining, as in Scandinavia, Austria, and the Netherlands, can provide the means for democratic coordination at the national level for consideration of economic policies. But they acknowledge that corporatist arrangements are not readily imported. In the countries where they are well established, they are grounded in historic indigenous conditions.

In the United States, where close relations between labor, management, and government remain for development, the elected legislature could be the focus for considering alternative economic policies, including investment, with advisory national commissions grouping labor and management representatives. The empirical evidence suggests that this would be a worthwhile effort in the face of the disruptive effects of continuing economic instability and industrial transformation.

—JOSEPH P. GOLDBERG

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Bureau of Labor Statistics

### An ILO study of social security

*Into the Twenty-First Century: The Development of Social Security.* By Pierre Laroque and others. Geneva, Switzerland, International Labour Office, 1984. 115 pp. \$12.85 (U.S.), paper.

The book is subtitled, "A report to the Director-General of the International Labour Office on the response of the social security system in industrialized countries to economic and social change." It is the joint effort of 3 years of labor by 10 illustrious experts on social security drawn from as many nations and given the charge, "to provide him [the Director-General of the ILO] with a report on the likely evolution of social security in industrialized countries as we approach the end of this century."

The volume is slim but rich in content. It is timely and important, both because of its thoughtful conclusions and recommendations—even though one may disagree with some of them (as the authors readily concede)—and even more so because of the forceful and courageous reaffirmation by the authors of the essential, lasting, and dynamic role that social security must play in modern society.

The drafting of the report and the recommendations fell to Professor Brian Abel-Smith of the London School of Economics. He culled the descriptive part of the report from factual material and documentation contributed by members of the study group and by the Social Security Department of the International Labour Office.

Chapter 1 covers social security's achievements, the real or alleged drawbacks, notably economic and financial, as well as the shortfalls and failures, and identifies unsolved problems.

Chapter 2 stakes out some goals for the foreseeable future. It examines the programs' continued *raison d'être*, their character (comprehensive and universal or selective), and their place within a country's socioeconomic fabric, for example, income distribution and poverty.

Chapters 3 to 6 deal with developments in cash benefits; services; relations with the public; and financing. Chapter 7 projects the future for social security as a whole, as well as in terms of its component parts.

Although of primary interest to specialists in the field, the book can be easily understood by laymen. It may be particularly useful as a supplemental text in college and university courses on social policy and as a study guide in training courses sponsored by labor and civic organizations. Futurists will also be interested in it, as will those persons concerned with enhancing the well-being of citizens as a whole. In fact, the authors repeatedly link a "sense of community" with any kind of social security. They refer to it variously as a "sense of shared responsibility" or a "consciousness of solidarity"—"national solidarity" at present and "perhaps—tomorrow—international solidarity."

The book offers many challenging propositions to program planners and developers. For example, the redefinition

of the aims of social security; the identification of new patterns of dependency; new conceptions of prevention and rehabilitation; the plea for "a unified system of disability benefits;" innovative thoughts on the changing nature of some of the common contingencies, such as old age and unemployment, and corresponding changes in benefit structure in light thereof; the complementarity of private programs—statutory and other; and unconventional views on financing. Reiterating that "above all else, social security is a compact between generations," the authors regard the establishment of "an effective minimum income for all residents" as "the major challenge for social security policy to be achieved before the year 2000."

Going beyond this practical target, the authors would hold both the individual and the community responsible "for maintaining and preserving good physical and mental health," and they advocate that "people should be coerced, or believe they may be coerced, into using social services by the threat of withdrawal of cash assistance." No dearth here of issues for lively, even passionate, discussion!

At a time when it is increasingly fashionable to highlight social security's shortcomings and problem areas, notably inequities, and to plead for the drastic retrenchment or even the phasing out of social security as obsolete—sometimes from a rather narrow socioeconomic perspective—the affirmative, constructive, and imaginative treatment offered in this book is indeed gratifying.

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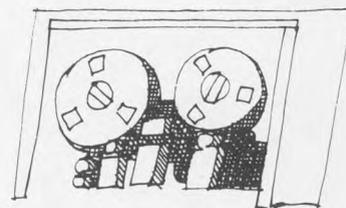
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## NOTES ON CURRENT LABOR STATISTICS

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

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

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

Seasonally adjusted labor force data in tables 3-8 were revised in the February 1985 issue of the *Review*, to reflect experience through 1984.

Beginning in January 1980, the BLS introduced two major modifications in the seasonal adjustment methodology for labor force data. First, the data are being seasonally adjusted with a new procedure called X-11/ARIMA, which was developed at Statistics Canada as an extension of the standard X-11 method. A detailed description of the procedure appears in *The X-11 ARIMA Seasonal Adjustment Method* by Estela Bee Dagum (Statistics Canada Catalogue No. 12-564E, January 1983). The second change is that seasonal factors are now being calculated for use during the first 6 months of the year, rather than for the entire year, and then are calculated at mid-year for the July-December period. Revisions of historical data continue to be made only at the end of each calendar year.

Annual revision of the seasonally adjusted payroll data shown in tables 11, 13, 15, and 17 were made in July 1985 using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in tables 29 and 30 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month to month and from quarter to quarter are published for numerous Consumer and Producer

Price Index series. However, seasonally adjusted indexes are not published for the U.S. average All Items CPI. Only seasonally adjusted percent changes are available for this series.

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

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

### Symbols

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

**Schedule of release dates for BLS statistical series**

Series	Release date	Period covered	Release date	Period covered	Release date	Period covered	MLR table number
Productivity and costs:							
Nonfinancial corporations . . . . .	December 2	3rd quarter	.....	.....	February 27	4th quarter	29-32
Nonfarm business and manufacturing . . . . .	.....	.....	January 28	4th quarter	.....	.....	29-32
Employment situation . . . . .	December 6	November	January 8	December	February 7	January	1-11
Producer Price Index . . . . .	December 13	November	January 10	December	February 14	January	23-27
Consumer Price Index . . . . .	December 20	November	January 22	December	February 25	January	19-22
Real earnings . . . . .	December 20	November	January 22	December	February 25	January	12-16
Major collective bargaining settlements . . . . .	.....	.....	January 27	1985	.....	.....	36-37
Employment Cost Index . . . . .	.....	.....	January 28	4th quarter	.....	.....	33-35
U.S. Import and Export Price Indexes . . . . .	.....	.....	January 30	4th quarter	.....	.....	.....

## EMPLOYMENT DATA FROM THE HOUSEHOLD SURVEY

EMPLOYMENT DATA in this section are obtained from the Current Population Survey, a program of personal interviews conducted monthly by the Bureau of the Census for the Bureau of Labor Statistics. The sample consists of about 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 **unemployment**

**rate** for all civilian workers represents the number unemployed as a percent of the civilian labor force.

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

### Notes on the data

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

Data in tables 2-8 are seasonally adjusted, based on the seasonal experience through December 1984.

**1. Employment status of the noninstitutional population, 16 years and over, selected years, 1950-84**

(Numbers in thousands)

Year	Noninstitutional population	Labor force										Not in labor force
		Number	Percent of population	Employed						Unemployed		
				Total	Percent of population	Resident Armed Forces	Civilian			Number	Percent of labor force	
							Total	Agriculture	Nonagricultural Industries			
1950	106,164	63,377	59.7	60,087	56.6	1,169	58,918	7,160	51,758	3,288	5.2	42,787
1955	111,747	67,087	60.0	64,234	57.5	2,064	62,170	6,450	55,722	2,852	4.3	44,660
1960	119,106	71,489	60.0	67,639	56.8	1,861	65,778	5,458	60,318	3,852	5.4	46,617
1965	128,459	76,401	59.5	73,034	56.9	1,946	71,088	4,361	66,726	3,366	4.4	52,058
1966	130,180	77,892	59.8	75,017	57.6	2,122	72,895	3,979	68,915	2,875	3.7	52,288
1967	132,092	79,565	60.2	76,590	58.0	2,218	74,372	3,844	70,527	2,975	3.7	52,527
1968	134,281	80,990	60.3	78,173	58.2	2,253	75,920	3,817	72,103	2,817	3.5	53,291
1969	136,573	82,972	60.8	80,140	58.7	2,238	77,902	3,606	74,296	2,832	3.4	53,602
1970	139,203	84,889	61.0	80,796	58.0	2,118	78,678	3,463	75,215	4,093	4.8	54,315
1971	142,189	86,355	60.7	81,340	57.2	1,973	79,367	3,394	75,972	5,016	5.8	55,834
1972	145,939	88,847	60.9	83,966	57.5	1,813	82,153	3,484	78,669	4,882	5.5	57,091
1973	148,870	91,203	61.3	86,838	58.3	1,774	85,064	3,470	81,594	4,355	4.8	57,667
1974	151,841	93,670	61.7	88,515	58.3	1,721	86,794	3,515	83,279	5,156	5.5	58,171
1975	154,831	95,453	61.6	87,524	56.5	1,678	85,845	3,408	82,438	7,929	8.3	59,377
1976	157,818	97,826	62.0	90,420	57.3	1,668	88,752	3,331	85,421	7,406	7.6	59,991
1977	160,689	100,665	62.6	93,673	58.3	1,656	92,017	3,283	88,734	6,991	6.9	60,025
1978	163,541	103,882	63.5	97,679	59.7	1,631	96,048	3,387	92,661	6,202	6.0	59,659
1979	166,460	106,559	64.0	100,421	60.3	1,597	98,824	3,347	95,477	6,137	5.8	59,900
1980	169,349	108,544	64.1	100,907	59.6	1,604	99,303	3,364	95,938	7,637	7.0	60,806
1981	171,775	110,315	64.2	102,042	59.4	1,645	100,397	3,368	97,030	8,273	7.5	61,460
1982	173,939	111,872	64.3	101,194	58.2	1,668	99,526	3,401	96,125	10,678	9.5	62,067
1983	175,891	113,226	64.4	102,510	58.3	1,676	100,834	3,383	97,450	10,717	9.5	62,665
1984	178,080	115,241	64.7	106,702	59.9	1,697	105,005	3,321	101,685	8,539	7.4	62,839

c = corrected.

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

[Numbers in thousands]

Employment status and sex	Annual average		1984			1985										
	1983	1984	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	
<b>TOTAL</b>																
Noninstitutional population <sup>1,2</sup>	175,891	178,080	178,661	178,834	179,004	179,081	179,219	179,368	179,501	179,649	179,798	179,967	180,131	180,304	180,470	
Labor force <sup>2</sup>	113,226	115,241	115,721	115,773	116,162	116,572	116,787	117,215	117,073	117,078	116,485	117,018	117,025	117,550	117,859	
Participation rate <sup>3</sup>	64.4	64.7	64.8	64.7	64.9	65.1	65.2	65.3	65.2	65.2	64.8	65.0	65.0	65.2	65.3	
Total employed <sup>2</sup>	102,510	106,702	107,354	107,631	107,971	108,088	108,388	108,820	108,647	108,665	108,072	108,566	108,898	109,276	109,567	
Employment-population rate <sup>4</sup>	58.3	59.9	60.1	60.2	60.3	60.4	60.5	60.7	60.5	60.5	60.1	60.3	60.5	60.6	60.7	
Resident Armed Forces <sup>1</sup>	1,676	1,697	1,705	1,699	1,698	1,697	1,703	1,701	1,702	1,705	1,702	1,704	1,726	1,732	1,700	
Civilian employed	100,834	105,005	105,649	105,932	106,273	106,391	106,685	107,119	106,945	106,960	106,370	106,862	107,172	107,544	107,867	
Agriculture	3,383	3,321	3,169	3,334	3,385	3,320	3,340	3,362	3,428	3,312	3,138	3,126	3,092	2,976	3,026	
Nonagricultural industries	97,450	101,685	102,480	102,598	102,888	103,071	103,345	103,757	103,517	103,648	103,232	103,737	104,080	104,568	104,841	
Unemployed	10,717	8,539	8,367	8,142	8,191	8,484	8,399	8,396	8,426	8,413	8,413	8,451	8,127	8,274	8,291	
Unemployment rate <sup>5</sup>	9.5	7.4	7.2	7.0	7.1	7.3	7.2	7.2	7.2	7.2	7.2	7.2	6.9	7.0	7.0	
Not in labor force	62,665	62,839	62,940	63,061	62,842	62,509	62,432	62,153	62,428	62,571	63,313	62,949	63,106	62,754	62,611	
<b>Men, 16 years and over</b>																
Noninstitutional population <sup>1,2</sup>	84,064	85,156	85,439	85,523	85,607	85,629	85,692	85,764	85,827	85,898	85,970	86,052	86,132	86,217	86,293	
Labor force <sup>2</sup>	64,580	65,386	65,558	65,657	65,814	65,822	65,818	65,923	65,986	66,032	65,608	65,900	65,901	66,106	66,259	
Participation rate <sup>3</sup>	76.8	76.8	76.7	76.8	76.9	76.9	76.8	76.9	76.9	76.9	76.3	76.6	76.5	76.7	76.8	
Total employed <sup>2</sup>	58,320	60,642	61,018	61,155	61,252	61,213	61,226	61,427	61,405	61,553	60,959	61,256	61,507	61,685	61,689	
Employment-population rate <sup>4</sup>	69.4	71.2	71.4	71.5	71.6	71.5	71.4	71.6	71.5	71.7	70.9	71.2	71.4	71.5	71.5	
Resident Armed Forces <sup>1</sup>	1,533	1,551	1,557	1,552	1,550	1,549	1,554	1,553	1,553	1,556	1,552	1,554	1,574	1,580	1,551	
Civilian employed	56,787	59,091	59,461	59,603	59,702	59,664	59,672	59,874	59,852	59,997	59,407	59,702	59,933	60,105	60,138	
Unemployed	6,260	4,744	4,540	4,502	4,562	4,609	4,592	4,495	4,582	4,479	4,649	4,644	4,395	4,421	4,570	
Unemployment rate <sup>5</sup>	9.7	7.3	6.9	6.9	6.9	7.0	7.0	6.8	6.9	6.8	7.1	7.0	6.7	6.7	6.9	
<b>Women, 16 years and over</b>																
Noninstitutional population <sup>1,2</sup>	91,827	92,924	93,222	93,311	93,397	93,452	93,527	93,603	93,674	93,751	93,828	93,915	93,999	94,087	94,177	
Labor force <sup>2</sup>	48,646	49,855	50,163	50,116	50,348	50,750	50,970	51,293	51,086	51,047	50,877	51,117	51,123	51,444	51,599	
Participation rate <sup>3</sup>	53.0	53.7	53.8	53.7	53.9	54.3	54.5	54.8	54.5	54.4	54.2	54.4	54.4	54.7	54.8	
Total employed <sup>2</sup>	44,190	46,061	46,336	46,476	46,719	46,875	47,162	47,392	47,242	47,113	47,113	47,310	47,391	47,591	47,878	
Employment-population rate <sup>4</sup>	48.1	49.6	49.7	49.8	50.0	50.2	50.4	50.6	50.4	50.3	50.2	50.4	50.4	50.6	50.8	
Resident Armed Forces <sup>1</sup>	143	146	148	147	148	148	149	148	149	149	150	150	152	152	149	
Civilian employed	44,047	45,915	46,188	46,329	46,571	46,727	47,013	47,244	47,093	46,964	46,963	47,160	47,239	47,439	47,729	
Unemployed	4,457	3,794	3,827	3,640	3,629	3,875	3,807	3,900	3,844	3,934	3,764	3,807	3,732	3,854	3,721	
Unemployment rate <sup>5</sup>	9.2	7.6	7.6	7.3	7.2	7.6	7.5	7.6	7.5	7.7	7.4	7.4	7.3	7.5	7.2	

<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).

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

[Numbers in thousands]

Employment status	Annual average		1984			1985										
	1983	1984	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	
<b>TOTAL</b>																
Civilian noninstitutional population <sup>1</sup>	174,215	176,383	176,956	177,135	177,306	177,384	177,516	177,667	177,799	177,944	178,096	178,263	178,405	178,572	178,770	
Civilian labor force	111,550	113,544	114,016	114,074	114,464	114,875	115,084	115,514	115,371	115,373	114,783	115,314	115,299	115,818	116,159	
Participation rate	64.0	64.4	64.4	64.4	64.6	64.8	64.8	65.0	64.9	64.8	64.5	64.7	64.6	64.9	65.0	
Employed	100,834	105,005	105,649	105,932	106,273	106,391	106,685	107,119	106,945	106,960	106,370	106,862	107,172	107,544	107,867	
Employment-population ratio <sup>2</sup>	57.9	59.5	59.7	59.8	59.9	60.0	60.1	60.3	60.1	60.1	59.7	59.9	60.1	60.2	60.3	
Unemployed	10,717	8,539	8,367	8,142	8,191	8,484	8,399	8,396	8,426	8,413	8,413	8,451	8,127	8,274	8,291	
Unemployment rate	9.6	7.5	7.3	7.1	7.2	7.4	7.3	7.3	7.3	7.3	7.3	7.3	7.0	7.1	7.1	
Not in labor force	62,665	62,839	62,940	63,061	62,842	62,509	62,432	62,153	62,428	62,571	63,313	62,949	63,106	62,754	62,611	
<b>Men, 20 years and over</b>																
Civilian noninstitutional population <sup>1</sup>	74,872	76,219	76,565	76,663	76,753	76,760	76,829	76,904	76,988	77,068	77,135	77,243	77,306	77,389	77,498	
Civilian labor force	58,744	59,701	59,913	59,994	60,131	60,033	60,061	60,152	60,177	60,214	60,100	60,143	60,227	60,438	60,564	
Participation rate	78.5	78.3	78.3	78.3	78.3	78.2	78.2	78.2	78.2	78.1	77.9	77.9	77.9	78.1	78.1	
Employed	53,487	55,769	56,182	56,269	56,372	56,234	56,287	56,421	56,370	56,563	56,209	56,376	56,628	56,802	56,901	
Employment-population ratio <sup>2</sup>	71.4	73.2	73.4	73.4	73.4	73.3	73.3	73.4	73.2	73.4	72.9	73.0	73.3	73.4	73.4	
Agriculture	2,429	2,418	2,334	2,434	2,494	2,417	2,362	2,326	2,390	2,370	2,266	2,231	2,232	2,148	2,153	
Nonagricultural industries	51,058	53,351	53,848	53,835	53,878	53,817	53,926	54,095	53,980	54,193	53,944	54,145	54,396	54,654	54,748	
Unemployed	5,257	3,932	3,731	3,725	3,759	3,798	3,774	3,731	3,807	3,651	3,891	3,767	3,600	3,637	3,663	
Unemployment rate	8.9	6.6	6.2	6.2	6.3	6.3	6.3	6.2	6.3	6.1	6.5	6.3	6.0	6.0	6.0	
<b>Women, 20 years and over</b>																
Civilian noninstitutional population <sup>1</sup>	84,069	85,429	85,793	85,897	85,995	86,015	86,086	86,181	86,274	86,380	86,477	86,575	86,652	86,727	86,810	
Civilian labor force	44,636	45,900	46,264	46,279	46,463	46,771	46,894	47,193	47,155	47,077	47,180	47,184	47,344	47,568	47,675	
Participation rate	53.1	53.7	53.9	53.9	54.0	54.4	54.5	54.8	54.7	54.5	54.6	54.5	54.6	54.8	54.9	
Employed	41,004	42,793	43,091	43,252	43,511	43,610	43,768	44,014	43,958	43,846	44,032	44,059	44,152	44,324	44,636	
Employment-population ratio <sup>2</sup>	48.8	50.1	50.2	50.4	50.6	50.7	50.8	51.1	51.0	50.8	50.9	50.9	51.0	51.1	51.4	
Agriculture	620	595	569	580	595	592	614	659	651	597	558	596	571	540	626	
Nonagricultural industries	40,384	42,198	42,522	42,672	42,916	43,018	43,153	43,355	43,307	43,249	43,474	43,463	43,580	43,784	44,010	
Unemployed	3,632	3,107	3,173	3,027	2,952	3,161	3,126	3,179	3,197	3,231	3,148	3,125	3,192	3,244	3,038	
Unemployment rate	8.1	6.8	6.9	6.5	6.4	6.8	6.7	6.7	6.8	6.9	6.7	6.6	6.7	6.8	6.4	
<b>Both sexes, 16 to 19 years</b>																
Civilian noninstitutional population <sup>1</sup>	15,274	14,735	14,598	14,575	14,557	14,610	14,600	14,582	14,538	14,496	14,483	14,445	14,448	14,456	14,463	
Civilian labor force	8,171	7,943	7,839	7,801	7,870	8,072	8,129	8,169	8,039	8,082	7,502	7,986	7,728	7,812	7,920	
Participation rate	53.5	53.9	53.9	53.5	54.1	55.2	55.7	56.0	55.3	55.8	51.8	55.3	53.5	54.0	54.8	
Employed	6,342	6,444	6,376	6,411	6,390	6,547	6,630	6,684	6,617	6,551	6,128	6,427	6,393	6,418	6,330	
Employment-population ratio <sup>2</sup>	41.5	43.7	43.7	44.0	43.9	44.8	45.4	45.8	45.5	45.2	42.3	44.5	44.2	44.4	43.8	
Agriculture	334	309	266	320	296	311	364	377	387	345	313	298	289	288	246	
Nonagricultural industries	6,008	6,135	6,110	6,091	6,094	6,236	6,266	6,307	6,230	6,206	5,815	6,129	6,104	6,130	6,084	
Unemployed	1,829	1,499	1,463	1,390	1,480	1,525	1,499	1,485	1,422	1,531	1,374	1,559	1,335	1,394	1,590	
Unemployment rate	22.4	18.9	18.7	17.8	18.8	18.9	18.4	18.2	17.7	18.9	18.3	19.5	17.3	17.8	20.1	
<b>White</b>																
Civilian noninstitutional population <sup>1</sup>	150,805	152,347	152,605	152,659	152,734	153,103	153,191	153,296	153,388	153,489	153,597	153,717	153,819	153,938	154,082	
Civilian labor force	97,021	98,492	98,631	98,630	99,005	99,496	99,711	100,035	99,805	99,768	99,441	99,735	99,735	100,165	100,598	
Participation rate	64.3	64.6	64.6	64.6	64.8	65.0	65.1	65.3	65.1	65.0	64.7	64.9	64.8	65.1	65.3	
Employed	88,893	92,120	92,407	92,587	92,884	93,124	93,552	93,785	93,544	93,539	92,990	93,374	93,599	94,071	94,452	
Employment-population ratio <sup>2</sup>	58.9	60.5	60.6	60.6	60.8	61.1	61.2	61.0	60.9	60.5	60.7	60.8	60.8	61.1	61.3	
Unemployed	8,128	6,372	6,224	6,043	6,121	6,372	6,159	6,250	6,262	6,230	6,451	6,362	6,136	6,094	6,146	
Unemployment rate	8.4	6.5	6.3	6.1	6.2	6.4	6.2	6.2	6.3	6.2	6.5	6.4	6.2	6.1	6.1	
<b>Black</b>																
Civilian noninstitutional population <sup>1</sup>	18,925	19,348	19,449	19,481	19,513	19,518	19,542	19,569	19,594	19,620	19,646	19,675	19,700	19,728	19,761	
Civilian labor force	11,647	12,033	12,208	12,276	12,306	12,315	12,309	12,280	12,403	12,370	12,269	12,347	12,267	12,359	12,419	
Participation rate	61.5	62.2	62.8	63.0	63.1	63.1	63.0	62.8	63.3	63.0	62.5	62.8	62.3	62.6	62.8	
Employed	9,375	10,119	10,340	10,426	10,462	10,475	10,301	10,412	10,508	10,438	10,551	10,493	10,548	10,468	10,556	
Employment-population ratio <sup>2</sup>	49.5	52.3	53.2	53.5	53.6	53.7	52.7	53.2	53.6	53.2	53.7	53.3	53.5	53.1	53.4	
Unemployed	2,272	1,914	1,868	1,850	1,844	1,840	2,008	1,869	1,894	1,932	1,718	1,854	1,718	1,892	1,863	
Unemployment rate	19.5	15.9	15.3	15.1	15.0	14.9	16.3	15.2	15.3	15.6	14.0	15.0	14.0	15.3	15.0	
<b>Hispanic origin</b>																
Civilian noninstitutional population <sup>1</sup>	10,795	11,164	11,270	11,301	11,332	11,363	11,394	11,425	11,457	11,485	11,514	11,544	11,573	11,601	11,630	
Civilian labor force	6,884	7,247	7,384	7,394	7,472	7,255	7,330	7,365	7,336	7,330	7,416	7,470	7,547	7,607	7,616	
Participation rate	63.8	64.9	65.5	65.4	65.9	63.8	64.3	64.5	64.0	63.8	64.4	64.7	65.2	65.6	65.5	
Employed	5,943	6,469	6,574	6,636	6,698	6,487	6,621	6,615	6,577	6,546	6,629	6,634	6,771	6,817	6,758	
Employment-population ratio <sup>2</sup>	55.1	57.9	58.3	58.7	59.1	57.1	58.1	57.9	57.4	57.0	57.6	57.5	58.5	58.8	58.1	
Unemployed	940	778	810	758	774	768	709	750	759	784	787	836	776	790	858	
Unemployment rate	13.7	10.7	11.0	10.3	10.4	10.6	9.7	10.2	10.3	10.7	10.6	11.2	10.3	10.4	11.3	

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

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

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

**4. Selected employment indicators, seasonally adjusted**

[In thousands]

Selected categories	Annual average		1984			1985									
	1983	1984	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
<b>CHARACTERISTIC</b>															
Civilian employed, 16 years and over	100,834	105,005	105,649	105,932	106,273	106,391	106,685	107,119	106,945	106,960	106,370	106,862	107,172	107,544	107,867
Men	56,787	59,091	59,461	59,603	59,702	59,644	59,672	59,874	59,852	59,997	59,407	59,702	59,933	60,105	60,138
Women	44,047	45,915	46,188	46,329	46,571	46,727	47,013	47,244	47,093	46,964	46,963	47,160	47,239	47,439	47,729
Married men, spouse present	37,967	39,056	39,054	39,337	39,443	39,441	39,357	39,531	39,434	39,244	38,897	39,060	39,109	39,052	39,309
Married women, spouse present	24,603	25,636	25,897	25,995	26,122	25,912	26,108	26,195	26,058	25,951	26,130	26,295	26,363	26,537	26,738
Women who maintain families	5,091	5,465	5,378	5,396	5,396	5,584	5,525	5,631	5,622	5,683	5,696	5,624	5,627	5,516	5,472
<b>MAJOR INDUSTRY AND CLASS OF WORKER</b>															
<b>Agriculture:</b>															
Wage and salary workers	1,579	1,555	1,511	1,593	1,733	1,596	1,611	1,610	1,705	1,611	1,538	1,461	1,427	1,408	1,433
Self-employed workers	1,565	1,553	1,487	1,555	1,485	1,531	1,503	1,502	1,491	1,507	1,446	1,487	1,448	1,391	1,443
Unpaid family workers	240	213	187	204	212	227	242	263	231	196	154	168	174	178	178
<b>Nonagricultural industries:</b>															
Wage and salary workers	89,500	93,565	94,415	94,442	94,725	95,068	95,348	95,756	95,617	95,772	95,229	95,456	95,716	96,589	96,564
Government	15,537	15,770	15,997	15,785	15,858	15,738	16,009	16,004	15,968	15,905	15,988	15,843	16,080	16,196	16,288
Private industries	73,963	77,794	78,418	78,657	78,867	79,330	79,339	79,752	79,649	79,866	79,242	79,613	79,636	80,393	80,275
Private households	1,247	1,238	1,213	1,228	1,257	1,374	1,304	1,210	1,208	1,259	1,204	1,258	1,320	1,282	1,295
Other	72,716	76,556	77,205	77,429	77,610	77,956	78,035	78,542	78,441	78,607	78,038	78,355	78,316	79,112	78,981
Self-employed workers	7,575	7,785	7,782	7,731	7,786	7,783	7,673	7,809	7,696	7,665	7,694	7,692	7,904	7,840	8,036
Unpaid family workers	376	335	314	357	357	343	340	320	304	283	292	264	303	265	243
<b>PERSONS AT WORK PART TIME<sup>1</sup></b>															
<b>All industries:</b>															
Part time for economic reasons	6,266	5,744	5,710	5,623	5,814	5,628	5,335	5,664	5,664	5,912	5,533	5,624	5,713	5,551	5,431
Slack work	2,833	2,430	2,514	2,449	2,596	2,431	2,212	2,599	2,580	2,658	2,543	2,404	2,509	2,459	2,204
Could only find part-time work	3,099	2,948	2,879	2,855	2,873	2,848	2,835	2,744	2,755	2,888	2,706	2,752	2,865	2,766	2,943
Voluntary part time	12,911	13,169	13,126	13,142	13,239	13,355	13,647	13,624	13,278	12,905	13,398	13,791	13,697	13,456	13,787
<b>Nonagricultural industries:</b>															
Part time for economic reasons	5,997	5,512	5,483	5,413	5,596	5,389	5,077	5,400	5,374	5,617	5,257	5,350	5,443	5,297	5,213
Slack work	2,684	2,291	2,364	2,319	2,473	2,287	2,040	2,405	2,390	2,457	2,341	2,242	2,353	2,323	2,075
Could only find part-time work	2,993	2,866	2,821	2,782	2,793	2,749	2,751	2,649	2,668	2,803	2,646	2,668	2,766	2,648	2,847
Voluntary part time	12,417	12,704	12,679	12,670	12,778	12,861	13,157	13,137	12,834	12,483	12,970	13,343	13,266	13,020	13,357

<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.

## 5. Selected unemployment indicators, seasonally adjusted

[Unemployment rates]

Selected categories	Annual average		1984			1985									
	1983	1984	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
<b>CHARACTERISTIC</b>															
Total, all civilian workers	9.6	7.5	7.3	7.1	7.2	7.4	7.3	7.3	7.3	7.3	7.3	7.3	7.0	7.1	7.1
Both sexes, 16 to 19 years	22.4	18.9	18.7	17.8	18.8	18.9	18.4	18.2	17.7	18.9	18.3	19.5	17.3	17.8	20.1
Men, 20 years and over	8.9	6.6	6.2	6.2	6.3	6.3	6.3	6.2	6.3	6.1	6.5	6.3	6.0	6.0	6.0
Women, 20 years and over	8.1	6.8	6.9	6.5	6.4	6.8	6.7	6.7	6.8	6.9	6.7	6.6	6.7	6.8	6.4
White, total	8.4	6.5	6.3	6.1	6.2	6.4	6.2	6.2	6.3	6.2	6.5	6.4	6.2	6.1	6.1
Both sexes, 16 to 19 years	19.3	16.0	15.9	15.1	15.9	15.8	15.2	15.1	14.9	16.1	15.9	16.3	15.3	15.1	17.2
Men, 16 to 19 years	20.2	16.8	16.6	16.2	16.2	15.9	17.0	15.2	15.3	16.8	16.7	17.5	17.6	15.9	18.8
Women, 16 to 19 years	18.3	15.2	15.2	13.9	15.5	15.8	13.4	14.9	14.3	15.3	15.1	15.0	12.7	14.2	15.5
Men, 20 years and over	7.9	5.7	5.4	5.4	5.4	5.5	5.4	5.4	5.5	5.2	5.8	5.6	5.3	5.2	5.1
Women, 20 years and over	6.9	5.8	5.8	5.5	5.5	5.9	5.6	5.9	5.8	5.9	5.8	5.7	5.7	5.8	5.5
Black, total	19.5	15.9	15.3	15.1	15.0	14.9	16.3	15.2	15.3	15.6	14.0	15.0	14.0	15.3	15.0
Both sexes, 16 to 19 years	48.5	42.7	40.2	41.2	42.1	42.1	43.1	41.9	39.0	40.4	38.1	41.3	34.4	38.3	39.7
Men, 16 to 19 years	48.8	42.7	43.8	42.0	43.8	45.3	41.1	40.9	38.5	38.4	40.7	43.3	34.1	41.0	41.1
Women, 16 to 19 years	48.2	42.6	36.2	40.2	40.1	38.5	45.3	43.1	39.5	42.5	35.2	39.0	34.9	35.0	37.9
Men, 20 years and over	18.1	14.3	13.4	12.8	13.3	12.7	14.4	13.3	13.6	13.6	12.2	12.6	11.8	13.4	14.0
Women, 20 years and over	16.5	13.5	13.4	13.5	12.7	12.8	13.9	12.9	13.2	13.7	12.3	13.2	13.2	13.8	12.1
Hispanic origin, total	13.7	10.7	10.3	10.4	10.6	9.7	9.7	10.2	10.3	10.7	10.6	11.2	10.3	10.4	11.3
Married men, spouse present	6.5	4.6	4.5	4.4	4.4	4.6	4.4	4.2	4.3	4.0	4.6	4.4	4.1	4.3	4.1
Married women, spouse present	7.0	5.7	5.7	5.4	5.4	5.7	5.4	5.9	5.9	5.8	5.9	5.7	5.4	5.7	5.3
Women who maintain families	12.2	10.3	10.4	10.8	9.6	10.0	11.0	10.2	10.8	10.9	9.8	10.2	11.1	11.6	10.5
Full-time workers	9.5	7.2	7.1	6.9	6.9	7.1	7.1	6.9	6.9	6.8	6.8	7.0	6.7	6.8	6.7
Part-time workers	10.4	9.3	9.1	8.6	8.8	9.3	8.7	9.6	9.7	10.3	9.9	9.5	9.0	9.2	9.7
Unemployed 15 weeks and over	3.8	2.4	2.2	2.1	2.1	2.0	2.1	2.1	2.1	1.9	2.0	2.0	2.0	2.0	2.0
Labor force time lost <sup>1</sup>	10.9	8.6	8.4	8.2	8.3	8.2	8.2	8.2	8.2	8.3	8.2	8.3	8.1	8.1	7.9
<b>INDUSTRY</b>															
Nonagricultural private wage and salary workers	9.9	7.4	7.2	7.2	7.2	7.3	7.3	7.2	7.3	7.2	7.4	7.3	7.1	7.3	7.1
Mining	17.0	10.0	10.5	11.7	10.7	10.1	10.9	11.0	10.9	7.3	11.1	9.8	8.3	9.3	7.4
Construction	18.4	14.3	13.7	14.2	13.7	13.4	13.4	13.3	13.3	10.2	13.7	13.4	13.1	13.9	13.8
Manufacturing	11.2	7.5	7.3	7.2	7.2	7.6	7.5	7.7	8.0	7.8	7.7	8.0	7.8	7.8	7.5
Durable goods	12.1	7.2	6.9	7.0	7.1	7.2	7.1	7.4	7.8	7.8	8.0	8.0	7.9	7.8	7.2
Nondurable goods	10.0	7.8	7.8	7.4	7.2	8.1	8.2	8.1	8.3	7.7	7.4	8.0	7.7	7.9	8.0
Transportation and public utilities	7.4	5.5	5.3	5.2	5.0	4.9	5.5	4.6	5.4	5.2	5.3	5.8	4.3	5.4	5.1
Wholesale and retail trade	10.0	8.0	7.9	7.6	7.5	7.7	7.7	7.5	7.3	7.9	7.7	7.5	7.7	7.9	7.9
Finance and service industries	7.2	5.9	5.7	5.8	5.9	5.9	5.7	5.7	5.7	6.2	5.8	5.6	5.5	5.5	5.3
Government workers	5.3	4.5	4.4	4.3	4.4	4.1	3.9	3.9	3.7	3.9	3.8	4.1	4.0	3.8	3.9
Agricultural wage and salary workers	16.0	13.5	13.7	11.2	12.2	15.5	13.6	12.2	13.1	11.5	12.1	14.3	14.3	14.0	13.2

<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.

**6. Unemployment rates by sex and age, seasonally adjusted**

[Civilian workers]

Sex and age	Annual average		1984			1985									
	1983	1984	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Total, 16 years and over	9.6	7.5	7.3	7.1	7.2	7.4	7.3	7.3	7.3	7.3	7.3	7.3	7.0	7.1	7.1
16 to 24 years	17.2	13.9	13.5	13.2	13.5	13.6	13.7	13.5	13.3	14.2	13.5	14.0	12.9	13.3	14.0
16 to 19 years	22.4	18.9	18.7	17.8	18.8	18.9	18.4	18.2	17.7	18.9	18.3	19.5	17.3	17.8	20.1
16 to 17 years	24.5	21.2	20.2	20.0	21.0	21.2	20.0	20.9	20.7	21.1	21.2	22.0	18.6	19.8	23.3
18 to 19 years	21.1	17.4	17.8	16.8	17.7	17.4	17.4	16.5	15.8	17.3	16.2	17.6	16.4	16.5	17.9
20 to 24 years	14.5	11.5	11.0	10.9	10.9	10.9	11.2	11.1	11.0	11.8	11.2	11.2	10.7	11.0	10.9
25 years and over	7.5	5.8	5.7	5.5	5.5	5.8	5.6	5.6	5.7	5.5	5.8	5.6	5.5	5.6	5.4
25 to 54 years	8.0	6.1	5.9	5.8	5.8	6.1	5.9	5.9	6.1	5.8	6.0	5.9	5.8	5.9	5.7
55 years and over	5.3	4.5	4.7	4.4	4.1	4.2	3.9	4.0	4.0	4.3	4.2	4.5	4.1	4.2	3.9
Men, 16 years and over	9.9	7.4	7.1	7.0	7.1	7.2	7.1	7.0	7.1	6.9	7.3	7.2	6.8	6.9	7.1
16 to 24 years	18.4	14.4	13.8	13.7	14.1	13.8	14.4	13.9	13.6	14.8	14.3	14.8	13.6	13.6	14.7
16 to 19 years	23.3	19.6	19.8	18.9	19.4	19.1	19.5	18.1	18.2	19.4	19.2	20.9	19.4	19.2	21.9
16 to 17 years	25.2	21.9	21.3	20.3	19.8	21.2	20.7	22.2	21.5	22.2	24.0	22.8	22.0	20.0	24.4
18 to 19 years	22.2	18.3	18.9	18.3	19.3	18.0	18.6	15.7	16.2	17.4	16.1	19.2	17.4	18.6	20.3
20 to 24 years	15.9	11.9	10.9	11.2	11.5	11.2	11.8	11.7	11.3	12.5	11.9	11.7	10.7	10.8	11.0
25 years and over	7.8	5.7	5.4	5.4	5.4	5.5	5.4	5.3	5.5	5.0	5.6	5.4	5.2	5.3	5.3
25 to 54 years	8.2	5.9	5.6	5.6	5.6	5.8	5.6	5.6	5.8	5.2	5.8	5.6	5.5	5.6	5.5
55 years and over	5.6	4.6	4.7	4.7	4.4	4.3	4.0	3.8	3.9	4.1	4.5	4.6	3.8	4.1	4.1
Women, 16 years and over	9.2	7.6	7.7	7.3	7.2	7.7	7.5	7.6	7.5	7.7	7.4	7.5	7.3	7.5	7.2
16 to 24 years	15.8	13.3	13.2	12.6	12.8	13.3	12.9	13.2	12.9	13.5	12.7	13.1	12.1	12.9	13.2
16 to 19 years	21.3	18.0	17.4	16.6	18.1	18.6	17.3	18.2	17.1	18.4	17.4	18.0	14.9	16.4	18.1
16 to 17 years	23.7	20.4	19.0	19.7	22.3	21.2	19.4	19.5	19.8	19.9	18.0	21.2	14.8	19.5	22.1
18 to 19 years	19.9	16.6	16.5	15.1	16.0	16.7	16.2	17.4	15.5	17.3	16.3	15.8	15.2	14.3	15.4
20 to 24 years	12.9	10.9	11.1	10.7	10.2	10.5	10.6	10.5	10.7	10.9	10.4	10.6	10.7	11.2	10.8
25 years and over	7.2	6.0	6.0	5.7	5.6	6.1	5.9	6.0	6.0	6.1	6.1	5.9	5.9	6.0	5.6
25 to 54 years	7.7	6.3	6.2	6.1	6.0	6.4	6.3	6.4	6.3	6.5	6.3	6.2	6.2	6.3	5.9
55 years and over	4.7	4.2	4.8	3.9	3.7	4.2	3.8	4.2	4.2	4.6	3.9	4.4	4.7	4.3	3.6

**7. Unemployed persons by reason for unemployment, seasonally adjusted**

[Numbers in thousands]

Reason for unemployment	Annual average		1984			1985									
	1983	1984	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Job losers	6,258	4,421	4,261	4,141	4,176	4,313	4,251	4,158	4,228	3,935	4,128	4,333	4,160	4,142	4,021
On layoff	1,780	1,171	1,151	1,068	1,070	1,229	1,240	1,163	1,208	1,059	1,124	1,130	1,099	1,175	1,165
Other job losers	4,478	3,250	3,110	3,073	3,106	3,084	3,011	2,995	3,019	2,876	3,004	3,203	3,061	2,968	2,856
Job leavers	830	823	829	869	858	884	865	848	838	868	1,001	902	865	839	921
Reentrants	2,412	2,184	2,150	2,161	2,218	2,244	2,233	2,341	2,312	2,428	2,219	2,143	2,162	2,369	2,232
New entrants	1,216	1,110	1,060	1,024	1,011	1,049	1,035	1,090	1,072	1,159	1,017	1,097	920	909	1,047
<b>PERCENT DISTRIBUTION</b>															
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	58.4	51.8	51.3	50.5	50.5	50.8	50.7	49.3	50.0	46.9	49.3	51.1	51.3	50.2	48.9
On layoff	16.6	13.7	13.9	13.0	12.9	14.5	14.8	13.8	14.3	12.6	13.4	13.3	13.6	14.2	14.2
Other job losers	41.8	38.1	37.5	37.5	37.6	36.3	35.9	35.5	35.7	34.3	35.9	37.8	37.8	35.9	34.7
Job leavers	7.7	9.6	10.0	10.6	10.4	10.4	10.3	10.0	9.9	10.3	12.0	10.6	10.7	10.2	11.2
Reentrants	22.5	25.6	25.9	26.4	26.8	26.4	26.6	27.7	27.4	28.9	26.5	25.3	26.7	28.7	27.1
New entrants	11.3	13.0	12.8	12.5	12.2	12.4	12.3	12.9	12.7	13.8	12.2	12.9	11.3	11.0	12.7
<b>PERCENT OF CIVILIAN LABOR FORCE</b>															
Job losers	5.6	3.9	3.7	3.6	3.6	3.8	3.7	3.6	3.7	3.4	3.6	3.8	3.6	3.6	3.5
Job leavers	.7	.7	.7	.8	.7	.8	.8	.7	.7	.8	.9	.8	.8	.7	.8
Reentrants	2.2	1.9	1.9	1.9	1.9	2.0	1.9	2.0	2.0	2.1	1.9	1.9	1.9	2.0	1.9
New entrants	1.1	1.0	.9	.9	.9	.9	.9	.9	.9	1.0	.9	1.0	.8	.8	.9

**8. Duration of unemployment, seasonally adjusted**

[Numbers in thousands]

Weeks of unemployment	Annual average		1984			1985									
	1983	1984	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Less than 5 weeks	3,570	3,350	3,395	3,352	3,282	3,662	3,524	3,590	3,558	3,659	3,458	3,578	3,372	3,502	3,420
5 to 14 weeks	2,937	2,451	2,406	2,324	2,516	2,552	2,469	2,478	2,525	2,635	2,547	2,508	2,497	2,503	2,551
15 weeks and over	4,210	2,737	2,527	2,428	2,374	2,243	2,416	2,400	2,377	2,247	2,317	2,348	2,264	2,328	2,284
15 to 26 weeks	1,652	1,104	1,092	990	972	941	1,076	1,065	1,022	1,040	1,011	1,094	1,050	1,034	1,075
27 weeks and over	2,559	1,634	1,435	1,438	1,402	1,302	1,340	1,335	1,354	1,207	1,306	1,254	1,214	1,294	1,209
Mean duration in weeks	20.0	18.2	16.7	17.4	17.3	15.3	15.9	15.9	16.1	14.9	15.4	15.4	15.6	15.5	15.3
Median duration in weeks	10.1	7.9	7.3	7.3	7.4	6.7	7.2	7.1	6.7	6.2	6.6	7.2	7.5	6.9	7.1

## EMPLOYMENT, HOURS, AND EARNINGS DATA FROM ESTABLISHMENT SURVEYS

EMPLOYMENT, HOURS, AND EARNINGS DATA in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by over 200,000 establishments representing all industries except agriculture. In most industries, the sampling probabilities are based on the size of the establishment; most large establishments are therefore in the sample. (An establishment is not necessarily a firm; it may be a branch plant, for example, or warehouse.) Self-employed persons and others not on a regular civilian payroll are outside the scope of the survey because they are excluded from establishment records. This largely accounts for the difference in employment figures between the household and establishment surveys.

### Definitions

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

**Production workers** in manufacturing include blue-collar worker supervisors and all nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 12-16 include production workers in manufacturing and mining; construction workers in construction; and nonsupervisory workers in transportation and public utilities; in wholesale and retail trade; in finance, insurance, and real estate; and in services industries. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

**Earnings** are the payments production or nonsupervisory workers receive during the survey period, including premium pay for overtime or late-shift work but excluding irregular bonuses and other special payments. **Real earnings** are earnings adjusted to reflect the effects of changes in consumer prices. The deflator for this series is derived from the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W). The **Hourly Earnings Index** is calculated from average hourly earnings data adjusted to exclude the effects of two types of changes that are unrelated

to underlying wage-rate developments: fluctuations in overtime premiums in manufacturing (the only sector for which overtime data are available) and the effects of changes and seasonal factors in the proportion of workers in high-wage and low-wage industries.

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

**The Diffusion Index**, introduced in table 17 of the May 1983 issue, 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 3-, 6-, and 9-month spans are seasonally adjusted, while that for the 12-month span is unadjusted. The diffusion index is useful for measuring the dispersion of economic gains or losses and is also an economic indicator.

### Notes on the data

Establishment data collected by the Bureau of Labor Statistics are periodically adjusted to comprehensive counts of employment (called "benchmarks"). The latest complete adjustment was made with the release of May 1985 data, published in the July 1985 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 1983; seasonally adjusted data have been revised back to January 1980. Unadjusted data from April 1984 forward, and seasonally adjusted data from January 1981 forward are subject to revision in future benchmarks. Earlier comparable unadjusted and seasonally adjusted data are published in *Employment, Hours, and Earnings, United States, 1909-84*, BLS Bulletin 1312-12.

A comprehensive discussion of the differences between household and establishment data on employment appears in Gloria P. Green, "Comparing employment estimates from household and payroll surveys," *Monthly Labor Review*, December 1969, pp. 9-20. See also BLS *Handbook of Methods*, Bulletin 2134-1 (Bureau of Labor Statistics, 1982).

**9. Employment, by Industry, selected years, 1950-84**

[Nonagricultural payroll data, in thousands]

Year	Total	Private sector	Goods-producing				Service-producing							Government			
			Total	Mining	Construction	Manufacturing	Total	Transportation and public utilities	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services	Total	Federal	State	Local	
1950	45,197	39,170	18,506	901	2,364	15,241	26,691	4,034	2,635	6,751	1,888	5,357	6,026	1,928	(1)	(1)	
1955	50,641	43,727	20,513	792	2,839	16,882	30,128	4,141	2,926	7,610	2,298	6,240	6,914	2,187	1,168	3,558	
1960 <sup>2</sup>	54,189	45,836	20,434	712	2,926	16,796	33,755	4,004	3,143	8,248	2,629	7,378	8,353	2,270	1,536	4,547	
1964	58,283	48,686	21,005	634	3,097	17,274	37,278	3,951	3,337	8,823	2,911	8,660	9,596	2,348	1,856	5,392	
1965	60,765	50,689	21,926	632	3,232	18,062	38,839	4,036	3,466	9,250	2,977	9,036	10,074	2,378	1,996	5,700	
1966	63,901	53,116	23,158	627	3,317	19,214	40,743	4,158	3,597	9,648	3,058	9,498	10,784	2,564	2,141	6,080	
1967	65,803	54,413	23,308	613	3,248	19,447	42,495	4,268	3,689	9,917	3,185	10,045	11,391	2,719	2,302	6,371	
1968	67,897	56,058	23,737	606	3,350	19,781	44,160	4,318	3,779	10,320	3,337	10,567	11,839	2,737	2,442	6,660	
1969	70,384	58,189	24,361	619	3,575	20,167	46,023	4,442	3,907	10,798	3,512	11,169	12,195	2,758	2,533	6,904	
1970	70,880	58,325	23,578	623	3,588	19,367	47,302	4,515	3,993	11,047	3,645	11,548	12,554	2,731	2,664	7,158	
1971	71,214	58,331	22,935	609	3,704	18,623	48,278	4,476	4,001	11,351	3,772	11,797	12,881	2,696	2,747	7,437	
1972	73,675	60,341	23,668	628	3,889	19,151	50,007	4,541	4,113	11,836	3,908	12,276	13,334	2,684	2,859	7,790	
1973	76,790	63,058	24,893	642	4,097	20,154	51,897	4,656	4,277	12,329	4,046	12,857	13,732	2,663	2,923	8,146	
1974	78,265	64,095	24,794	697	4,020	20,077	53,471	4,725	4,433	12,554	4,148	13,441	14,170	2,724	3,039	8,407	
1975	76,945	62,259	22,600	752	3,525	18,323	54,345	4,542	4,415	12,645	4,165	13,892	14,686	2,748	3,179	8,758	
1976	79,382	64,511	23,352	779	3,576	18,997	56,030	4,582	4,546	13,209	4,271	14,551	14,871	2,733	3,273	8,865	
1977	82,471	67,344	24,346	813	3,851	19,662	58,125	4,713	4,708	13,808	4,467	15,303	15,127	2,727	3,377	9,023	
1978	86,697	71,026	25,585	851	4,229	20,585	61,113	4,923	4,969	14,573	4,724	16,252	15,672	2,753	3,474	9,446	
1979	89,823	73,876	26,461	958	4,463	21,040	63,363	5,136	5,204	14,989	4,975	17,112	15,947	2,773	3,541	9,633	
1980	90,406	74,166	25,658	1,027	4,346	20,285	64,748	5,146	5,275	15,035	5,160	17,890	16,241	2,866	3,610	9,765	
1981	91,156	75,126	25,497	1,139	4,188	20,170	65,659	5,165	5,358	15,189	5,298	18,619	16,031	2,772	3,640	9,619	
1982	89,566	73,729	23,813	1,128	3,905	18,781	65,753	5,082	5,278	15,179	5,341	19,036	15,837	2,739	3,640	9,458	
1983	90,196	74,330	23,334	952	3,948	18,434	66,862	4,954	5,268	15,613	5,468	19,694	15,869	2,774	3,662	9,434	
1984	94,461	78,477	24,730	974	4,345	19,412	69,731	5,171	5,550	16,584	5,682	20,761	15,984	2,807	3,712	9,465	

<sup>1</sup>Not available.

<sup>2</sup>Data include Alaska and Hawaii beginning in 1959.

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

**10. Employment, by State**

[Nonagricultural payroll data, in thousands]

State	September 1984	August 1985	September 1985 <sup>P</sup>	State	September 1984	August 1985	September 1985 <sup>P</sup>
Alabama	1,390.8	1,396.4	1,398.6	Montana	286.5	279.9	280.8
Alaska	239.8	245.3	242.5	Nebraska	637.7	641.8	648.4
Arizona	1,195.2	1,238.0	1,262.9	Nevada	437.4	448.6	451.7
Arkansas	800.8	793.8	808.5	New Hampshire	455.8	485.2	484.7
California	10,672.8	10,817.8	10,935.1	New Jersey	3,384.5	3,503.8	3,481.7
Colorado	1,395.7	1,412.5	1,421.0	New Mexico	514.3	512.6	520.4
Connecticut	1,548.2	1,561.5	1,576.4	New York	7,609.0	7,741.2	7,743.5
Delaware	287.3	292.3	294.5	North Carolina	2,504.6	2,595.4	2,645.5
District of Columbia	609.0	641.3	621.9	North Dakota	257.0	252.2	253.6
Florida	4,227.3	4,395.1	4,411.3	Ohio	4,308.5	4,365.2	4,416.7
Georgia	2,507.8	2,611.6	2,617.1	Oklahoma	1,189.6	1,175.4	1,185.8
Hawaii	403.8	421.5	415.2	Oregon	1,024.9	1,028.9	1,038.5
Idaho	331.8	335.3	342.2	Pennsylvania	4,694.3	4,737.4	4,756.0
Illinois	4,660.6	4,701.8	4,707.1	Rhode Island	418.2	417.8	420.5
Indiana	2,181.7	2,216.6	2,249.4	South Carolina	1,293.7	1,330.2	1,347.0
Iowa	1,072.2	1,052.1	1,063.6	South Dakota	247.0	247.2	245.1
Kansas	972.5	972.8	989.5	Tennessee	1,833.5	1,876.8	1,891.3
Kentucky	1,221.9	1,244.6	1,251.2	Texas	6,475.4	6,581.5	6,594.9
Louisiana	1,609.3	1,578.5	1,593.0	Utah	613.8	624.2	632.8
Maine	457.3	469.9	464.5	Vermont	219.3	222.8	225.9
Maryland	1,812.8	1,893.5	1,896.2	Virginia	2,362.2	2,415.1	2,443.7
Massachusetts	2,892.0	2,991.8	3,009.9	Washington	1,671.8	1,697.9	1,713.4
Michigan	3,390.9	3,442.5	3,483.0	West Virginia	603.8	587.3	587.8
Minnesota	1,868.1	1,891.2	1,907.0	Wisconsin	1,988.0	1,997.4	2,014.3
Mississippi	836.4	834.5	852.2	Wyoming	202.8	205.5	204.0
Missouri	2,040.7	2,031.3	2,049.8	Virgin Islands	35.0	36.1	34.7

# 11. Employment, by industry, seasonally adjusted

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual average		1984			1985									
	1983	1984	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept. <sup>p</sup>	Oct. <sup>p</sup>
<b>TOTAL</b>	90,196	94,461	95,573	95,882	96,092	96,419	96,591	96,910	97,120	97,421	97,473	97,707	97,977	98,115	98,529
<b>PRIVATE SECTOR</b>	74,330	78,477	79,460	79,764	80,010	80,319	80,480	80,767	80,962	81,208	81,260	81,366	81,634	81,735	82,096
<b>GOODS-PRODUCING</b>	23,334	24,730	24,918	24,955	25,045	25,112	25,062	25,056	25,090	25,066	25,010	24,980	25,015	24,955	25,045
<b>Mining</b>	952	974	979	978	973	974	976	977	982	982	974	969	965	960	958
Oil and gas extraction	598	613	623	626	624	621	620	618	623	624	619	619	615	614	610
<b>Construction</b>	3,948	4,345	4,403	4,424	4,469	4,534	4,525	4,553	4,641	4,658	4,638	4,660	4,688	4,723	4,755
General building contractors	1,020	1,158	1,171	1,179	1,190	1,219	1,214	1,223	1,233	1,234	1,223	1,228	1,242	1,252	1,269
<b>Manufacturing</b>	18,434	19,412	19,536	19,553	19,603	19,604	19,561	19,526	19,467	19,426	19,398	19,351	19,362	19,272	19,332
Production workers	12,530	13,310	13,380	13,376	13,409	13,399	13,347	13,309	13,249	13,203	13,169	13,137	13,145	13,077	13,141
<b>Durable goods</b>	10,732	11,522	11,652	11,666	11,701	11,702	11,675	11,651	11,608	11,586	11,560	11,509	11,519	11,444	11,482
Production workers	7,117	7,749	7,835	7,832	7,855	7,843	7,806	7,776	7,730	7,704	7,671	7,630	7,638	7,578	7,618
Lumber and wood products	657	707	708	709	711	709	704	701	694	697	694	697	700	702	712
Furniture and fixtures	448	467	491	495	497	499	498	499	497	493	494	494	499	495	499
Stone, clay, and glass products	570	595	597	598	601	602	600	601	600	599	598	599	601	598	600
Primary metal industries	832	858	851	848	844	844	840	832	823	819	815	806	798	794	801
Blast furnaces and basic steel products	341	334	320	318	316	315	313	311	306	305	304	302	289	291	293
Fabricated metal products	1,370	1,464	1,483	1,486	1,489	1,486	1,483	1,480	1,479	1,477	1,472	1,467	1,467	1,462	1,467
Machinery, except electrical	2,033	2,197	2,233	2,232	2,232	2,228	2,224	2,220	2,207	2,203	2,191	2,175	2,167	2,141	2,141
Electrical and electronic equipment	2,013	2,208	2,247	2,250	2,253	2,252	2,248	2,243	2,223	2,216	2,205	2,190	2,194	2,175	2,179
Transportation equipment	1,747	1,906	1,935	1,940	1,965	1,974	1,972	1,969	1,982	1,981	1,990	1,985	1,995	1,982	1,992
Motor vehicles and equipment	754	860	869	873	888	891	876	867	876	873	875	868	868	858	865
Instruments and related products	692	714	720	722	723	723	725	727	726	723	725	724	725	722	718
Miscellaneous manufacturing	371	384	387	386	386	385	381	379	377	378	376	372	373	373	373
<b>Nondurable goods</b>	7,702	7,890	7,884	7,887	7,902	7,902	7,886	7,875	7,859	7,840	7,838	7,842	7,843	7,828	7,850
Production workers	5,413	5,561	5,545	5,544	5,554	5,556	5,541	5,533	5,519	5,499	5,498	5,507	5,507	5,499	5,523
Food and kindred products	1,615	1,619	1,617	1,620	1,630	1,633	1,633	1,638	1,630	1,634	1,644	1,630	1,638	1,634	1,641
Tobacco manufactures	68	65	66	65	66	67	66	66	66	66	66	65	64	65	65
Textile mill products	741	746	730	726	722	720	712	706	707	701	699	696	697	695	696
Apparel and other textile products	1,163	1,197	1,181	1,180	1,184	1,182	1,175	1,167	1,164	1,153	1,142	1,160	1,152	1,155	1,156
Paper and allied products	661	681	683	682	683	683	682	682	681	682	684	684	683	681	683
Printing and publishing	1,299	1,372	1,392	1,397	1,397	1,403	1,406	1,407	1,411	1,414	1,419	1,426	1,429	1,425	1,427
Chemicals and allied products	1,043	1,048	1,051	1,052	1,054	1,052	1,052	1,052	1,049	1,044	1,042	1,040	1,038	1,039	1,040
Petroleum and coal products	196	189	188	187	186	185	184	183	182	181	180	178	176	170	170
Rubber and miscellaneous plastics products	711	782	792	796	799	798	799	798	795	791	789	787	792	790	798
Leather and leather products	205	192	184	182	181	179	177	176	174	174	173	176	174	174	174
<b>SERVICE-PRODUCING</b>	66,862	69,731	70,655	70,927	71,047	71,307	71,529	71,854	72,030	72,355	72,463	72,727	72,962	73,160	73,484
<b>Transportation and public utilities</b>	4,954	5,171	5,223	5,229	5,246	5,259	5,272	5,269	5,278	5,301	5,295	5,302	5,282	5,319	5,315
Transportation	2,745	2,929	2,983	2,993	3,009	3,015	3,029	3,028	3,037	3,057	3,052	3,060	3,038	3,079	3,074
Communication and public utilities	2,209	2,242	2,240	2,236	2,237	2,244	2,243	2,241	2,241	2,244	2,243	2,242	2,244	2,240	2,241
<b>Wholesale trade</b>	5,268	5,550	5,636	5,647	5,665	5,686	5,697	5,714	5,733	5,748	5,768	5,773	5,791	5,802	5,830
Durable goods	3,070	3,272	3,321	3,334	3,347	3,358	3,367	3,377	3,388	3,402	3,414	3,426	3,434	3,440	3,452
Nondurable goods	2,197	2,278	2,315	2,313	2,318	2,328	2,330	2,337	2,345	2,346	2,354	2,347	2,357	2,362	2,378
<b>Retail trade</b>	15,613	16,584	16,859	16,994	17,026	17,090	17,160	17,249	17,280	17,392	17,425	17,453	17,514	17,537	17,618
General merchandise stores	2,165	2,278	2,311	2,357	2,323	2,341	2,343	2,349	2,348	2,371	2,361	2,344	2,354	2,362	2,374
Food stores	2,556	2,655	2,706	2,728	2,745	2,753	2,773	2,790	2,794	2,823	2,831	2,842	2,849	2,849	2,868
Automotive dealers and service stations	1,674	1,802	1,839	1,848	1,851	1,855	1,865	1,873	1,884	1,890	1,895	1,895	1,902	1,906	1,918
Eating and drinking places	5,042	5,403	5,493	5,512	5,535	5,559	5,588	5,615	5,642	5,660	5,692	5,728	5,725	5,739	5,758
<b>Finance, insurance, and real estate</b>	5,468	5,682	5,737	5,755	5,776	5,790	5,809	5,835	5,858	5,888	5,906	5,932	5,959	5,985	6,002
Finance	2,741	2,855	2,883	2,891	2,902	2,910	2,919	2,933	2,941	2,956	2,968	2,984	2,998	3,011	3,019
Insurance	1,720	1,753	1,770	1,774	1,780	1,783	1,789	1,792	1,799	1,808	1,814	1,817	1,827	1,830	1,834
Real estate	1,007	1,074	1,084	1,090	1,094	1,097	1,101	1,110	1,118	1,124	1,124	1,131	1,134	1,144	1,149
<b>Services</b>	19,694	20,761	21,087	21,184	21,252	21,382	21,480	21,644	21,723	21,813	21,856	21,926	22,073	22,137	22,286
Business services	3,562	4,076	4,205	4,234	4,259	4,295	4,324	4,377	4,402	4,424	4,441	4,446	4,489	4,503	4,538
Health services	5,988	6,104	6,125	6,139	6,154	6,169	6,186	6,204	6,218	6,240	6,243	6,260	6,291	6,305	6,338
<b>Government</b>	15,869	15,984	16,113	16,118	16,082	16,100	16,111	16,143	16,158	16,213	16,213	16,341	16,343	16,380	16,433
Federal	2,774	2,807	2,823	2,831	2,836	2,836	2,834	2,850	2,859	2,873	2,872	2,878	2,886	2,894	2,899
State	3,662	3,712	3,727	3,732	3,722	3,730	3,733	3,744	3,749	3,759	3,765	3,788	3,789	3,799	3,812
Local	9,434	9,465	9,563	9,555	9,524	9,534	9,544	9,549	9,550	9,581	9,576	9,675	9,668	9,687	9,722

p = preliminary.

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

**12. Average hours and earnings, by industry, 1968-84**

[Production or nonsupervisory workers on nonagricultural payrolls]

Year	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings
	Private sector			Mining			Construction		
1968	37.8	\$2.85	\$107.73	42.6	\$3.35	\$142.71	37.3	\$4.41	\$164.49
1969	37.7	3.04	114.61	43.0	3.60	154.80	37.9	4.79	181.54
1970	37.1	3.23	119.83	42.7	3.85	164.40	37.3	5.24	195.45
1971	36.9	3.45	127.31	42.4	4.06	172.14	37.2	5.69	211.67
1972	37.0	3.70	136.90	42.6	4.44	189.14	36.5	6.06	221.19
1973	36.9	3.94	145.39	42.4	4.75	201.40	36.8	6.41	235.89
1974	36.5	4.24	154.76	41.9	5.23	219.14	36.6	6.81	249.25
1975	36.1	4.53	163.53	41.9	5.95	249.31	36.4	7.31	266.08
1976	36.1	4.86	175.45	42.4	6.46	273.90	36.8	7.71	283.73
1977	36.0	5.25	189.00	43.4	6.94	301.20	36.5	8.10	295.65
1978	35.8	5.69	203.70	43.4	7.67	332.88	36.8	8.66	318.69
1979	35.7	6.16	219.91	43.0	8.49	365.07	37.0	9.27	342.99
1980	35.3	6.66	235.10	43.3	9.17	397.06	37.0	9.94	367.78
1981	35.2	7.25	255.20	43.7	10.04	438.75	36.9	10.82	399.26
1982	34.8	7.68	267.26	42.7	10.77	459.88	36.7	11.63	426.82
1983	35.0	8.02	280.70	42.5	11.28	479.40	37.1	11.94	442.97
1984	35.3	8.33	294.05	43.3	11.63	503.58	37.7	12.12	456.92
	Manufacturing			Transportation and public utilities			Wholesale trade		
1968	40.7	\$3.01	\$122.51	40.6	\$3.42	\$138.85	40.1	\$3.05	\$122.31
1969	40.6	3.19	129.51	40.7	3.63	147.74	40.2	3.23	129.85
1970	39.8	3.35	133.33	40.5	3.85	155.93	39.9	3.44	137.26
1971	39.9	3.57	142.44	40.1	4.21	168.82	39.5	3.65	129.85
1972	40.5	3.82	154.71	40.4	4.65	187.86	39.4	3.85	144.18
1973	40.7	4.09	166.46	40.5	5.02	203.31	39.3	4.08	151.69
1974	40.0	4.42	176.80	40.2	5.41	217.48	38.8	4.39	160.34
1975	39.5	4.83	190.79	39.7	5.88	233.44	38.7	4.73	183.05
1976	40.1	5.22	209.32	39.8	6.45	256.71	38.7	5.03	194.66
1977	40.3	5.68	228.90	39.9	6.99	278.90	38.8	5.39	209.13
1978	40.4	6.17	249.27	40.0	7.57	302.80	38.8	5.88	228.14
1979	40.2	6.70	269.34	39.9	8.16	325.58	38.8	6.39	247.93
1980	39.7	7.27	288.62	39.6	8.87	351.25	38.5	6.96	267.96
1981	39.8	7.99	318.00	39.4	9.70	382.18	38.5	7.56	291.06
1982	38.9	8.49	330.26	39.0	10.32	402.48	38.3	8.09	309.85
1983	40.1	8.83	354.08	39.0	10.79	420.81	38.5	8.55	329.18
1984	40.7	9.18	373.63	39.4	11.11	437.73	38.6	8.96	345.86
	Retail trade			Finance, insurance, and real estate			Services		
1968	34.7	\$2.16	\$74.95	37.0	\$2.75	\$101.75	34.7	\$2.42	\$83.97
1969	34.2	2.30	78.66	37.1	2.93	108.70	34.7	2.61	90.57
1970	33.8	2.44	82.47	36.7	3.07	112.67	34.4	2.81	96.66
1971	33.7	2.60	87.62	36.6	3.22	117.85	33.9	3.04	103.06
1972	33.4	2.75	91.85	36.6	3.36	122.98	33.9	3.27	110.85
1973	33.1	2.91	96.32	36.6	3.53	129.20	33.8	3.47	117.29
1974	32.7	3.14	102.68	36.5	3.77	137.61	33.6	3.75	126.00
1975	32.4	3.36	108.86	36.5	4.06	148.19	33.5	4.02	134.67
1976	32.1	3.57	114.60	36.4	4.27	155.43	33.3	4.31	143.52
1977	31.6	3.85	121.66	36.4	4.54	165.26	33.0	4.65	153.45
1978	31.0	4.20	130.20	36.4	4.89	178.00	32.8	4.99	163.67
1979	30.6	4.53	138.62	36.2	5.27	190.77	32.7	5.36	175.27
1980	30.2	4.88	147.38	36.2	5.79	209.60	32.6	5.85	190.71
1981	30.1	5.25	158.03	36.3	6.31	229.05	32.6	6.41	208.97
1982	29.9	5.48	163.85	36.2	6.78	245.44	32.6	6.92	225.59
1983	29.8	5.74	171.05	36.2	7.29	263.90	32.7	7.31	239.04
1984	30.0	5.88	176.40	36.5	7.62	278.13	32.8	7.64	250.59

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

### 13. Average weekly hours, by industry, seasonally adjusted

[Production or nonsupervisory workers on private nonagricultural payrolls]

Industry	Annual average		1984			1985									
	1983	1984	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.P	Oct.P
<b>PRIVATE SECTOR</b> .....	35.0	35.3	35.2	35.2	35.2	35.1	35.1	35.2	35.0	35.1	35.1	35.0	35.1	35.1	35.0
<b>CONSTRUCTION</b> .....	37.1	37.7	37.7	38.0	37.8	37.7	37.8	38.1	38.0	37.6	37.2	37.6	37.5	37.9	37.8
<b>MANUFACTURING</b> .....	40.1	40.7	40.5	40.5	40.6	40.6	40.1	40.4	40.2	40.4	40.4	40.3	40.6	40.7	40.7
Overtime hours .....	3.0	3.4	3.3	3.4	3.4	3.4	3.3	3.2	3.4	3.1	3.2	3.2	3.3	3.3	3.4
<b>Durable goods</b> .....	40.7	41.4	41.3	41.2	41.3	41.3	40.7	41.1	40.9	41.1	41.2	41.0	41.3	41.3	41.4
Overtime hours .....	3.0	3.6	3.5	3.6	3.6	3.6	3.5	3.5	3.6	3.2	3.3	3.3	3.4	3.5	3.5
Lumber and wood products .....	40.1	39.9	39.7	39.6	39.8	39.7	38.9	39.6	39.5	39.8	40.1	39.7	40.0	40.1	40.3
Furniture and fixtures .....	39.4	39.7	39.6	39.7	39.6	40.4	39.5	39.5	39.3	38.9	38.9	38.8	39.2	39.5	39.4
Stone, clay, and glass products .....	41.5	42.0	41.9	41.8	41.8	41.7	41.6	42.0	42.0	42.1	41.9	42.0	42.0	42.0	42.1
Primary metal industries .....	40.5	41.7	41.3	41.5	41.2	41.0	40.9	41.1	41.0	41.2	41.6	41.4	41.7	41.5	42.1
Blast furnaces and basic steel products .....	39.5	40.6	40.1	40.9	39.8	39.9	40.5	40.5	40.2	40.7	41.2	41.2	41.8	41.1	42.3
Fabricated metal products .....	40.6	41.4	41.3	41.1	41.4	41.4	40.9	41.1	41.1	41.1	41.3	41.3	41.4	41.5	41.4
Machinery, except electrical .....	40.5	41.9	41.9	41.8	41.7	41.7	41.1	41.6	41.2	41.4	41.6	41.3	41.6	41.6	41.5
Electrical and electronic equipment .....	40.5	41.0	40.9	40.9	41.0	40.8	40.2	40.7	40.2	40.4	40.6	40.3	40.7	40.5	40.7
Transportation equipment .....	42.1	42.7	42.6	42.4	42.8	43.1	41.9	42.5	42.3	42.6	42.3	42.5	42.9	43.0	42.9
Motor vehicles and equipment .....	43.3	43.8	43.5	43.5	44.0	44.3	42.4	43.2	43.3	43.5	42.7	43.3	43.8	43.7	44.1
Instruments and related products .....	40.4	41.3	41.3	41.4	41.8	41.2	40.7	41.0	40.7	40.9	41.1	40.7	40.7	40.9	40.7
Miscellaneous manufacturing .....	39.1	39.4	39.3	39.3	39.3	39.2	39.0	39.1	39.0	39.3	39.4	39.0	39.3	39.8	40.0
<b>Nondurable goods</b> .....	39.4	39.6	39.4	39.5	39.6	39.5	39.3	39.4	39.1	39.4	39.4	39.4	39.6	39.8	39.8
Overtime hours .....	3.0	3.1	3.0	3.1	3.0	3.0	2.9	2.9	3.0	2.9	3.0	3.0	3.1	3.1	3.2
Food and kindred products .....	39.5	39.8	39.7	39.7	40.1	39.8	39.7	39.8	39.6	40.1	39.6	40.0	39.9	40.2	40.1
Tobacco manufactures .....	37.4	38.9	38.7	39.0	38.8	38.3	39.2	38.9	35.4	37.0	36.6	34.6	36.8	36.7	38.0
Textile mill products .....	40.4	39.9	38.8	39.1	39.2	39.2	38.8	39.1	38.8	38.9	39.4	39.1	40.0	40.6	40.5
Apparel and other textile products .....	36.2	36.4	36.0	36.1	36.3	36.2	35.9	36.1	35.6	36.2	36.3	36.3	36.4	36.6	36.4
Paper and allied products .....	42.6	43.1	43.0	43.1	43.1	43.0	42.9	42.9	43.0	43.0	42.9	42.7	43.0	43.1	43.2
Printing and publishing .....	37.6	37.9	37.8	37.8	37.7	37.8	37.7	37.6	37.6	37.4	37.5	37.5	37.9	37.9	37.8
Chemicals and allied products .....	41.6	41.9	41.7	41.8	41.9	42.0	41.9	42.1	41.9	41.9	42.0	41.8	41.8	41.7	41.6
Petroleum and coal products .....	43.9	43.7	43.6	43.4	43.0	43.2	43.1	43.3	42.0	41.7	42.6	42.9	43.3	43.4	43.6
Leather and leather products .....	36.8	36.8	36.6	36.6	36.9	36.8	36.4	37.1	37.0	37.1	37.0	37.0	37.3	37.9	38.0
<b>TRANSPORTATION AND PUBLIC UTILITIES</b> .....	39.0	39.4	39.2	39.4	39.3	39.3	39.4	39.5	39.4	39.5	39.5	39.2	39.6	39.5	39.4
<b>WHOLESALE TRADE</b> .....	38.5	38.6	38.6	38.6	38.6	38.6	38.6	38.7	38.6	38.7	38.8	38.6	38.6	38.7	38.5
<b>RETAIL TRADE</b> .....	29.8	30.0	29.8	29.9	29.9	29.8	29.8	29.8	29.7	29.9	29.9	29.7	29.6	29.5	29.6
<b>SERVICES</b> .....	32.7	32.8	32.8	32.8	32.9	32.7	32.8	32.8	32.7	32.8	32.8	32.7	32.8	32.8	32.8

p = preliminary.

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

**14. Average hourly earnings, by industry**

[Production or nonsupervisory workers on private nonagricultural payrolls]

Industry	Annual average		1984			1985									
	1983	1984	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept. <sup>p</sup>	Oct. <sup>p</sup>
<b>PRIVATE SECTOR</b>	\$8.02	\$8.33	\$8.40	\$8.43	\$8.46	\$8.50	\$8.52	\$8.52	\$8.54	\$8.53	\$8.56	\$8.54	\$8.54	\$8.67	\$8.65
Seasonally adjusted	( <sup>1</sup> )	( <sup>1</sup> )	8.38	8.42	8.47	8.44	8.49	8.52	8.54	8.55	8.59	8.57	8.60	8.64	8.64
<b>MINING</b>	11.28	11.63	11.58	11.63	11.70	11.86	11.90	11.91	11.93	11.86	11.99	11.88	11.95	12.00	11.98
<b>CONSTRUCTION</b>	11.94	12.12	12.23	12.10	12.26	12.30	12.33	12.22	12.21	12.19	12.12	12.16	12.22	12.39	12.38
<b>MANUFACTURING</b>	8.83	9.18	9.24	9.31	9.40	9.43	9.43	9.45	9.48	9.48	9.50	9.53	9.48	9.54	9.54
<b>Durable goods</b>	9.39	9.74	9.78	9.85	9.96	9.99	9.99	10.01	10.03	10.04	10.08	10.10	10.05	10.14	10.14
Lumber and wood products	7.80	8.03	8.11	8.06	8.09	8.10	8.09	8.06	8.04	8.12	8.24	8.20	8.26	8.31	8.30
Furniture and fixtures	6.62	6.85	6.93	6.95	6.99	7.01	7.01	7.07	7.08	7.11	7.18	7.22	7.22	7.28	7.30
Stone, clay, and glass products	9.28	9.57	9.64	9.67	9.68	9.70	9.73	9.71	9.80	9.80	9.84	9.89	9.87	9.89	9.85
Primary metal industries	11.35	11.47	11.36	11.49	11.49	11.55	11.69	11.66	11.64	11.64	11.65	11.78	11.63	11.68	11.61
Blast furnaces and basic steel products	12.89	12.99	12.86	12.99	12.95	13.07	13.42	13.27	13.31	13.32	13.31	13.51	13.37	13.44	13.33
Fabricated metal products	9.12	9.38	9.40	9.44	9.58	9.59	9.59	9.62	9.64	9.63	9.65	9.66	9.61	9.71	9.67
<b>Nondurable goods</b>	8.08	8.37	8.44	8.52	8.55	8.59	8.60	8.61	8.67	8.64	8.65	8.72	8.67	8.70	8.69
Food and kindred products	8.19	8.38	8.31	8.43	8.45	8.48	8.51	8.53	8.59	8.58	8.55	8.54	8.47	8.50	8.48
Tobacco manufactures	10.38	11.27	10.60	11.93	11.17	11.39	11.80	12.00	12.16	12.65	12.83	12.91	12.44	11.58	11.18
Textile mill products	6.18	6.46	6.49	6.55	6.57	6.59	6.60	6.64	6.70	6.68	6.69	6.69	6.72	6.75	6.75
Apparel and other textile products	5.38	5.55	5.61	5.61	5.68	5.73	5.70	5.73	5.74	5.69	5.70	5.70	5.68	5.75	5.74
Paper and allied products	9.93	10.41	10.52	10.64	10.66	10.63	10.64	10.64	10.72	10.75	10.79	10.91	10.86	10.89	10.89
Printing and publishing	9.11	9.40	9.50	9.56	9.57	9.58	9.60	9.61	9.60	9.60	9.61	9.67	9.73	9.79	9.77
Chemicals and allied products	10.58	11.08	11.29	11.31	11.34	11.39	11.39	11.37	11.48	11.46	11.52	11.60	11.62	11.66	11.72
Petroleum and coal products	13.28	13.43	13.51	13.86	13.62	13.96	13.99	14.06	14.18	14.00	13.97	14.03	13.99	14.10	13.87
Rubber and miscellaneous plastics products	8.00	8.29	8.32	8.40	8.44	8.49	8.48	8.46	8.48	8.45	8.50	8.54	8.51	8.55	8.55
Leather and leather products	5.54	5.70	5.72	5.76	5.80	5.72	5.79	5.82	5.84	5.83	5.83	5.83	5.80	5.82	5.80
<b>TRANSPORTATION AND PUBLIC UTILITIES</b>	10.79	11.11	11.18	11.25	11.28	11.26	11.27	11.24	11.27	11.24	11.32	11.35	11.40	11.50	11.45
<b>WHOLESALE TRADE</b>	8.55	8.96	9.00	9.08	9.19	9.16	9.22	9.19	9.24	9.24	9.28	9.27	9.25	9.33	9.25
<b>RETAIL TRADE</b>	5.74	5.88	5.88	5.93	5.89	5.97	5.99	5.97	5.96	5.97	5.94	5.93	5.91	6.00	5.97
<b>FINANCE, INSURANCE, AND REAL ESTATE</b>	7.29	7.62	7.67	7.71	7.78	7.77	7.87	7.87	7.85	7.83	7.95	7.87	7.90	8.02	7.98
<b>SERVICES</b>	7.31	7.64	7.71	7.77	7.84	7.84	7.87	7.87	7.89	7.88	7.91	7.86	7.87	8.04	8.05

<sup>1</sup> Not available.

p = preliminary.

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

**15. The Hourly Earnings Index, by industry**

[Production or nonsupervisory workers on private nonagricultural payrolls; 1977 = 100]

Industry	Not seasonally adjusted					Seasonally adjusted						
	Oct. 1984	Aug. 1985	Sept. 1985 <sup>p</sup>	Oct. 1985 <sup>p</sup>	Percent change from: Oct. 1984 to Oct. 1985	Oct. 1984	June 1985	July 1985	Aug. 1985	Sept. 1985 <sup>p</sup>	Oct. 1985 <sup>p</sup>	Percent change from: Sept. 1985 to Oct. 1985
<b>PRIVATE SECTOR (in current dollars)</b>	161.7	165.1	166.9	166.8	3.2	161.6	165.7	165.4	165.7	166.6	166.7	0.1
Mining	174.8	178.8	179.5	179.4	2.6	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Construction	149.5	149.8	151.7	151.7	1.5	147.7	149.3	149.1	149.4	149.9	149.9	.1
Manufacturing	163.9	168.6	169.2	169.2	3.2	164.1	168.6	169.0	169.3	169.1	169.4	.2
Transportation and public utilities	163.3	165.9	168.0	167.6	2.6	162.8	166.6	166.0	166.1	167.0	167.1	.1
Wholesale trade	166.7	170.8	172.3	172.3	3.3	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Retail trade	153.7	155.3	157.3	156.8	2.0	154.0	155.9	155.8	155.8	157.2	157.1	-.1
Finance, insurance, and real estate	166.3	171.2	173.6	173.4	4.3	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Services	164.1	168.2	171.3	171.4	4.4	164.1	169.8	169.0	169.6	171.3	171.4	( <sup>2</sup> )
<b>PRIVATE SECTOR (in constant dollars)</b>	94.0	93.8	94.5	( <sup>3</sup> )	( <sup>3</sup> )	94.1	94.5	94.3	94.3	94.6	( <sup>3</sup> )	( <sup>3</sup> )

<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.

<sup>2</sup>Percent change is less than 0.05 percent.

<sup>3</sup>Not available.

p = preliminary.

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

## 16. Average weekly earnings, by industry

[Production or nonsupervisory workers on private nonagricultural payrolls]

Industry	Annual average		1984			1985									
	1983	1984	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept. <sup>p</sup>	Oct. <sup>p</sup>
	<b>PRIVATE SECTOR</b>	\$280.70	\$294.05	\$294.84	\$295.89	\$300.33	\$294.95	\$294.79	\$298.20	\$298.05	\$298.55	\$303.02	\$301.46	\$302.32	\$305.18
Current dollars	( <sup>1</sup> )	( <sup>1</sup> )	294.98	296.38	298.14	296.24	298.00	299.90	298.90	300.11	301.51	299.95	301.86	303.26	302.40
Seasonally adjusted	171.37	173.48	171.42	172.23	174.61	171.28	170.50	171.68	170.80	170.50	172.56	171.48	171.68	172.81	( <sup>1</sup> )
Constant (1977) dollars															
<b>MINING</b>	479.40	503.58	500.26	505.91	515.97	508.79	514.08	519.28	516.57	515.91	523.96	509.65	517.44	525.60	516.34
<b>CONSTRUCTION</b>	442.97	456.92	464.74	451.33	460.98	447.72	451.28	460.69	461.54	464.44	461.77	469.38	468.03	477.02	471.68
<b>MANUFACTURING</b>															
Current dollars	354.08	373.63	374.22	378.92	387.28	380.03	374.37	381.78	380.15	382.04	385.70	382.15	382.99	389.23	388.28
Constant (1977) dollars	216.17	220.43	217.57	220.56	225.16	220.69	216.52	219.79	217.85	218.18	219.65	217.38	217.48	220.40	( <sup>1</sup> )
<b>Durable goods</b>	382.17	403.24	403.91	407.79	419.32	410.59	403.60	412.41	410.23	411.64	417.31	410.06	412.05	419.80	418.78
Lumber and wood products	312.78	320.40	322.78	315.95	321.98	315.90	309.85	317.56	317.58	325.61	336.19	325.54	333.70	337.39	335.32
Furniture and fixtures	260.83	271.95	278.59	278.70	283.79	276.19	270.59	277.85	276.83	275.16	281.46	276.53	285.19	290.47	292.00
Stone, clay, and glass products	385.12	401.94	406.81	406.14	404.62	392.85	393.09	404.91	411.60	415.52	418.20	418.35	418.49	420.33	417.64
Primary metal industries	459.68	478.30	464.62	475.69	477.98	473.55	478.12	481.56	480.73	479.57	486.97	485.34	480.32	487.06	484.14
Blast furnaces and basic steel products	509.16	527.39	506.68	524.80	516.71	517.57	544.85	540.09	547.45	543.05	552.86	559.31	550.84	555.07	553.20
Fabricated metal products	370.27	388.33	388.22	389.87	405.23	395.11	387.44	396.34	395.24	395.79	400.48	394.13	395.93	402.97	400.34
Machinery except electrical	386.78	417.32	417.83	422.94	434.85	422.42	415.74	424.27	417.99	421.06	427.65	420.65	422.10	431.39	428.69
Electrical and electronic equipment	351.14	370.64	374.24	379.04	389.58	379.73	373.20	383.11	376.00	377.48	385.02	376.91	383.80	388.14	389.09
Transportation equipment	491.31	521.79	523.60	531.62	554.02	546.08	524.15	537.59	538.04	539.30	539.32	531.30	531.30	544.85	549.12
Motor vehicles and equipment	525.66	558.01	556.84	565.07	597.15	594.06	559.37	576.79	586.92	587.38	579.79	574.00	566.95	583.25	585.28
Instruments and related products	342.59	365.51	367.92	373.22	382.87	369.90	369.87	374.01	368.96	372.50	376.07	370.76	373.41	381.41	376.36
Miscellaneous manufacturing	266.27	277.38	279.89	280.99	285.68	279.08	276.82	282.24	280.86	285.38	286.10	281.78	284.59	291.60	296.54
<b>Nondurable goods</b>	318.35	331.45	332.54	337.39	342.00	336.73	333.68	338.37	337.26	339.55	342.54	341.82	344.20	348.00	345.86
Food and kindred products	323.51	333.52	330.74	337.20	342.23	334.96	331.89	335.23	336.73	343.20	340.29	341.60	341.34	346.80	340.90
Tobacco manufactures	388.21	438.40	420.82	480.78	433.40	424.85	442.50	452.40	424.38	469.32	483.69	437.65	461.52	404.04	434.90
Textile mill products	249.67	257.75	253.11	257.42	258.86	257.01	254.10	258.96	257.28	260.52	266.93	258.23	270.14	274.73	274.73
Apparel and other textile products	194.76	202.02	203.08	203.08	206.75	205.13	202.35	206.85	203.20	205.98	209.19	206.34	207.32	210.45	210.08
Paper and allied products	423.02	448.67	453.41	460.71	466.91	456.03	451.14	454.33	458.82	460.10	463.97	465.86	465.89	472.63	470.45
Printing and publishing	342.54	356.26	359.10	364.24	366.53	359.25	358.08	362.30	360.00	358.08	358.45	360.69	369.74	373.00	369.31
Chemicals and allied products	440.13	464.25	469.66	473.89	480.82	477.24	476.10	478.68	481.01	480.17	484.99	482.56	483.39	488.55	485.21
Petroleum and coal products	582.99	586.89	590.39	596.94	584.30	597.49	594.58	601.77	595.56	583.80	596.52	606.10	605.77	621.81	606.12
Rubber and miscellaneous plastics products	329.60	345.69	345.28	349.44	355.32	352.34	343.44	347.71	346.83	345.61	350.20	346.72	346.36	351.41	353.97
Leather and leather products	203.87	209.76	207.64	210.82	215.18	207.64	207.28	212.43	215.50	218.04	221.54	218.63	216.92	220.00	218.66
<b>TRANSPORTATION AND PUBLIC UTILITIES</b>	420.81	437.73	438.26	444.38	445.56	438.01	440.66	441.73	441.78	441.73	449.40	448.33	454.86	456.55	451.13
<b>WHOLESALE TRADE</b>	329.18	345.86	348.30	351.40	357.49	351.74	352.20	353.82	354.82	357.59	360.99	359.68	358.90	362.00	357.05
<b>RETAIL TRADE</b>	171.05	176.40	174.64	176.12	179.65	173.73	174.31	175.52	175.22	177.91	179.39	180.27	179.07	177.60	176.12
<b>FINANCE, INSURANCE, AND REAL ESTATE</b>	263.90	278.13	279.96	280.64	285.53	282.83	286.47	286.47	285.74	284.23	291.77	285.68	286.77	292.73	288.08
<b>SERVICES</b>	239.04	250.59	252.12	254.08	257.94	254.80	256.56	256.56	257.21	257.68	261.03	260.17	260.50	263.71	263.24

<sup>1</sup> Not available.

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

p = preliminary.

## 17. Indexes of diffusion: Industries in which employment increased, seasonally adjusted

[In percent]

Time span	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Over 1-month span	1983	52.2	45.9	59.7	70.0	68.9	63.0	72.7	69.5	73.2	74.1	66.8	68.9
	1984	67.3	72.7	66.8	67.3	60.5	64.3	65.7	58.1	48.4	66.5	55.1	63.5
	1985	57.6	50.3	55.9	44.6	50.3	47.0	54.9	56.8	P43.5	P63.8	.....	.....
Over 3-month span	1983	46.2	53.2	63.0	73.5	71.9	73.8	72.7	80.3	80.8	78.6	74.6	74.3
	1984	78.1	75.9	77.6	68.9	69.7	67.0	65.4	60.3	60.0	56.5	67.0	60.0
	1985	58.6	54.1	46.8	45.9	44.1	49.7	50.5	P48.9	P52.4	.....	.....	.....
Over 6-month span	1983	50.0	62.4	65.7	67.8	74.3	78.4	79.7	79.5	78.9	79.2	79.7	78.4
	1984	79.2	77.8	77.3	75.4	69.2	64.9	63.2	64.1	67.0	59.7	57.6	60.3
	1985	52.2	49.5	44.3	44.6	44.3	P41.4	P47.3	.....	.....	.....	.....	.....
Over 12-month span	1983	48.6	55.1	61.4	68.6	72.4	75.1	77.0	79.7	78.4	80.8	81.6	81.1
	1984	81.9	78.4	76.8	75.1	72.7	73.0	70.0	65.7	63.5	60.5	56.2	51.9
	1985	50.8	48.4	P48.9	P46.8	.....	.....	.....	.....	.....	.....	.....	.....

p = preliminary.

are counted as rising.) Data are centered within the spans. See the "Definitions" in this section. See "Notes on the data" for a description of the most recent benchmark revision.

NOTE: Figures are the percent of industries with employment rising. (Half of the unchanged components

## UNEMPLOYMENT INSURANCE DATA

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

### Definitions

Data for all programs represent an unduplicated count of insured unemployment under State programs, Unemployment Compensation for Ex-Servicemen, and Unemployment Compensation for Federal Employees, and the Railroad Insurance Act. The total may include persons receiving Federal-State Extended Benefits.

Under both State and Federal unemployment insurance programs for civilian employees, insured workers must report the completion of at least 1 week of unemployment before they are defined as unemployed. Persons not covered by unemployment insurance (about 10 percent of the labor force) and those who have exhausted or not yet earned benefit rights are

excluded from the scope of the survey. **Initial claims** are notices filed by persons in unemployment insurance programs to indicate they are out of work and wish to begin receiving compensation. A claimant who continued to be unemployed a full week is then counted in the insured unemployment figure. The **rate of insured unemployment** expresses the number of insured unemployed as a percent of the average insured employment in a 12-month period.

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

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

### 18. Unemployment insurance and employment service operations

[All items except average benefits amounts are in thousands]

Item	1984				1985								
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July <sup>r</sup>	Aug. <sup>p</sup>	Sept.
All programs:													
Insured unemployment	2,083	2,149	2,441	2,778	3,361	3,339	3,113	2,766	2,455	2,337	2,523	2,361	.....
State unemployment insurance program: <sup>1</sup>													
Initial claims <sup>2</sup>	1,260	1,758	1,825	2,074	2,610	1,662	1,507	1,633	1,486	1,419	1,912	1,454	.....
Insured unemployment (average weekly volume)	2,023	2,072	2,355	2,691	3,264	3,239	3,016	2,680	2,385	2,274	2,455	2,292	.....
Rate of insured unemployment	2.3	2.4	2.7	3.1	3.7	3.6	3.4	3.0	2.6	2.5	2.7	2.5	.....
Weeks of unemployment compensated	7,209	8,092	8,421	9,211	12,382	11,759	11,680	10,804	10,010	8,271	9,705	8,950	.....
Average weekly benefit amount for total unemployment	\$122.49	\$123.19	\$123.95	\$125.36	\$126.68	\$127.28	\$128.98	\$127.55	\$126.33	\$125.73	\$125.04	\$126.13	.....
Total benefits paid	\$853,424	\$962,856	\$1,005,727	\$1,114,781	\$1,505,278	\$1,450,239	\$1,423,315	\$1,333,715	\$1,223,008	\$1,008,462	\$1,171,167	\$1,093,728	.....
State unemployment insurance program: <sup>1</sup> (Seasonally adjusted data)													
Initial claims <sup>2</sup>	<sup>r</sup> 1,696	<sup>r</sup> 1,733	<sup>r</sup> 1,745	<sup>r</sup> 1,636	<sup>r</sup> 1,746	<sup>r</sup> 1,780	<sup>r</sup> 1,726	<sup>r</sup> 1,728	1,746	<sup>r</sup> 1,724	1,695	1,703	.....
Insured unemployment (average weekly volume)	<sup>r</sup> 2,503	<sup>r</sup> 2,466	<sup>r</sup> 2,546	<sup>r</sup> 2,531	<sup>r</sup> 2,541	<sup>r</sup> 2,591	<sup>r</sup> 2,600	<sup>r</sup> 2,608	<sup>r</sup> 2,570	<sup>r</sup> 2,596	2,598	2,578	.....
Rate of insured unemployment	<sup>r</sup> 2.9	<sup>r</sup> 2.8	<sup>r</sup> 2.9	<sup>r</sup> 2.9	<sup>r</sup> 2.8	<sup>r</sup> 2.9	<sup>r</sup> 2.9	<sup>r</sup> 2.9	<sup>r</sup> 2.8	<sup>r</sup> 2.9	2.8	2.8	.....
Unemployment compensation for ex-servicemen: <sup>3</sup>													
Initial claims <sup>1</sup>	13	15	13	12	14	12	12	11	10	10	12	13	.....
Insured unemployment (average weekly volume)	20	21	22	23	24	22	21	19	17	16	17	17	.....
Weeks of unemployment compensated	72	86	87	88	102	86	82	76	74	62	68	66	.....
Total benefits paid	\$9,820	\$11,766	\$11,984	\$11,930	\$13,901	\$11,720	\$11,193	\$10,437	\$10,173	\$8,644	\$9,555	\$9,414	.....
Unemployment compensation for Federal civilian employees: <sup>4</sup>													
Initial claims	9	15	12	11	14	9	8	9	8	10	11	9	.....
Insured unemployment (average weekly volume)	19	21	23	24	27	26	24	20	17	17	19	18	.....
Weeks of unemployment compensated	69	85	89	94	113	101	101	86	73	63	76	75	.....
Total benefits paid	\$8,198	\$10,088	\$10,830	\$11,386	\$14,017	\$12,847	\$12,786	\$11,166	\$9,310	\$7,911	\$9,478	\$9,365	.....
Railroad unemployment insurance:													
Applications	6	9	10	11	13	4	3	3	3	12	31	8	.....
Insured unemployment (average weekly volume)	18	21	26	29	31	34	34	23	16	17	21	21	.....
Number of payments	34	46	52	61	94	74	75	64	43	35	39	44	.....
Average amount of benefit payment	\$196.15	\$195.20	\$198.85	\$205.26	\$206.99	\$209.76	\$209.66	\$198.24	\$190.11	\$187.14	\$190.84	\$202.20	.....
Total benefits paid	\$6,349	\$8,596	\$9,578	\$12,241	\$19,108	\$15,361	\$15,037	\$12,710	\$8,060	\$6,000	\$6,680	\$8,317	.....
Employment service: <sup>5</sup>													
New applications and renewals	4,803	.....	.....	6,728	.....	.....	10,099	.....	.....	12,532	.....	.....	.....
Nonfarm placements	1,182	.....	.....	1,577	.....	.....	2,238	.....	.....	2,740	.....	.....	.....

<sup>1</sup>Initial claims and State insured unemployment include data under the program for Puerto Rican sugarcane workers.

<sup>2</sup>Excludes transition claims under State programs.

<sup>3</sup>Excludes data on claims and payments made jointly with other programs.

<sup>4</sup>Excludes data or claims and payments made jointly with State programs.

<sup>5</sup>Cumulative total for fiscal year (October 1-September 30). Data computed quarterly.

r = revised.

p = preliminary.

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

## PRICE DATA

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

### Definitions

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

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

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

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

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

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

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

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

### Notes on the data

Regional CPI's cross classified by population size were introduced in the May 1978 *Review*. These indexes enable users in local areas for which an index is not published to get a better approximation of the CPI for their area by using the appropriate population size class measure for their region. The cross-classified indexes are published bimonthly. (See table 21.)

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

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

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

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

**19. Consumer Price Index for Urban Wage Earners and Clerical Workers, annual averages and changes, 1967-84**

[1967 = 100]

Year	All Items		Food and beverages		Housing		Apparel and upkeep		Transportation		Medical care		Entertainment		Other goods and services	
	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change
1967	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...
1968	104.2	4.2	103.6	3.6	104.0	4.0	105.4	5.4	103.2	3.2	106.1	6.1	105.7	5.7	105.2	5.2
1969	109.8	5.4	108.8	5.0	110.4	6.2	111.5	5.8	107.2	3.9	113.4	6.9	111.0	5.0	110.4	4.9
1970	116.3	5.9	114.7	5.4	118.2	7.1	116.1	4.1	112.7	5.1	120.6	6.3	116.7	5.1	115.8	5.8
1971	121.3	4.3	118.3	3.1	123.4	4.4	119.8	3.3	118.6	5.2	128.4	6.5	122.9	5.3	122.4	4.8
1972	125.3	3.3	123.2	4.1	128.1	3.8	122.3	2.1	119.9	1.1	132.5	3.2	126.5	2.9	127.5	4.2
1973	133.1	6.2	139.5	13.2	133.7	4.4	126.8	3.7	123.8	3.3	137.7	3.9	130.0	2.8	132.5	3.9
1974	147.7	11.0	158.7	13.8	148.8	11.3	136.2	7.4	137.7	11.2	150.5	9.3	139.8	7.5	142.0	7.2
1975	161.2	9.1	172.1	8.4	164.5	10.6	142.3	4.5	150.6	9.4	168.6	12.0	152.2	8.9	153.9	8.4
1976	170.5	5.8	177.4	3.1	174.6	6.1	147.6	3.7	165.5	9.9	184.7	9.5	159.8	5.0	162.7	5.7
1977	181.5	6.5	188.0	8.0	186.5	6.8	154.2	4.5	177.2	7.1	202.4	9.6	167.7	4.9	172.2	5.8
1978	195.3	7.6	206.2	9.7	202.6	8.6	159.5	3.4	185.8	4.9	219.4	8.4	176.2	5.1	183.2	6.4
1979	217.7	11.5	228.7	10.9	227.5	12.3	166.4	4.3	212.8	14.5	240.1	9.4	187.6	6.5	196.3	7.2
1980	247.0	13.5	248.7	8.7	263.2	15.7	177.4	6.6	250.5	17.7	267.2	11.3	203.7	8.5	213.6	8.8
1981	272.3	10.2	267.8	7.7	293.2	11.4	186.6	5.2	281.3	12.3	295.1	10.4	219.0	7.5	233.3	9.2
1982	288.6	6.0	278.5	4.0	314.7	7.3	190.9	2.3	293.1	4.2	326.9	10.8	232.4	6.1	257.0	10.2
1983	297.4	3.0	284.7	2.2	322.0	2.3	195.6	2.5	300.0	2.4	355.1	8.6	242.4	4.3	286.3	11.4
1984	307.6	3.4	295.2	3.7	329.2	2.2	199.1	1.8	313.9	4.6	377.7	6.4	251.2	3.6	304.9	6.5

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1984		1985					1984		1985				
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
All Items	314.5	320.1	321.3	322.3	322.8	323.5	324.5	312.1	316.7	317.8	318.7	319.1	319.6	320.5
Food and beverages	296.4	301.6	301.0	301.4	301.6	301.8	302.1	296.3	301.2	300.8	301.2	301.4	301.6	301.8
Housing	341.4	345.9	348.5	350.4	351.6	352.9	353.8	336.8	339.5	342.1	344.0	345.0	346.2	347.2
Apparel and upkeep	204.2	205.9	205.3	204.6	202.8	205.3	209.6	203.3	204.9	204.2	203.7	201.8	204.3	208.7
Transportation	313.7	320.0	321.4	321.8	321.8	320.7	319.7	316.0	322.0	323.3	323.6	323.5	322.3	321.1
Medical care	383.1	398.0	399.5	401.7	404.0	406.6	408.3	381.2	396.1	397.7	399.8	402.0	404.5	406.3
Entertainment	257.3	263.3	263.6	264.8	265.7	266.8	266.8	253.4	258.6	258.8	260.1	260.9	260.8	261.6
Other goods and services	314.6	321.8	322.3	323.0	325.0	326.0	333.3	310.9	318.3	318.8	319.5	321.8	322.9	328.7
Commodities	282.3	286.8	287.0	286.9	286.5	286.5	287.1	282.5	286.7	286.8	286.8	286.4	286.5	286.8
Commodities less food and beverages	271.0	275.1	275.6	275.4	274.6	274.4	275.3	271.8	275.5	276.0	275.8	275.0	274.8	275.5
Nondurables less food and beverages	277.2	281.5	283.1	283.5	282.9	283.1	284.6	279.0	283.2	284.9	285.4	285.0	285.1	286.5
Durables	268.7	272.6	271.6	270.4	269.3	268.6	268.7	264.4	267.3	266.3	265.1	263.8	263.1	263.1
Services	368.9	376.2	378.9	381.3	383.3	384.9	386.5	366.8	372.2	374.9	377.4	379.2	380.7	382.0
Rent, residential	252.4	260.4	262.6	263.6	265.0	266.6	267.7	251.7	259.6	261.8	262.7	264.1	265.7	266.8
Household services less rent of shelter (12/82 = 100)	111.0	109.8	110.9	112.7	113.2	113.2	113.5	101.7	101.2	102.2	104.2	104.5	104.6	104.8
Transportation services	324.6	334.1	334.5	335.3	337.0	337.4	337.1	320.7	329.6	329.9	330.6	332.2	332.4	331.4
Medical care services	413.9	429.4	403.9	433.0	435.8	438.6	440.5	411.5	427.1	428.7	430.7	433.3	436.1	438.1
Other services	302.5	309.9	310.7	312.0	313.0	313.9	319.7	299.0	306.2	307.2	308.4	309.3	310.1	315.0
<b>Special indexes:</b>														
All items less food	315.2	320.8	322.4	323.6	324.2	325.0	326.2	312.7	317.2	318.7	319.8	320.3	320.9	321.9
All items less homeowners' costs	107.4	109.2	109.5	109.8	109.9	110.1	110.4	...	101.4	101.7	102.0	102.0	102.1	102.4
Commodities less food	268.8	272.8	273.4	273.1	272.4	272.3	273.1	269.6	273.3	273.8	273.6	272.8	272.7	273.4
Nondurables less food	272.3	276.5	278.0	278.4	277.9	278.1	279.6	274.1	278.2	279.8	280.4	280.0	280.2	281.5
Nondurables less food and apparel	312.3	318.1	320.7	321.7	321.9	321.1	321.0	313.5	319.1	321.8	322.9	323.2	322.4	322.3
Nondurables	288.0	292.7	293.3	293.7	293.5	293.7	294.6	288.8	293.4	294.0	294.4	294.3	294.5	295.2
Services less rent of shelter (12/82 = 100)	110.5	112.2	112.8	113.7	114.2	114.5	115.0	...	101.4	101.9	102.8	103.3	103.5	103.8
Services less medical care	361.7	368.1	370.9	373.3	375.2	376.7	378.3	359.6	364.1	366.8	369.3	371.1	372.5	373.6
Domestically produced farm foods	280.0	283.3	281.9	281.8	282.3	281.6	281.0	278.3	281.6	280.0	280.0	280.5	279.8	279.1
Selected beef cuts	271.5	273.3	268.6	266.9	264.0	261.1	260.7	273.2	274.8	270.1	268.4	265.2	262.6	262.1
Energy	429.0	424.4	431.7	436.8	437.1	439.8	432.6	428.3	424.2	431.3	436.9	437.2	433.9	432.5
Energy commodities	405.4	410.8	417.0	418.7	418.1	414.0	411.2	406.3	411.6	418.0	419.9	419.6	415.7	412.6
All items less energy	306.1	312.7	313.3	313.9	314.5	315.6	316.8	302.7	308.1	308.6	309.1	309.5	310.4	311.5
All items less food and energy	304.9	311.8	312.8	313.4	314.1	315.3	316.9	301.0	306.4	307.3	307.8	308.3	309.4	310.7
Commodities less food and energy	256.0	260.0	259.6	259.0	258.2	258.8	260.2	253.8	257.2	256.8	256.2	255.3	255.8	257.2
Services less energy	361.0	370.7	372.9	374.6	376.6	378.6	380.2	358.4	366.2	368.4	369.9	371.9	373.7	374.9
Purchasing power of the consumer dollar, 1967 = \$1	\$0.318	\$0.312	\$0.311	\$0.310	\$0.310	\$0.309	\$0.308	\$0.320	\$0.316	\$0.315	\$0.314	\$0.313	\$0.313	\$0.312

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1984		1985					1984		1985				
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
<b>FOOD AND BEVERAGES</b>	296.4	301.6	301.0	301.4	301.6	295.3	302.1	296.3	301.4	300.8	301.2	301.4	301.6	301.8
<b>Food</b>	304.2	309.6	308.9	309.3	309.5	302.8	309.9	303.8	309.2	308.4	308.8	309.0	309.1	309.3
Food at home	293.4	297.7	296.2	296.0	296.2	295.9	295.6	291.9	296.1	294.6	294.5	299.6	294.3	294.0
Cereals and bakery products	307.9	314.8	315.9	317.3	317.3	318.5	319.2	306.3	313.1	314.1	315.7	315.7	316.8	317.6
Cereals and cereal products (12/77 = 100)	164.5	168.2	169.4	169.8	170.2	170.8	170.7	165.1	168.8	169.9	170.5	170.9	171.5	171.4
Flour and prepared flour mixes (12/77 = 100)	146.3	147.5	150.7	151.8	152.2	153.1	151.8	146.6	147.8	150.9	152.2	152.5	153.4	152.1
Cereal (12/77 = 100)	186.1	193.9	194.6	194.7	194.6	195.4	195.7	188.3	196.2	197.0	197.1	197.1	197.9	198.1
Rice, pasta, and cornmeal (12/77 = 100)	150.4	150.7	150.7	151.1	152.2	152.3	152.7	151.5	151.9	151.8	152.2	153.4	153.4	153.9
Bakery products (12/77 = 100)	162.4	166.0	166.4	167.3	167.1	167.7	168.3	161.1	164.7	165.0	165.9	165.8	166.4	167.0
White bread	263.2	266.2	265.2	267.7	267.5	268.0	269.0	258.8	261.9	260.8	263.6	263.2	263.9	264.8
Other breads (12/77 = 100)	155.8	160.2	159.9	160.4	159.8	160.4	160.8	158.0	162.7	162.3	162.8	162.2	162.8	163.2
Fresh biscuits, rolls, and muffins (12/77 = 100)	159.7	161.4	162.1	163.5	162.4	164.0	163.3	155.6	157.3	157.8	159.2	158.0	159.6	159.3
Fresh cakes and cupcakes (12/77 = 100)	165.9	169.9	171.2	170.4	170.6	170.6	171.3	163.6	168.0	169.0	168.4	168.5	168.5	169.3
Cookies (12/77 = 100)	167.3	172.2	173.2	174.3	175.0	176.6	177.4	168.3	173.2	174.2	175.2	176.1	177.6	178.5
Crackers, bread, and cracker products (12/77 = 100)	161.7	170.3	172.0	172.9	173.2	173.4	174.2	163.0	171.9	173.6	174.7	175.1	175.1	176.1
Fresh sweetrolls, coffeecake, and donuts (12/77 = 100)	162.9	165.0	165.4	166.5	165.4	165.0	167.7	165.9	167.9	168.3	169.5	168.3	168.2	170.6
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	169.3	174.8	175.7	176.0	176.4	178.1	176.4	162.0	167.2	168.3	168.5	169.1	170.7	168.9
Meats, poultry, fish, and eggs	264.5	263.6	259.8	259.8	260.4	259.7	260.6	264.1	262.9	259.2	259.3	259.7	259.0	259.9
Meats, poultry, and fish	271.6	271.2	267.8	268.0	268.0	267.0	266.8	271.0	270.3	267.1	267.3	266.9	266.1	265.9
Meats	268.0	266.4	263.4	263.0	262.7	261.2	260.4	267.7	265.7	262.9	262.5	262.0	260.7	259.9
Beef and veal	271.9	273.7	269.0	267.4	264.7	267.8	261.1	272.8	274.4	269.8	268.1	265.1	262.4	261.8
Ground beef other than canned	252.9	256.1	249.1	246.7	244.6	244.1	245.5	254.4	257.4	250.4	247.9	245.8	245.4	246.7
Chuck roast	271.8	275.1	266.2	261.1	257.9	253.0	250.0	280.6	283.6	274.2	270.0	266.8	261.1	258.1
Round roast	234.3	238.8	232.9	226.8	226.7	222.8	220.4	237.8	242.5	236.4	230.6	230.0	228.9	223.8
Round steak	252.4	255.4	251.4	248.1	242.2	237.8	238.7	251.4	252.1	249.0	245.7	238.8	235.5	237.3
Sirloin steak	286.1	273.5	272.8	284.1	280.0	272.0	267.3	278.7	274.5	276.0	286.2	282.5	274.6	269.4
Other beef and veal (12/77 = 100)	169.0	170.2	169.0	168.6	166.9	165.5	165.3	167.8	169.1	167.9	167.5	165.5	164.3	164.1
Pork	257.5	249.0	247.8	248.6	253.1	253.8	252.1	257.0	248.2	246.9	248.0	252.1	252.8	251.1
Bacon	270.3	277.8	274.8	271.6	280.1	280.6	272.5	274.2	281.8	278.7	275.3	284.6	284.2	276.3
Chops	242.3	226.1	223.1	227.0	233.5	232.4	233.9	240.6	224.5	221.0	225.3	231.5	230.2	231.6
Ham other than canned (12/77 = 100)	116.8	108.2	109.5	111.1	112.0	114.3	116.5	113.6	105.5	106.7	108.4	109.1	111.4	113.1
Sausage	321.2	316.2	318.4	316.3	317.4	316.7	316.7	322.7	315.9	318.1	316.3	317.4	319.0	317.3
Canned ham	251.4	250.2	252.8	249.9	248.2	249.5	248.6	256.0	254.3	257.3	254.7	252.7	254.3	253.0
Other pork (12/77 = 100)	142.5	135.9	133.2	134.4	137.2	137.1	134.1	141.7	135.2	132.5	133.8	136.4	136.1	133.0
Other meats	268.7	269.1	268.3	269.6	268.2	267.1	267.3	268.2	268.2	267.6	268.8	267.2	266.2	266.5
Frankfurters	267.6	267.8	264.9	264.8	261.5	261.4	263.2	266.1	266.0	263.1	263.6	259.5	259.3	261.6
Bologna, liverwurst, and salami (12/77 = 100)	155.6	158.2	157.5	157.0	157.6	156.0	156.8	155.4	158.2	157.5	156.9	157.5	156.0	156.7
Other luncheon meats (12/77 = 100)	138.8	136.4	136.9	137.9	137.0	137.0	136.5	137.0	134.4	135.0	135.8	135.0	135.0	134.5
Lamb and organ meats (12/77 = 100)	137.3	140.1	139.6	141.9	141.3	140.2	139.6	140.1	142.4	142.6	144.8	144.0	143.0	142.3
Poultry	217.2	216.7	213.6	216.0	214.7	213.9	215.9	214.7	214.4	211.1	219.7	212.1	211.6	213.7
Fresh whole chicken	220.2	215.0	209.2	213.7	211.8	212.8	214.3	217.5	217.7	207.0	211.5	209.1	210.5	211.8
Fresh and frozen chicken parts (12/77 = 100)	144.7	140.3	139.7	140.1	140.1	138.6	139.2	142.4	138.3	137.6	138.0	137.8	136.6	137.3
Other poultry (12/77 = 100)	132.7	141.6	140.5	141.5	140.3	139.2	141.8	131.8	140.8	139.3	140.5	139.4	138.3	141.3
Fish and seafood	390.6	402.8	393.8	397.2	402.7	406.1	408.6	389.1	401.9	394.9	396.4	400.9	404.6	407.3
Canned fish and seafood	133.7	133.0	134.0	133.6	133.2	132.1	132.7	133.2	132.8	133.7	139.2	132.8	131.6	132.2
Fresh and frozen fish and seafood (12/77 = 100)	157.7	165.5	160.7	161.8	165.4	168.1	169.2	157.5	165.6	160.7	161.9	165.0	169.0	169.3
Eggs	178.6	169.9	159.9	158.3	168.4	171.0	185.7	179.7	170.6	160.5	158.9	169.1	171.9	186.6
Dairy products	254.9	258.3	258.4	257.8	257.8	257.4	258.0	253.8	257.2	257.3	256.7	256.6	256.3	256.8
Fresh milk and cream (12/77 = 100)	137.7	140.2	139.8	139.8	139.1	138.2	139.0	136.9	139.4	139.1	139.0	138.3	138.4	138.3
Fresh whole milk	224.7	229.1	228.7	228.7	227.4	227.8	227.5	223.5	227.9	227.4	227.4	226.1	226.5	226.2
Other fresh milk and cream (12/77 = 100)	138.7	140.8	140.1	139.9	139.5	139.2	139.2	138.0	140.1	139.4	139.1	138.7	138.4	138.4
Processed dairy products	153.1	154.2	154.9	154.2	155.1	154.5	155.5	153.4	154.4	155.2	154.4	155.4	154.7	155.7
Butter	266.0	259.2	262.6	262.8	262.6	262.2	263.3	268.6	262.0	265.1	265.5	268.4	264.8	266.1
Cheese (12/77 = 100)	149.1	149.9	150.7	150.0	151.3	150.9	151.6	149.4	150.3	151.1	150.2	151.6	151.3	151.9
Ice cream and related products (12/77 = 100)	160.9	162.4	162.9	161.9	162.5	161.6	162.9	159.9	161.4	161.9	160.8	161.4	160.6	161.8
Other dairy products (12/77 = 100)	149.9	154.7	155.0	154.2	155.2	152.6	155.7	150.4	155.0	155.4	154.4	155.5	153.8	155.9
Fruits and vegetables	319.7	333.2	330.3	329.0	328.9	326.3	319.9	313.6	328.1	324.8	323.5	323.9	320.6	313.6
Fresh fruits and vegetables	332.5	353.5	346.9	343.9	343.1	337.4	326.6	323.0	346.1	338.7	335.7	336.0	329.1	316.6
Fresh fruits	364.8	367.2	381.9	380.8	370.0	375.9	368.5	349.6	353.7	367.1	365.9	356.7	361.7	352.2
Apples	337.9	328.8	333.9	342.7	347.9	343.2	324.9	339.6	329.7	336.4	346.5	351.0	346.2	326.9
Bananas	249.9	301.2	277.0	285.7	249.1	257.2	260.0	248.4	300.7	276.0	283.9	247.6	255.4	257.4
Oranges	553.6	444.3	484.8	473.1	474.7	481.1	462.9	507.1	407.4	442.6	430.0	436.3	439.9	413.1
Other fresh fruits (12/77 = 100)	170.4	191.7	201.9	199.8	191.6	196.8	196.4	163.6	184.8	194.6	192.1	184.6	184.6	189.4
Fresh vegetables	302.3	340.8	314.3	309.5	317.9	301.4	286.7	299.2	339.5	313.2	308.6	317.5	299.8	284.6
Potatoes	354.1	342.9	369.4	399.4	384.9	331.8	283.3	344.5	335.8	362.3	393.8	380.3	324.6	277.5
Lettuce	337.8	263.5	295.5	243.0	297.5	334.3	340.3	338.0	266.9	301.6	246.0	301.8	338.7	350.2
Tomatoes	252.9	410.0	232.9	218.9	232.4	219.3	214.0	256.2	413.5	234.7	220.1	235.1	221.7	217.1
Other fresh vegetables (12/77 = 100)	152.1	191.5	175.0	174.9										

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1984	1985						1984	1985					
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
Fruits and vegetables—Continued														
Processed vegetables (12/77 = 100)	146.9	147.1	148.1	148.4	148.6	149.0	148.2	145.7	145.9	146.9	147.2	147.4	147.7	147.1
Frozen vegetables (12/77 = 100)	156.2	160.0	161.0	161.1	162.7	162.8	163.3	157.7	162.0	163.1	163.1	164.8	164.6	165.4
Cut corn and canned beans except lima (12/77 = 100)	150.9	149.7	150.6	150.6	150.8	150.1	148.1	148.3	147.1	147.9	147.9	148.3	148.2	145.9
Other canned and dried vegetables (12/77 = 100)	140.2	139.2	140.2	140.8	140.3	141.1	140.6	138.6	137.6	138.6	139.2	138.6	139.4	138.9
Other foods at home	355.1	360.8	361.3	360.8	360.6	361.7	362.6	355.4	361.3	361.6	361.3	361.1	362.2	362.9
Sugar and sweets	393.7	396.1	397.6	398.3	400.2	401.8	401.1	393.1	395.5	396.9	398.0	399.8	401.4	400.8
Candy and chewing gum (12/77 = 100)	162.1	164.2	164.5	165.6	165.8	166.7	166.2	161.8	164.1	164.3	165.7	165.7	166.7	166.2
Sugar and artificial sweeteners (12/77 = 100)	172.3	169.3	170.1	169.6	171.2	172.0	171.7	173.5	170.6	171.3	171.0	172.6	173.1	173.2
Other sweets (12/77 = 100)	159.7	162.7	164.0	163.3	164.6	164.5	164.8	157.2	160.3	161.4	160.8	162.1	162.1	162.3
Fats and oils (12/77 = 100)	295.1	294.0	294.0	296.0	297.8	297.1	294.8	294.6	293.7	293.6	295.6	297.3	296.5	294.1
Margarine	296.6	297.0	298.8	301.9	307.2	306.0	305.0	294.3	294.4	296.0	298.6	304.5	303.2	302.2
Nondairy substitutes and peanut butter (12/77 = 100)	156.3	160.0	159.6	159.3	160.0	159.8	159.8	154.2	158.1	157.8	157.4	158.0	157.7	157.7
Other fats, oils, and salad dressings (12/77 = 100)	154.2	151.6	151.2	152.6	152.5	152.2	150.2	154.7	152.3	151.9	153.3	153.3	153.0	150.8
Nonalcoholic beverages	444.0	454.0	454.1	451.5	448.2	449.6	452.8	445.2	455.6	455.4	453.0	448.8	451.2	454.1
Cola drinks, excluding diet cola	316.8	325.5	324.9	321.2	317.8	318.5	321.1	314.1	322.7	322.0	318.6	315.4	316.2	318.5
Carbonated drinks, including diet cola (12/77 = 100)	149.4	150.3	151.2	150.5	148.5	149.8	151.6	147.1	148.3	149.0	148.4	146.5	147.7	149.3
Roasted coffee	376.3	378.9	379.9	380.5	379.7	377.2	375.7	370.2	372.8	373.9	374.8	373.9	371.4	369.9
Freeze dried and instant coffee	369.2	378.9	380.0	380.9	380.0	379.7	380.3	368.2	378.0	378.9	380.0	379.3	379.1	379.4
Other noncarbonated drinks (12/77 = 100)	148.3	153.8	153.1	152.7	152.7	153.6	154.9	148.7	154.1	153.4	153.1	153.2	154.1	155.3
Other prepared foods	287.3	292.8	293.4	293.4	294.5	295.8	296.3	288.7	294.2	294.9	295.0	296.1	297.8	297.7
Canned and packaged soup (12/77 = 100)	146.4	150.7	151.4	151.8	154.0	155.1	155.0	148.2	152.6	153.1	153.6	155.8	157.1	157.0
Frozen prepared foods (12/77 = 100)	161.6	165.8	164.7	164.8	165.0	166.6	168.7	160.4	164.8	163.5	163.8	163.9	165.5	167.4
Snacks (12/77 = 100)	166.9	169.3	170.3	170.1	171.1	170.3	171.1	169.2	171.8	172.8	172.5	173.6	172.9	173.4
Seasonings, olives, pickles, and relish (12/77 = 100)	165.6	167.9	168.5	166.6	167.0	168.1	167.9	164.7	166.8	167.4	165.8	166.3	167.3	167.2
Other condiments (12/77 = 100)	159.5	162.6	163.5	164.6	165.6	165.4	166.2	161.4	164.3	165.3	166.4	167.4	168.2	168.0
Miscellaneous prepared foods (12/77 = 100)	155.9	159.7	160.6	160.6	160.5	161.5	160.7	155.9	159.8	160.5	160.7	160.6	161.5	160.7
Other canned and packaged prepared foods (12/77 = 100)	152.8	153.9	153.7	153.5	153.6	159.0	154.0	153.9	155.1	155.0	154.8	155.0	155.2	155.2
Food away from home	335.8	343.9	345.1	346.9	347.3	348.4	349.9	339.0	347.1	348.4	350.1	350.4	351.5	353.0
Lunch (12/77 = 100)	162.4	165.9	166.4	167.0	167.1	167.7	168.8	163.9	167.4	168.0	168.5	168.7	169.2	170.4
Dinner (12/77 = 100)	161.8	166.1	166.6	167.8	168.0	168.6	169.1	163.6	168.0	168.5	168.9	169.9	170.5	170.9
Other meals and snacks (12/77 = 100)	165.7	169.7	170.4	171.3	171.3	171.7	172.2	166.3	170.1	170.8	171.7	171.7	172.0	172.5
Alcoholic beverages	223.1	226.7	227.7	227.8	227.8	228.9	229.3	226.4	229.9	230.8	231.0	231.0	232.2	232.6
Alcoholic beverages at home (12/77 = 100)	142.8	144.7	145.2	145.3	145.2	145.9	145.8	145.1	146.9	147.4	147.4	147.4	148.1	148.0
Beer and ale	231.5	235.4	235.7	236.3	236.5	237.6	236.8	230.5	234.2	234.5	234.9	235.2	236.4	235.6
Whiskey	153.8	154.7	155.6	155.3	155.0	155.5	156.0	154.1	154.6	155.5	155.3	154.8	155.4	155.8
Wine	231.8	234.9	236.5	235.2	235.1	235.8	236.3	239.5	242.6	244.4	243.5	242.9	243.5	244.2
Other alcoholic beverages (12/77 = 100)	123.4	124.7	125.1	125.5	125.4	126.1	126.5	123.2	124.4	124.8	125.2	125.1	126.0	126.5
Alcoholic beverages away from home (12/77 = 100)	157.2	161.5	162.8	162.9	163.3	164.5	165.6	158.6	162.7	163.8	164.0	164.3	165.2	167.0
<b>HOUSING</b>	<b>341.4</b>	<b>345.9</b>	<b>348.5</b>	<b>350.4</b>	<b>351.6</b>	<b>356.9</b>	<b>353.8</b>	<b>336.8</b>	<b>339.5</b>	<b>342.1</b>	<b>344.0</b>	<b>345.0</b>	<b>346.2</b>	<b>347.2</b>
<b>Shelter (CPI-U)</b>	<b>366.5</b>	<b>375.9</b>	<b>379.5</b>	<b>381.0</b>	<b>383.2</b>	<b>385.9</b>	<b>386.9</b>	.....	.....	.....	.....	.....	.....	.....
Renters' costs	110.2	113.5	119.5	115.1	115.8	116.6	117.0	.....	.....	.....	.....	.....	.....	.....
Rent, residential	252.4	260.4	267.6	263.6	265.0	266.6	267.6	.....	.....	.....	.....	.....	.....	.....
Other renters' costs	384.3	390.9	396.5	401.6	405.1	409.9	410.7	.....	.....	.....	.....	.....	.....	.....
Homeowners' costs	108.7	111.3	112.4	112.8	113.5	114.3	114.6	.....	.....	.....	.....	.....	.....	.....
Owners' equivalent rent	108.7	111.3	112.5	112.8	113.5	114.3	114.6	.....	.....	.....	.....	.....	.....	.....
Household insurance	108.6	111.4	112.0	112.7	112.7	113.0	113.7	.....	.....	.....	.....	.....	.....	.....
Maintenance and repairs	362.7	368.0	366.2	367.6	367.8	370.6	368.7	.....	.....	.....	.....	.....	.....	.....
Maintenance and repair services	414.3	418.2	416.0	423.2	421.1	425.1	421.9	.....	.....	.....	.....	.....	.....	.....
Maintenance and repair commodities	264.8	270.4	264.2	265.7	267.8	269.2	268.6	.....	.....	.....	.....	.....	.....	.....
<b>Shelter (CPI-W)</b>	.....	.....	.....	.....	.....	.....	.....	359.3	364.7	368.1	369.5	371.5	374.0	375.0
Rent, residential	.....	.....	.....	.....	.....	.....	.....	251.7	259.6	261.8	262.7	264.1	269.7	266.8
Other renters' costs	.....	.....	.....	.....	.....	.....	.....	383.6	391.0	396.7	401.0	405.2	409.5	409.8
Lodging while out of town	.....	.....	.....	.....	.....	.....	.....	404.8	412.8	421.6	427.6	434.1	441.0	434.3
Tenants' insurance (12/77 = 100)	.....	.....	.....	.....	.....	.....	.....	163.4	167.5	168.1	169.0	169.2	169.5	170.3
Maintenance and repairs	.....	.....	.....	.....	.....	.....	.....	359.4	363.1	361.8	362.9	363.4	365.6	364.4
Maintenance and repair services	.....	.....	.....	.....	.....	.....	.....	407.9	411.7	410.1	417.0	415.3	419.6	416.8
Maintenance and repair commodities	.....	.....	.....	.....	.....	.....	.....	258.1	261.6	260.7	258.4	260.0	260.6	260.5
Paint and wallpaper, supplies, tools, and equipment (12/77 = 100)	.....	.....	.....	.....	.....	.....	.....	147.8	151.8	151.2	147.6	149.6	150.6	150.3
Lumber, awnings, glass, and masonry (12/77 = 100)	.....	.....	.....	.....	.....	.....	.....	123.5	128.1	124.4	125.6	124.8	124.8	125.8
Plumbing, electrical, heating, and cooling supplies (12/77 = 100)	.....	.....	.....	.....	.....	.....	.....	142.7	145.8	145.7	145.4	146.5	146.0	146.0
Miscellaneous supplies and equipment (12/77 = 100)	.....	.....	.....	.....	.....	.....	.....	146.7	145.7	146.0	146.4	146.3	146.0	146.1

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1984		1985					1984		1985				
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
<b>Fuel and other utilities</b>	397.0	388.7	393.0	399.4	399.9	398.9	400.5	398.4	389.7	393.8	400.9	401.2	400.1	401.9
<b>Fuels</b>	500.1	483.0	490.0	497.7	497.3	494.4	496.8	499.8	482.3	488.9	497.7	497.0	494.0	496.7
Fuel oil, coal, and bottled gas	622.1	623.5	620.8	612.0	601.9	594.6	601.7	624.5	625.9	623.2	614.3	604.2	596.9	604.2
Fuel oil	628.4	630.1	627.0	616.9	604.9	596.6	604.9	630.8	632.5	629.5	619.3	607.3	599.0	607.6
Other fuels (6/78 = 100)	193.1	193.7	192.9	192.2	192.2	191.6	191.8	193.6	193.7	193.4	192.8	192.8	192.1	192.5
Gas (piped) and electricity	466.4	445.9	454.7	465.6	467.1	465.1	466.5	465.5	444.6	453.0	465.1	466.3	464.2	465.9
Electricity	374.9	355.7	358.4	377.6	378.5	380.0	380.4	375.5	354.6	357.4	378.2	379.1	380.6	381.1
Utility (piped) gas	598.4	578.2	598.9	590.3	592.8	583.8	587.0	593.2	575.0	594.1	586.2	588.0	578.5	582.5
<b>Other utilities and public services</b>	232.7	236.4	236.8	241.1	242.8	244.2	244.6	233.7	237.3	237.7	242.0	243.7	245.1	245.6
Telephone services	189.8	191.1	191.4	195.7	197.2	198.3	198.6	190.4	191.7	192.0	196.2	197.7	198.9	199.1
Local charges (12/77 = 100)	165.3	167.5	167.7	175.4	177.9	179.2	179.6	166.0	168.0	168.2	175.8	178.4	179.7	180.1
Interstate toll calls (12/77 = 100)	116.1	116.2	116.8	113.5	111.6	111.9	111.9	116.5	116.6	117.2	113.9	112.0	112.3	112.2
Intrastate toll calls (12/77 = 100)	124.8	124.2	123.9	124.4	125.9	126.3	126.3	124.6	124.2	123.8	124.3	125.9	126.2	126.3
Water and sewerage maintenance	380.2	393.2	394.2	398.5	400.3	402.9	403.9	384.5	396.8	397.9	402.5	404.5	406.8	407.9
<b>Household furnishings and operations</b>	244.1	247.9	247.6	247.1	246.5	247.0	247.1	240.6	244.1	244.0	249.3	242.6	243.1	243.2
<b>Housefurnishings</b>	200.6	201.7	201.2	200.0	198.8	199.1	199.0	198.3	199.2	198.9	197.6	196.2	196.6	196.5
Textile housefurnishings	245.6	239.5	243.2	240.6	236.2	238.4	243.1	249.9	243.0	247.2	244.2	239.5	242.1	247.3
Household linens (12/77 = 100)	146.8	140.5	143.8	140.9	137.1	138.6	143.6	148.1	141.7	144.8	141.9	138.2	140.0	145.6
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100)	159.8	158.7	159.9	159.7	158.0	159.2	160.0	164.8	163.0	165.1	164.5	162.4	163.7	164.3
Furniture and bedding	225.5	231.7	229.1	229.2	227.0	229.2	226.2	222.2	228.0	226.2	226.0	223.2	224.4	222.8
Bedroom furniture (12/77 = 100)	156.6	165.5	162.2	162.0	159.0	161.9	157.0	153.5	161.2	158.7	156.4	155.2	157.7	152.8
Sofas (12/77 = 100)	121.7	124.5	123.2	123.9	123.1	122.8	121.5	121.6	123.7	123.1	123.4	121.8	121.8	120.9
Living room chairs and tables (12/77 = 100)	126.8	126.9	126.7	128.2	126.6	126.6	128.8	127.8	128.1	127.9	129.1	127.5	127.7	130.6
Other furniture (12/77 = 100)	146.9	149.1	148.0	146.8	146.7	146.6	146.6	142.1	145.0	144.3	142.8	142.7	142.3	142.5
Appliances including TV and sound equipment	147.7	145.3	144.1	142.8	142.3	146.6	141.6	149.4	147.3	146.0	144.2	144.1	143.9	143.2
Television and sound equipment	100.8	99.0	97.8	96.4	96.4	96.0	95.3	99.8	97.9	96.7	95.4	95.4	94.9	94.2
Television	93.5	90.9	89.4	88.5	88.2	86.9	86.5	92.2	89.5	88.0	87.2	87.1	85.7	85.2
Sound equipment (12/77 = 100)	108.3	107.2	106.1	104.4	104.6	104.9	104.0	107.2	106.0	104.8	103.1	103.4	103.6	102.5
Household appliances	189.4	186.6	185.9	184.2	183.7	184.5	184.4	190.9	189.5	189.1	187.2	186.4	187.3	187.4
Refrigerators and home freezers	196.8	196.0	195.2	193.8	193.1	193.6	193.2	202.6	201.8	200.9	199.8	199.5	199.8	199.5
Laundry equipment	146.9	148.5	147.1	147.1	146.2	147.1	149.4	147.6	149.6	148.3	148.5	146.9	149.0	149.2
Other household appliances (12/77 = 100)	124.8	121.9	121.6	120.1	120.0	120.5	120.2	123.2	120.2	120.1	118.5	118.0	118.6	118.5
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100)	127.5	122.8	122.9	120.3	119.3	120.2	122.0	125.5	121.0	121.4	118.6	116.8	118.1	120.2
Office machines, small electric appliances, and air conditioners (12/77 = 100)	122.8	121.3	120.7	120.2	119.3	120.9	118.8	120.6	119.1	118.6	118.1	118.7	118.9	116.7
Other household equipment (12/77 = 100)	141.9	144.9	145.6	144.8	144.8	144.1	144.3	139.1	141.9	142.4	141.8	142.0	141.3	141.3
Floor and window coverings, infants' laundry, cleaning, and outdoor equipment (12/77 = 100)	146.7	151.1	152.4	149.7	152.0	149.9	148.1	136.2	140.7	141.5	139.1	141.2	139.2	137.4
Clocks, lamps, and decor items (12/77 = 100)	137.1	136.6	138.9	137.9	137.1	135.5	139.1	132.8	132.2	134.4	134.0	133.3	131.4	135.1
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100)	145.5	148.2	148.4	149.1	147.4	148.8	147.8	141.5	144.1	144.4	145.2	143.8	145.1	143.7
Lawn equipment, power tools, and other hardware (12/77 = 100)	135.5	140.6	140.3	139.1	140.4	138.6	139.5	141.4	145.1	144.7	149.3	145.0	143.2	144.1
<b>Housekeeping supplies</b>	304.9	312.6	312.9	313.6	313.1	313.5	313.9	302.0	309.8	310.0	310.8	310.3	310.4	311.0
Soaps and detergents	299.1	309.4	309.2	310.5	309.4	310.8	314.1	294.8	304.8	304.6	305.9	304.8	305.8	309.3
Other laundry and cleaning products (12/77 = 100)	155.8	157.8	157.5	158.4	159.0	159.7	160.1	154.3	156.5	156.1	156.9	157.5	158.2	158.7
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100)	155.2	161.4	162.3	162.0	162.1	160.7	160.6	155.2	161.0	161.9	161.8	161.8	160.1	160.2
Stationery, stationery supplies, and gift wrap (12/77 = 100)	144.2	147.3	146.7	146.8	146.7	147.8	147.9	147.9	151.1	150.6	150.7	150.6	151.6	151.8
Miscellaneous household products (12/77 = 100)	162.2	163.6	163.8	163.7	164.3	163.9	163.2	156.7	158.2	158.5	158.3	159.0	158.7	157.9
Lawn and garden supplies (12/77 = 100)	144.8	150.0	150.5	151.5	149.3	149.6	149.1	138.3	144.3	144.8	145.7	143.1	142.9	142.4
<b>Housekeeping services</b>	329.4	337.9	338.0	338.3	339.8	340.7	341.5	330.0	339.0	339.2	339.5	341.0	342.2	342.9
Postage	337.5	371.9	371.9	371.9	371.9	371.9	371.9	337.5	372.7	372.7	372.7	372.7	372.7	372.7
Moving, storage, freight, household laundry, and drycleaning services (12/77 = 100)	175.9	182.1	182.4	182.9	185.0	186.5	187.3	176.4	182.6	182.9	183.3	185.2	187.0	187.8
Appliance and furniture repair (12/77 = 100)	153.4	156.7	156.6	156.9	158.2	158.6	159.1	151.0	154.4	154.5	154.8	155.9	156.3	156.7
<b>APPAREL AND UPKEEP</b>	204.2	205.9	205.3	204.6	202.8	205.3	209.6	203.3	204.9	204.2	203.7	201.8	204.3	208.7
<b>Apparel commodities</b>	191.2	191.8	191.0	190.2	188.0	190.0	195.3	190.9	191.5	190.7	190.0	187.8	190.4	195.1
Apparel commodities less footwear	187.8	188.2	187.3	186.3	184.1	187.3	192.6	187.3	187.7	186.8	185.8	183.7	186.9	192.3
Men's and boys'	195.6	197.4	197.8	196.4	194.5	197.2	201.5	196.2	197.8	198.2	196.6	194.8	197.3	201.8
Men's (12/77 = 100)	123.2	124.7	124.9	123.7	122.5	124.4	126.7	123.9	125.4	125.5	124.1	123.1	124.6	127.2
Suits, sport coats, and jackets (12/77 = 100)	115.6	115.7	115.3	114.2	111.9	115.4	116.9	108.9	108.6	108.2	107.2	105.0	108.2	109.9
Coats and jackets	105.7	100.4	101.0	98.1	95.7	100.6	103.5	109.0	103.3	103.9	101.4	98.5	103.1	107.0
Furnishings and special clothing (12/77 = 100)	150.9	151.3	151.6	151.6	151.6	155.0	158.9	146.6	146.9	147.1	146.9	147.3	150.2	153.7
Shirts (12/77 = 100)	128.2	132.5	133.4	132.3	130.8	130.8	134.6	131.0	135.5	136.2	134.7	133.0	133.5	137.6
Dungarees, jeans, and trousers (12/77 = 100)	114.5	119.1	119.1	117.5	117.5	116.4	117.2	120.9	125.7	125.5	123.7	123.6	122.4	123.4
Boys' (12/77 = 100)	126.9	126.6	127.2	127.5	126.3	127.4	131.6	125.7	125.2	126.0	125.9	124.7	126.2	130.3
Coats, jackets, sweaters, and shirts (12/77 = 100)	127.0	121.9	122.2	122.1	120.7	123.9	131.1	129.8	123.6	124.2	123.5	122.3	126.4	133.3
Furnishings (12/77 = 100)	135.8	138.8	140.6	141.0	141.2	140.5	140.7	131.8	134.4	136.4	136.7	136.5	135.9	136.1
Suits, trousers, sport coats, and jackets (12/77 = 100)	123.3	125.3	125.8	126.3	124.8	124.9	128.2	120.4	123.1	123.6	123.8	122.3	122.5	126.0

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1984	1985						1984	1985					
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
Women's and girls'	170.5	170.0	168.0	166.5	163.4	167.7	176.1	172.1	172.0	169.7	168.4	165.0	169.9	178.2
Women's (12/77 = 100)	114.4	113.6	111.9	110.8	108.7	111.6	117.8	115.8	115.2	113.3	112.3	110.2	113.4	119.7
Coats and jackets	181.1	168.2	159.5	156.1	150.7	161.0	183.4	185.2	172.7	163.5	159.5	153.5	168.5	188.5
Dresses	178.3	178.7	179.1	176.4	168.1	168.2	179.9	165.5	166.9	167.3	164.5	157.7	158.0	167.9
Separates and sportswear (12/77 = 100)	102.5	103.2	102.1	101.0	98.8	102.8	111.0	102.9	103.6	102.6	101.9	99.5	103.0	111.7
Underwear, nightwear, and hosiery (12/77 = 100)	139.4	141.1	141.4	140.3	139.6	139.6	140.9	138.9	140.5	140.9	139.8	139.2	139.1	140.4
Suits (12/77 = 100)	93.5	89.1	82.6	83.1	85.1	94.5	97.0	112.1	108.9	100.6	101.9	102.6	111.0	117.4
Girls' (12/77 = 100)	108.6	110.7	110.7	110.6	108.8	111.1	113.6	108.6	111.0	110.8	110.8	109.5	111.4	113.3
Coats, jackets, dresses, and suits (12/77 = 100)	98.6	102.0	101.8	101.8	100.7	105.1	107.3	98.3	102.4	102.0	102.1	102.2	105.4	106.8
Separates and sportswear (12/77 = 100)	106.7	106.8	107.0	106.8	104.0	104.6	108.5	107.5	107.5	107.3	107.5	104.4	104.4	108.3
Underwear, nightwear, hosiery, and accessories (12/77 = 100)	128.3	132.1	132.2	132.0	131.2	132.9	133.5	127.0	131.1	131.2	130.7	130.1	132.2	132.6
Infants' and toddlers'	291.3	295.3	298.3	300.7	294.5	300.6	302.0	303.2	306.4	310.6	315.5	306.4	311.2	314.9
Other apparel commodities	216.5	215.8	215.1	216.3	216.7	217.5	215.2	205.0	203.3	202.7	204.0	204.5	105.2	202.5
Sewing materials and notions (12/77 = 100)	122.8	121.4	123.0	125.3	123.7	123.2	124.1	121.5	119.8	121.4	123.4	121.9	121.3	122.2
Jewelry and luggage (12/77 = 100)	147.3	147.3	145.9	146.0	147.0	148.0	145.5	137.6	136.8	135.5	135.8	137.0	137.9	135.0
Footwear	211.1	213.2	213.2	213.9	211.4	210.3	210.9	211.6	213.3	213.3	214.1	211.6	210.5	211.0
Men's (12/77 = 100)	138.0	139.1	139.8	139.8	139.5	139.3	139.1	139.8	141.1	141.8	141.4	141.4	141.4	140.9
Boys' and girls' (12/77 = 100)	133.5	134.5	134.5	136.7	134.8	132.8	131.6	136.3	136.9	137.1	139.3	137.5	135.4	134.3
Women's (12/77 = 100)	127.0	128.6	128.1	127.7	125.5	125.2	127.0	123.3	124.6	123.9	123.6	121.2	120.9	123.0
Apparel services	307.6	318.4	319.4	319.9	321.4	322.9	324.1	305.6	316.1	317.0	317.6	319.0	320.5	321.6
Laundry and drycleaning other than coin operated (12/77 = 100)	184.3	190.8	191.4	191.6	192.1	192.5	193.5	182.6	188.8	189.4	189.6	190.1	190.5	191.5
Other apparel services (12/77 = 100)	159.7	165.2	165.7	166.0	167.6	169.2	169.3	161.0	166.5	167.0	167.4	168.8	170.2	170.4
TRANSPORTATION	313.7	320.0	321.4	321.8	321.8	320.7	319.7	316.0	322.0	323.3	323.6	323.5	322.3	321.1
Private	308.4	314.6	316.0	316.3	316.1	314.9	313.6	312.1	318.0	319.4	319.6	319.3	318.0	316.6
New cars	208.2	214.1	214.5	214.7	214.7	214.6	214.2	207.6	213.4	213.8	214.0	214.0	213.8	213.8
Used cars	384.2	386.4	384.2	380.3	376.7	374.8	374.3	384.2	386.4	384.2	380.3	376.7	374.0	374.3
Gasoline	367.8	373.8	381.4	384.5	385.3	381.8	377.4	369.4	375.3	382.7	386.0	387.0	383.7	379.2
Automobile maintenance and repair	344.2	348.2	349.6	350.4	351.5	351.9	353.5	344.9	349.3	350.6	351.5	352.2	352.8	354.5
Body work (12/77 = 100)	174.7	178.2	178.6	179.5	180.1	180.6	181.4	173.1	176.7	177.1	178.3	178.8	179.3	180.0
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100)	168.1	170.9	171.1	170.9	170.6	171.1	171.9	172.2	175.4	175.7	175.5	175.3	175.8	176.6
Maintenance and servicing (12/77 = 100)	156.3	156.8	157.9	157.9	158.2	158.4	159.1	155.5	156.0	157.0	157.0	157.2	157.4	158.2
Power plant repair (12/77 = 100)	164.7	167.0	167.5	168.6	169.5	169.9	170.6	164.3	166.9	167.4	168.5	169.3	169.7	170.5
Other private transportation	275.9	285.8	285.6	286.6	287.6	287.7	285.8	277.0	286.3	285.9	286.9	287.7	287.6	285.2
Other private transportation commodities	201.2	202.8	201.3	203.9	202.2	202.8	203.4	203.4	205.1	203.5	205.9	204.3	204.9	205.6
Motor oil, coolant, and other products (12/77 = 100)	155.1	156.1	155.7	156.6	156.0	157.7	156.4	154.5	154.7	154.4	155.4	154.6	156.4	155.1
Automobile parts and equipment (12/77 = 100)	126.5	127.6	126.5	128.3	127.1	127.3	128.0	128.0	129.2	128.1	129.8	128.6	128.9	129.6
Tires	170.9	173.0	171.1	175.0	172.3	172.0	173.2	174.2	176.5	174.6	178.2	175.7	175.5	176.7
Other parts and equipment (12/77 = 100)	133.3	133.4	132.9	132.3	132.9	134.2	134.4	132.7	132.8	132.4	131.7	132.3	133.5	133.7
Other private transportation services	298.4	310.5	310.7	311.3	313.0	313.0	310.4	299.1	310.4	310.4	310.9	312.4	312.1	308.9
Automobile insurance	326.9	351.8	354.2	356.0	359.0	362.6	363.3	325.9	350.5	352.9	354.7	357.7	360.8	362.2
Automobile finance charges (12/77 = 100)	169.9	165.6	163.3	162.7	161.2	157.2	150.0	169.5	165.2	162.8	162.2	160.7	156.7	149.1
Automobile rental, registration, and other fees (12/77 = 100)	156.4	159.9	159.7	159.6	161.6	162.2	161.6	157.7	161.3	161.1	161.0	163.0	163.5	162.7
State registration	212.2	214.6	214.6	214.6	218.7	218.7	214.5	211.7	214.1	214.1	214.1	217.8	217.8	213.5
Drivers' licenses (12/77 = 100)	163.7	164.6	164.8	164.8	167.3	167.3	173.1	164.1	164.9	165.1	165.1	167.4	167.4	173.1
Vehicle inspection (12/77 = 100)	139.9	144.7	144.7	144.7	150.6	150.7	158.0	140.5	144.4	144.4	144.4	149.9	149.9	156.8
Other vehicle-related fees (12/77 = 100)	166.4	172.7	172.0	172.0	172.6	174.0	174.9	173.8	181.4	180.6	180.5	181.3	182.5	183.7
Public	389.5	398.0	398.4	399.3	402.4	403.7	408.0	380.4	387.4	387.6	388.4	392.1	393.5	396.8
Airline fare	450.1	466.2	466.8	467.8	468.0	468.6	476.7	445.4	462.1	462.5	463.3	463.1	464.1	472.0
Intercity bus fare	442.2	453.5	456.4	458.7	469.6	471.1	474.5	442.6	451.7	455.3	457.4	468.9	470.2	474.1
Intracity mass transit	346.5	347.6	347.6	348.3	354.6	356.5	357.8	346.5	347.4	347.4	348.1	353.9	356.0	357.1
Taxi fare	310.8	317.4	317.4	318.2	318.7	319.6	319.9	319.8	326.8	326.8	327.4	327.8	328.2	328.7
Intercity train fare	381.9	390.3	390.2	387.1	389.9	392.9	394.2	382.2	390.7	390.7	387.0	390.3	393.3	394.4
MEDICAL CARE	383.1	398.0	399.5	401.7	404.0	406.6	408.3	381.2	396.1	397.7	399.8	402.0	404.5	406.3
Medical care commodities	242.4	253.9	255.2	257.0	257.8	259.3	260.2	242.3	253.5	254.8	256.7	257.4	259.0	259.8
Prescription drugs	238.0	253.6	254.7	256.8	258.4	259.3	260.7	239.4	255.1	254.6	258.2	259.9	261.0	262.1
Anti-infective drugs (12/77 = 100)	168.4	175.7	175.6	177.1	179.8	180.1	181.3	171.0	178.4	178.4	179.9	182.7	183.0	184.2
Tranquilizers and sedatives (12/77 = 100)	208.7	233.9	234.7	237.1	238.4	239.1	240.4	208.6	233.8	234.4	236.9	238.2	239.0	240.3
Circulatories and diuretics (12/77 = 100)	171.7	182.7	184.5	185.9	186.3	188.7	188.7	170.9	181.8	183.5	184.9	185.2	187.0	187.5
Hormones, diabetic drugs, biologicals, and prescription medical supplies (12/77 = 100)	220.7	231.3	232.3	234.5	235.8	236.3	237.6	223.2	233.9	234.4	237.0	238.5	239.0	240.2
Pain and symptom control drugs (12/77 = 100)	192.0	202.7	205.3	206.0	206.9	207.8	207.8	193.8	204.6	205.7	208.1	209.0	209.8	209.8
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100)	176.1	187.1	186.8	188.2	188.8	190.3	191.1	176.9	187.9	187.5	188.7	189.2	190.9	191.8
Nonprescription drugs and medical supplies (12/77 = 100)	164.5	169.5	170.4	171.5	171.5	172.8	173.1	165.3	170.4	171.5	172.7	172.6	173.9	174.3
Eyeglasses (12/77 = 100)	141.4	144.7	144.2	146.2	145.8	145.5	146.2	140.4	143.4	143.0	145.3	144.8	144.4	145.2
Internal and respiratory over-the-counter drugs	269.5	278.5	280.4	281.9	282.5	284.8	285.2	270.5	279.6	281.8	283.3	283.6	286.1	286.6
Nonprescription medical equipment and supplies (12/77 = 100)	157.1	161.7	163.2	163.8	163.1	195.5	165.5	158.6	163.1	165.0	165.8	164.9	167.3	167.5

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1984		1985					1984		1985				
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
<b>Medical care services</b> .....	413.9	429.4	430.9	433.0	435.8	439.6	440.5	411.5	427.1	428.7	430.7	433.3	436.1	438.1
Professional services .....	349.8	363.0	364.5	366.4	368.1	370.0	371.7	350.1	363.6	365.0	366.8	368.5	370.4	372.1
Physicians' services .....	380.8	393.9	395.6	397.8	400.2	402.1	403.8	384.8	398.5	400.3	402.3	404.7	406.7	408.4
Dental services .....	331.9	344.5	345.8	347.3	348.5	380.5	352.1	329.5	342.0	343.2	344.5	345.7	347.7	349.2
Other professional services (12/77 = 100) .....	160.0	168.5	169.0	170.4	170.8	171.3	172.3	156.2	164.8	165.3	166.4	166.8	167.3	168.6
Other medical care services .....	491.5	509.6	511.2	513.6	517.6	521.6	523.9	488.4	506.6	508.2	510.5	514.4	518.4	520.7
Hospital and other medical services (12/77 = 100) .....	213.0	222.0	222.4	222.9	224.2	225.6	225.8	210.9	219.2	219.6	220.1	221.3	222.6	222.9
Hospital room .....	679.5	704.2	705.7	707.4	710.6	715.1	715.8	670.8	692.9	694.4	695.8	698.6	703.0	703.8
Other hospital and medical care services (12/77 = 100) .....	209.1	219.0	219.3	219.7	221.3	222.5	222.8	207.4	216.8	217.1	217.6	219.0	220.3	220.7
<b>ENTERTAINMENT</b> .....	257.3	263.3	263.6	264.8	265.7	265.7	266.8	257.3	253.4	258.9	260.1	260.9	260.8	261.6
<b>Entertainment commodities</b> .....	254.8	259.5	259.5	260.1	260.8	260.5	262.5	249.2	253.2	253.1	253.9	254.5	254.3	256.0
Reading materials (12/77 = 100) .....	166.3	173.7	173.3	175.5	176.9	175.7	175.7	165.6	172.9	172.6	174.6	175.9	174.8	174.9
Newspapers .....	315.4	325.8	327.5	327.8	328.1	328.2	329.4	315.6	326.1	327.9	328.2	326.4	328.5	329.9
Magazines, periodicals, and books (12/77 = 100) .....	173.0	182.2	181.0	185.3	188.2	185.6	185.0	172.8	182.7	180.8	185.3	188.4	185.6	184.9
Sporting goods and equipment (12/77 = 100) .....	138.7	140.4	139.9	139.4	139.9	140.0	142.4	132.3	133.8	133.2	133.1	133.8	133.7	135.3
Sport vehicles (12/77 = 100) .....	144.4	147.3	146.9	145.6	146.6	146.9	150.7	134.0	136.5	136.0	135.4	136.6	136.8	139.0
Indoor and warm weather sport equipment (12/77 = 100) .....	117.3	118.0	116.8	117.0	117.5	116.9	116.9	115.5	116.1	115.1	115.2	115.8	115.1	115.4
Bicycles .....	198.9	201.4	202.9	204.0	203.4	203.1	203.5	200.3	202.9	204.2	205.7	204.9	204.4	205.0
Other sporting goods and equipment (12/77 = 100) .....	135.5	132.6	130.3	131.1	131.3	130.7	131.5	135.0	131.9	129.8	130.7	130.9	130.0	131.1
Toys, hobbies, and other entertainment (12/77 = 100) .....	142.0	142.6	143.1	143.1	142.8	143.1	144.1	141.1	141.6	142.1	142.1	141.8	142.1	143.1
Toys, hobbies, and music equipment (12/77 = 100) .....	138.3	138.4	138.7	139.1	138.4	138.2	140.2	135.1	135.0	135.2	135.6	135.0	134.8	136.6
Photographic supplies and equipment (12/77 = 100) .....	135.2	135.8	136.4	136.4	136.2	136.3	136.2	136.4	136.9	137.6	137.6	137.4	137.4	137.3
Pet supplies and expenses (12/77 = 100) .....	153.7	155.2	155.9	155.1	155.4	156.9	156.8	154.8	156.3	157.0	156.3	156.6	158.0	158.1
<b>Entertainment services</b> .....	261.3	269.2	269.9	272.0	273.3	273.6	273.3	262.0	269.2	270.0	272.0	273.2	273.3	272.6
Fees for participant sports (12/77 = 100) .....	162.3	167.7	168.3	169.8	170.8	170.7	170.4	163.7	168.5	169.3	170.5	171.2	173.3	170.2
Admissions (12/77 = 100) .....	156.9	160.7	161.5	162.9	163.5	164.1	163.9	155.7	159.7	160.4	162.0	162.7	163.1	162.9
Other entertainment services (12/77 = 100) .....	136.2	140.4	139.9	140.0	140.3	140.7	140.6	137.1	140.8	140.0	140.1	140.5	140.7	140.6
<b>OTHER GOODS AND SERVICES</b> .....	314.6	321.8	322.3	323.0	325.0	326.0	333.3	310.9	318.3	318.8	319.5	321.8	322.9	328.7
<b>Tobacco products</b> .....	314.1	324.0	324.1	324.8	330.0	331.5	332.8	313.7	323.6	323.6	324.4	329.7	331.1	332.4
Cigarettes .....	322.8	332.9	332.9	333.8	339.4	340.9	342.3	321.7	331.7	331.7	332.6	338.2	339.7	341.1
Other tobacco products and smoking accessories (12/77 = 100) .....	159.9	165.5	166.0	165.6	166.8	167.7	167.8	159.9	165.6	166.0	165.6	166.8	167.7	167.7
<b>Personal care</b> .....	273.6	279.8	280.9	281.7	282.3	283.3	284.1	271.6	277.5	278.6	279.2	279.9	280.9	281.8
Toilet goods and personal care appliances .....	271.6	277.1	277.5	277.9	278.9	279.4	280.6	272.5	277.5	277.8	278.2	279.2	280.0	281.1
Products for the hair, hairpieces, and wigs (12/77 = 100) .....	156.1	157.4	156.4	156.1	157.5	158.2	158.8	155.3	156.6	155.7	155.4	156.6	157.3	158.0
Dental and shaving products (12/77 = 100) .....	167.9	176.2	175.3	175.8	176.1	174.7	175.8	165.8	173.8	173.1	173.7	174.0	172.7	173.7
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100) .....	154.5	155.9	157.1	157.2	158.3	159.8	160.1	155.9	156.8	157.8	157.8	158.9	160.6	160.9
Other toilet goods and small personal care appliances (12/77 = 100) .....	155.0	158.3	159.8	160.5	159.8	159.3	160.3	158.7	162.0	163.3	164.0	163.5	163.2	164.2
Personal care services .....	276.4	283.3	285.0	286.1	286.3	287.7	288.2	271.1	278.0	279.7	280.7	280.9	282.2	282.8
Beauty parlor services for women .....	279.2	286.2	288.2	289.5	289.0	290.9	291.6	272.0	279.2	281.1	282.0	281.6	283.4	284.3
Haircuts and other barber shop services for men (12/77 = 100) .....	153.6	157.2	157.2	158.4	159.3	159.5	159.6	152.4	156.0	156.8	157.3	158.2	158.3	158.4
<b>Personal and educational expenses</b> .....	381.9	388.3	388.5	389.1	390.1	390.7	412.5	384.1	390.7	390.9	391.6	392.5	393.2	414.5
Schoolbooks and supplies .....	331.5	344.5	344.5	344.9	345.5	346.1	362.1	336.4	349.4	349.5	349.9	350.6	351.2	366.9
Personal and educational services .....	393.1	398.5	398.8	399.4	400.4	401.1	423.9	395.6	401.0	401.2	401.9	402.9	403.6	426.1
Tuition and other school fees .....	200.2	201.5	201.5	201.6	202.1	202.2	216.6	201.4	202.6	202.6	202.7	203.1	203.2	218.0
College tuition (12/77 = 100) .....	200.1	201.6	201.6	201.8	202.3	202.5	216.8	201.1	202.5	202.5	202.7	203.2	203.3	218.2
Elementary and high school tuition (12/77 = 100) .....	201.1	201.4	201.4	201.4	201.4	201.6	216.2	202.6	202.9	202.9	202.9	202.9	203.2	217.7
Personal expenses (12/77 = 100) .....	207.3	216.5	217.0	218.2	219.0	220.1	220.6	207.9	216.6	216.6	217.8	218.7	220.0	220.5
<b>Special indexes:</b>														
Gasoline, motor oil, coolant, and other products .....	364.3	369.9	377.1	380.1	380.8	377.5	373.3	365.7	371.2	378.3	381.5	382.4	379.2	374.9
Utilities and public transportation .....	367.0	369.9	365.1	371.8	373.7	373.6	375.1	366.1	359.1	363.2	370.6	372.4	372.2	373.7
Housekeeping and home maintenance services .....	373.0	381.8	381.7	382.8	384.0	385.4	385.8	382.3	391.1	391.0	392.3	393.6	395.3	395.6

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

[December 1977 = 100]

Category and group	Size class A (1.25 million or more)			Size class B (385,000-1,250 million)			Size class C (75,000-385,000)			Size class D (75,000 or less)		
	1985			1985			1985			1985		
	Apr.	June	Aug.	Apr.	June	Aug.	Apr.	June	Aug.	Apr.	June	Aug.
<b>Northeast</b>												
<b>EXPENDITURE CATEGORY</b>												
All items	166.7	167.5	168.5	173.5	173.5	173.3	177.8	179.0	178.9	174.2	173.7	173.7
Food and beverages	157.7	157.7	158.1	156.5	155.6	155.7	158.3	159.2	159.1	155.2	154.4	154.6
Housing	171.2	172.6	174.2	186.7	186.4	185.4	193.1	194.7	194.1	185.9	184.0	183.3
Apparel and upkeep	127.6	124.9	128.2	128.7	127.7	123.8	136.9	138.9	132.8	137.4	136.6	135.6
Transportation	174.8	176.0	175.7	178.1	179.0	178.8	177.7	178.5	179.6	177.7	178.9	179.3
Medical care	187.1	189.3	190.6	186.9	188.8	193.3	189.1	191.8	193.6	195.9	198.1	199.4
Entertainment	153.9	154.4	154.4	147.5	149.3	151.5	159.0	159.9	160.4	158.1	158.2	159.7
Other goods and services	181.9	182.4	183.7	179.9	180.9	182.1	185.5	185.6	188.6	183.4	184.1	185.8
<b>COMMODITY AND SERVICE GROUP</b>												
Commodities	157.6	157.4	157.7	163.5	163.0	162.5	162.2	162.9	162.0	160.8	160.4	173.7
Commodities less food and beverages	157.1	156.7	156.9	166.2	166.0	165.1	163.7	164.3	162.9	163.0	162.8	162.2
Services	177.6	179.5	181.2	162.3	189.0	189.2	202.0	204.2	205.2	193.5	192.9	193.2
<b>North Central Region</b>												
<b>EXPENDITURE CATEGORY</b>												
All items	175.9	177.6	178.3	171.7	172.6	171.5	168.6	169.6	169.1	169.1	170.4	170.7
Food and beverages	152.4	152.5	152.3	151.1	150.6	150.2	151.9	151.9	151.0	158.9	158.8	158.7
Housing	194.6	199.3	200.6	180.6	182.5	180.3	175.5	177.7	178.0	171.7	174.2	174.8
Apparel and upkeep	123.9	122.4	123.8	135.6	134.8	132.5	135.7	132.5	128.3	129.4	130.1	129.7
Transportation	176.2	177.1	176.9	177.4	178.2	177.1	179.0	180.7	179.2	178.1	179.0	177.9
Medical care	186.6	187.9	190.0	189.4	191.6	193.6	180.1	180.7	182.5	191.1	193.3	195.8
Entertainment	150.8	150.4	150.7	142.5	143.6	144.2	156.0	155.7	155.3	144.1	144.2	145.4
Other goods and services	176.0	176.7	178.3	188.6	187.9	188.9	169.9	169.9	172.2	186.1	186.1	188.9
<b>COMMODITY AND SERVICE GROUP</b>												
Commodities	161.7	161.7	161.9	160.4	159.9	157.2	157.9	158.5	157.0	158.0	158.3	157.8
Commodities less food and beverages	166.0	166.1	166.5	164.2	163.8	162.2	160.6	161.5	159.7	157.6	158.2	157.3
Services	196.6	200.6	202.0	189.7	192.4	191.4	185.5	187.1	187.9	186.6	189.1	190.7
<b>South</b>												
<b>EXPENDITURE CATEGORY</b>												
All items	172.4	174.1	174.8	173.7	175.3	176.0	172.2	172.8	173.5	171.6	172.2	172.8
Food and beverages	159.9	159.7	159.8	158.9	159.3	159.6	155.7	155.0	156.0	159.9	159.2	160.7
Housing	178.1	181.5	182.5	178.0	181.3	182.3	177.3	178.2	179.2	177.9	178.9	180.2
Apparel and upkeep	138.7	138.5	138.3	132.7	132.2	132.5	130.2	132.0	134.3	113.0	118.3	116.8
Transportation	178.5	179.8	180.2	183.3	184.0	183.7	181.6	182.3	181.5	176.9	177.1	176.2
Medical care	188.1	189.6	192.2	189.3	190.7	193.3	197.1	197.9	201.1	201.0	202.9	203.3
Entertainment	154.4	155.8	156.9	163.5	164.9	165.7	157.5	157.9	157.4	154.7	154.8	155.6
Other goods and services	179.2	179.7	181.4	184.7	186.3	187.5	181.5	182.4	184.0	175.6	178.5	180.7
<b>COMMODITY AND SERVICE GROUP</b>												
Commodities	163.0	162.9	162.6	164.5	164.9	164.7	161.7	161.9	162.2	161.5	161.5	161.7
Commodities less food and beverages	164.1	164.1	163.6	166.7	167.1	166.6	164.4	165.2	165.1	161.6	162.3	161.8
Services	185.2	188.9	190.9	187.3	190.4	192.1	188.2	189.3	190.8	187.0	188.2	189.4
<b>West</b>												
<b>EXPENDITURE CATEGORY</b>												
All items	174.6	176.1	178.0	174.4	176.2	176.9	166.9	168.4	168.9	170.8	172.5	173.3
Food and beverages	158.9	159.0	159.1	162.9	162.4	162.7	168.7	157.7	159.6	166.3	168.4	167.7
Housing	182.4	185.1	190.5	179.2	182.8	183.6	164.2	168.0	168.2	172.2	173.9	174.7
Apparel and upkeep	127.3	127.8	127.3	133.9	133.9	138.6	130.3	127.4	127.2	144.0	144.2	148.2
Transportation	184.2	185.2	182.9	184.5	185.4	184.0	181.7	182.3	181.5	173.9	176.2	176.9
Medical care	193.4	195.5	198.4	190.0	191.9	196.5	198.1	200.9	203.9	193.5	194.5	196.2
Entertainment	149.6	151.7	152.7	156.6	159.9	160.7	165.8	166.9	166.0	159.5	161.2	162.9
Other goods and services	186.5	187.3	189.1	182.6	183.3	184.4	177.8	179.2	182.4	183.7	184.5	184.6
<b>COMMODITY AND SERVICE GROUP</b>												
Commodities	159.9	160.0	158.8	163.9	163.9	163.4	161.7	161.2	161.4	159.5	161.2	161.7
Commodities less food and beverages	160.5	160.6	158.5	164.1	164.5	163.6	162.6	162.4	161.6	155.7	157.3	158.4
Services	193.0	196.1	201.4	188.4	192.0	194.3	172.9	176.4	177.5	187.3	188.9	190.1

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

[1967 = 100 unless otherwise specified]

Area <sup>1</sup>	All Urban Consumers						Urban Wage Earners and Clerical Workers							
	1984	1985					1984	1985						
	Sept.	Apr.	May	June	July	Aug.	Sept.	Sept.	Apr.	May	June	July	Aug.	Sept.
U.S. city average <sup>2</sup>	314.5	320.1	321.3	322.3	322.8	323.5	324.5	312.1	316.7	317.8	318.7	319.1	319.6	320.5
Anchorage, AK (10/67 = 100)	277.9	...	278.8	...	283.1	...	284.5	270.9	...	271.9	...	276.0	...	277.3
Atlanta, GA	...	324.6	...	328.0	...	331.4	...	...	322.3	...	326.0	...	329.3	...
Baltimore, MD	316.4	...	323.1	...	324.0	...	327.5	316.4	...	322.3	...	323.4	...	326.3
Boston, MA	307.4	...	315.2	...	317.7	...	321.3	305.3	...	313.2	...	315.7	...	315.7
Buffalo, NY	294.5	305.4	...	307.3	...	306.5	306.5	288.6	291.9	...	293.7	...	292.9	292.9
Chicago, IL—Northwestern IN	315.1	319.1	319.8	324.1	324.4	325.9	326.3	304.3	306.2	306.9	310.9	311.1	312.1	312.1
Cincinnati, OH—KY—IN	325.2	...	330.4	...	330.0	...	329.8	320.9	...	324.0	...	323.2	...	322.8
Cleveland, OH	...	342.4	...	346.4	...	348.1	...	...	321.8	...	325.3	...	327.0	...
Dallas—Ft. Worth, TX	...	335.6	...	339.6	...	343.4	...	...	329.6	...	333.5	...	337.0	...
Denver—Boulder, CO	351.3	...	356.3	...	360.3	...	358.0	346.1	...	351.9	...	355.9	...	353.3
Detroit, MI	311.6	315.8	316.7	317.0	318.0	318.0	320.5	301.3	306.3	306.6	307.4	308.3	308.3	310.3
Honolulu, HI	...	292.7	...	293.5	...	294.2	...	...	300.1	...	300.4	...	301.3	...
Houston, TX	...	335.3	...	337.6	...	338.2	...	...	332.8	...	335.0	...	335.3	...
Kansas City, MO—KS	...	319.8	...	320.1	...	321.1	...	...	309.7	...	310.5	...	311.2	...
Los Angeles—Long Beach, Anaheim, CA	310.2	315.9	319.1	319.3	321.3	323.9	323.8	304.2	311.2	314.1	314.1	315.8	318.0	317.7
Miami, FL (11/77 = 100)	167.9	...	171.0	...	171.4	...	173.5	169.7	...	172.2	...	172.7	...	174.5
Milwaukee, WI	324.0	...	330.9	...	331.1	...	332.4	347.9	...	350.2	...	350.4	...	351.4
Minneapolis—St. Paul, MN—WI	...	333.6	...	341.4	...	338.8	...	...	329.2	...	332.3	...	334.4	...
New York, NY—Northeastern NJ	306.9	311.8	312.6	313.2	313.5	315.7	316.9	299.9	305.1	305.8	306.3	306.5	308.5	309.3
Northeast, PA (Scranton)	298.2	304.9	...	306.0	306.6	...	306.8	297.7	...	305.2	...	305.7	...	306.3
Philadelphia, PA—NJ	303.9	312.4	314.2	314.2	315.5	315.8	316.5	308.5	315.3	317.2	317.2	318.6	318.5	319.1
Pittsburgh, PA	...	324.3	...	325.9	...	325.9	...	...	306.8	...	308.3	...	308.0	...
Portland, OR—WA	302.5	...	310.4	...	312.9	...	314.9	293.7	...	301.2	...	303.2	...	305.4
St. Louis, MO—IL	311.4	...	315.9	...	319.9	...	321.6	308.0	...	313.0	...	316.6	...	318.5
San Diego, CA	357.1	...	372.1	...	372.8	...	377.3	330.7	...	336.5	...	336.9	...	340.3
San Francisco—Oakland, CA	...	330.4	...	333.2	...	335.8	...	...	326.1	...	328.7	...	330.8	...
Seattle—Everett, WA	316.5	...	321.0	...	322.0	...	321.8	305.3	...	308.4	...	309.1	...	308.9
Washington, DC—MD—VA	313.0	...	319.8	...	323.3	...	323.6	317.9	...	323.0	...	325.9	...	327.4

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

<sup>2</sup>Average of 85 cities.

**23. Producer Price Indexes, by stage of processing**

[1967 = 100]

Commodity grouping	Annual average 1984	1984			1985									
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June <sup>1</sup>	July	Aug.	Sept.	Oct.
<b>FINISHED GOODS</b>														
Finished goods	291.1	291.5	292.3	292.0	292.3	292.6	292.1	293.1	294.1	294.0	294.8	293.5	290.2	294.8
Finished consumer goods	290.3	290.3	291.2	290.9	290.6	290.7	290.1	291.2	292.4	<sup>r</sup> 292.2	293.2	291.5	288.5	292.4
Finished consumer foods	273.3	271.1	272.0	273.6	273.7	275.6	273.7	272.2	269.5	<sup>r</sup> 268.7	271.7	269.5	266.5	268.7
Crude	281.6	269.5	257.6	263.0	255.4	279.4	275.5	279.9	254.2	<sup>r</sup> 237.0	265.4	255.8	249.1	247.3
Processed	270.3	269.1	271.0	272.3	273.1	273.1	271.3	269.3	268.7	<sup>r</sup> 269.3	270.1	268.5	265.9	268.4
Nondurable goods less foods	337.3	337.8	338.9	336.7	334.9	332.7	333.4	337.4	342.4	<sup>r</sup> 342.1	342.1	339.9	340.3	340.2
Durable goods	236.8	238.3	239.0	239.2	240.2	240.9	240.4	240.7	241.4	<sup>r</sup> 241.9	241.7	241.5	234.4	244.9
Consumer nondurable goods less food and energy	239.0	240.6	241.1	240.7	242.8	243.9	244.4	245.0	245.2	<sup>r</sup> 245.6	247.4	247.2	247.8	248.2
Capital equipment	294.0	295.9	296.5	295.6	298.5	299.2	299.3	299.9	300.3	<sup>r</sup> 300.5	300.8	300.9	296.4	303.7
<b>INTERMEDIATE MATERIALS</b>														
Intermediate materials, supplies, and components	320.0	320.1	320.4	319.9	319.6	318.7	318.6	319.3	319.9	<sup>r</sup> 319.3	318.6	317.8	317.9	317.8
Materials and components for manufacturing	301.8	301.4	301.7	301.1	300.6	300.5	300.0	300.6	300.5	<sup>r</sup> 300.3	299.7	298.8	298.3	298.0
Materials for food manufacturing	271.1	267.6	269.5	268.2	265.2	265.3	263.9	263.9	261.9	<sup>r</sup> 261.0	260.6	253.4	250.2	252.3
Materials for nondurable manufacturing	290.5	290.4	289.8	289.2	288.9	288.0	287.3	287.1	296.7	<sup>r</sup> 286.4	285.7	285.2	284.8	283.6
Materials for durable manufacturing	325.1	322.3	323.1	321.9	320.6	320.7	319.9	322.1	323.0	<sup>r</sup> 322.3	321.0	320.2	319.2	318.6
Components for manufacturing	287.5	289.4	289.7	289.9	290.4	290.8	291.0	291.1	291.1	<sup>r</sup> 291.3	291.5	291.7	292.0	292.2
Materials and components for construction	310.3	311.8	311.8	312.4	313.4	313.3	313.5	314.0	315.9	317.3	317.0	316.4	315.5	315.4
Processed fuels and lubricants	566.2	564.1	566.6	561.3	556.3	546.3	547.9	552.3	559.0	<sup>r</sup> 549.1	544.1	541.2	546.3	544.9
Manufacturing industries	483.5	483.4	486.1	483.0	478.7	469.7	471.8	474.6	477.3	<sup>r</sup> 462.2	459.7	458.5	460.2	461.1
Nonmanufacturing industries	638.1	634.3	636.5	629.2	623.5	612.6	613.9	619.8	628.1	<sup>r</sup> 625.4	618.2	613.9	621.9	618.7
Containers	302.3	308.8	310.1	310.4	311.1	311.8	313.1	312.4	311.7	<sup>r</sup> 312.0	311.4	309.7	309.9	310.4
Supplies	283.4	283.2	282.9	283.1	283.9	283.8	283.8	283.7	283.4	<sup>r</sup> 283.3	283.6	283.8	284.3	285.0
Manufacturing industries	279.0	281.5	281.7	282.2	283.5	283.7	284.4	284.7	285.0	<sup>r</sup> 285.3	285.3	285.5	286.0	286.1
Nonmanufacturing industries	285.9	284.4	283.8	283.8	284.5	284.1	283.7	283.4	282.8	<sup>r</sup> 282.4	283.0	283.2	283.7	284.7
Feeds	215.8	195.4	192.4	191.1	190.1	185.6	180.7	176.9	172.4	<sup>r</sup> 170.9	173.0	172.9	174.8	179.5
Other supplies	300.6	302.7	302.6	302.8	303.8	304.2	304.7	305.1	305.2	<sup>r</sup> 305.0	305.3	305.5	305.8	306.1
<b>CRUDE MATERIALS</b>														
Crude materials for further processing	330.8	319.6	323.2	322.4	318.9	318.1	312.3	311.0	309.1	<sup>r</sup> 305.6	303.7	295.5	292.4	298.0
Foodstuffs and feedstuffs	259.5	244.9	252.8	253.0	250.7	250.0	242.9	239.9	236.3	<sup>r</sup> 233.7	231.9	221.4	215.9	224.5
Nonfood materials	484.5	480.3	475.2	472.0	466.0	465.1	462.0	464.2	466.0	<sup>r</sup> 460.5	458.1	454.5	456.4	455.8
Nonfood materials except fuel	380.5	374.7	369.2	366.4	361.9	358.2	358.4	360.2	357.7	<sup>r</sup> 354.0	353.6	351.3	352.5	353.3
Manufacturing industries	390.1	383.9	377.6	374.4	368.9	364.0	364.2	365.9	363.0	<sup>r</sup> 358.7	358.3	355.7	357.2	357.9
Construction	278.7	276.3	276.3	276.4	279.7	283.9	284.7	287.0	287.1	<sup>r</sup> 288.1	287.6	287.2	286.1	287.9
Crude fuel	931.3	935.9	934.0	929.8	916.6	930.5	910.8	915.0	938.8	<sup>r</sup> 924.8	912.4	902.8	908.1	899.6
Manufacturing industries	1,092.2	1,097.6	1,095.1	1,089.7	1,072.2	1,090.4	1,064.5	1,070.2	1,101.7	<sup>r</sup> 1,083.3	1,067.0	1,054.2	1,060.0	1,049.8
Nonmanufacturing industries	818.1	822.1	820.7	817.3	807.5	818.2	803.2	806.3	824.0	<sup>r</sup> 813.5	804.2	797.0	802.0	794.8
<b>SPECIAL GROUPINGS</b>														
Finished goods excluding foods	294.8	296.1	296.9	295.8	296.3	295.9	296.0	297.8	300.3	<sup>r</sup> 300.2	300.3	299.3	296.0	301.4
Finished consumer goods excluding foods	294.1	295.0	295.9	294.8	294.3	293.5	293.6	295.9	299.0	<sup>r</sup> 299.0	299.0	297.6	294.7	299.4
Finished consumer goods less energy	257.8	258.2	258.9	259.3	260.5	261.8	261.1	260.9	260.3	<sup>r</sup> 260.3	262.0	261.0	257.9	262.2
Intermediate materials less foods and feeds	325.0	325.8	326.1	325.6	325.4	324.5	324.7	325.5	326.4	<sup>r</sup> 325.7	324.9	324.4	324.6	324.3
Intermediate materials less energy	303.8	304.1	304.3	304.1	304.2	304.2	304.0	304.3	304.5	<sup>r</sup> 304.6	304.3	303.6	303.3	303.3
Intermediate foods and feeds	253.1	244.0	244.3	243.0	240.7	239.2	236.7	235.4	232.6	<sup>r</sup> 232.2	231.9	227.0	225.5	228.5
Crude materials less agricultural products	547.0	542.4	535.9	532.3	525.4	525.1	521.2	523.5	526.3	<sup>r</sup> 519.9	516.8	514.4	515.5	514.8
Crude materials less energy	255.5	242.6	248.0	247.8	246.2	245.9	240.4	238.6	234.8	<sup>r</sup> 231.7	230.4	222.1	218.3	224.8

<sup>1</sup>Data for June 1985 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

## 24. Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1984	1984			1985									
			Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June <sup>1</sup>	July	Aug.	Sept.	Oct.
	All commodities	310.3	309.4	310.3	309.8	309.7	309.1	308.6	309.3	309.8	309.2	309.0	307.2	305.8	308.0
	All commodities (1957-59 = 100)	329.2	328.3	329.2	328.7	328.6	328.0	327.4	328.2	328.7	328.1	327.8	325.9	324.5	326.8
	Farm products and processed foods and feeds	262.4	255.3	258.1	258.6	257.6	258.0	254.6	253.1	250.2	249.1	250.0	244.4	241.4	245.3
	Industrial commodities	322.6	323.4	323.8	323.0	323.1	322.2	322.5	323.8	325.3	324.8	324.3	323.6	322.5	324.4
	<b>FARM PRODUCTS AND PROCESSED FOODS AND FEEDS</b>														
01	Farm products	255.8	240.2	245.7	245.7	243.2	245.3	238.8	236.8	230.4	229.4	229.2	218.0	212.9	219.5
01-1	Fresh and dried fruits and vegetables	278.1	267.3	251.2	252.0	259.0	289.6	278.1	278.1	251.2	254.3	275.4	260.9	239.3	233.5
01-2	Grains	239.7	219.0	219.7	212.5	217.5	217.2	216.1	220.6	214.1	212.7	204.9	185.1	181.1	176.3
01-3	Livestock	251.8	233.9	247.7	252.3	247.4	249.7	236.6	231.3	227.7	226.7	224.0	211.6	198.5	226.2
01-4	Live poultry	240.6	219.2	247.1	231.7	232.7	222.4	215.5	202.3	214.6	223.6	227.6	216.0	244.5	225.2
01-5	Plant and animal fibers	228.4	202.8	201.4	203.0	204.5	200.6	200.4	211.3	202.8	199.1	201.7	194.5	191.1	191.3
01-6	Fluid milk	278.3	286.7	287.6	287.5	284.6	281.0	278.4	271.1	264.9	259.6	256.1	255.1	255.9	256.0
01-7	Eggs	210.8	179.9	176.0	187.5	141.9	161.5	167.6	175.1	150.2	147.7	164.0	168.9	188.3	191.1
01-8	Hay, hayseeds, and oilseeds	256.3	219.1	227.3	227.4	226.2	214.6	212.0	213.8	213.4	210.7	206.8	196.7	194.2	184.7
01-9	Other farm products	285.6	294.0	297.9	293.8	289.4	285.6	285.8	283.9	283.5	283.4	283.3	274.5	282.8	282.5
02	Processed foods and feeds	265.0	262.6	263.8	264.5	264.4	263.9	262.3	260.9	260.6	258.8	260.3	257.9	256.0	258.4
02-1	Cereal and bakery products	270.5	272.7	273.7	273.6	276.6	277.7	277.8	278.9	278.0	279.9	279.2	279.9	280.4	282.2
02-2	Meats, poultry, and fish	254.4	245.5	250.4	255.9	256.6	255.6	249.8	244.8	244.0	238.6	245.9	240.9	236.5	245.0
02-3	Dairy products	251.7	256.4	257.3	255.8	255.3	254.0	253.3	251.5	250.0	249.4	248.0	247.5	246.2	245.5
02-4	Processed fruits and vegetables	294.3	295.8	292.3	293.5	296.6	296.6	300.0	298.6	298.2	301.0	299.1	301.0	296.4	294.7
02-5	Sugar and confectionery	301.2	299.8	297.0	295.7	293.5	291.1	292.5	293.4	294.4	294.4	293.9	292.2	290.6	286.6
02-6	Beverages and beverage materials	273.1	276.1	276.0	275.6	275.9	277.5	277.1	276.9	276.9	275.5	276.4	275.6	276.7	277.5
02-7	Fats and oils	301.3	301.6	311.9	297.6	280.5	285.2	290.5	303.0	296.1	296.5	282.2	252.4	243.8	236.0
02-8	Miscellaneous processed foods	278.0	281.2	280.9	281.0	281.5	281.4	281.4	282.0	283.5	283.6	284.9	287.1	284.9	285.1
02-9	Prepared animal feeds	220.5	202.4	199.7	198.8	198.0	193.6	189.5	186.2	182.4	183.9	185.9	186.1	188.0	192.2
	<b>INDUSTRIAL COMMODITIES</b>														
03	Textile products and apparel	210.0	210.4	210.2	210.0	210.3	210.6	210.5	210.7	210.5	210.2	210.2	210.3	210.6	210.2
03-1	Synthetic fibers (12/75 = 100)	159.6	158.2	157.5	157.7	157.6	157.5	156.5	157.4	157.1	156.3	156.1	155.0	154.6	150.1
03-2	Processed yarns and threads (12/75 = 100)	142.8	141.4	140.8	140.8	141.4	141.9	141.4	141.3	141.4	141.2	141.4	141.1	140.7	140.8
03-3	Gray fabrics (12/75 = 100)	153.7	154.8	153.7	154.0	153.8	152.6	152.1	151.8	152.1	151.7	151.5	150.2	150.5	150.8
03-4	Finished fabrics (12/75 = 100)	126.7	126.9	126.6	126.6	126.6	127.0	127.1	127.2	125.9	125.6	125.5	125.9	126.1	126.2
03-81	Apparel	201.3	201.9	202.2	202.1	202.7	203.2	203.3	203.7	203.8	203.9	204.1	204.7	205.1	205.1
03-82	Textile housefurnishings	238.9	241.3	241.4	238.3	239.5	240.8	241.3	241.1	241.2	239.6	240.0	239.9	240.2	240.4
04	Hides, skins, leather, and related products	286.3	287.7	283.8	283.6	283.7	283.7	282.4	284.7	284.2	285.5	284.5	286.0	287.0	289.4
04-2	Leather	372.3	369.3	359.8	354.5	358.1	352.5	348.5	350.3	350.5	349.2	347.5	348.3	349.7	356.5
04-3	Footwear	251.7	252.1	252.4	252.6	252.8	255.9	255.2	255.1	253.8	257.1	257.2	258.5	259.3	259.6
04-4	Other leather and related products	263.6	268.1	267.9	266.9	270.0	270.3	272.3	272.6	272.8	273.3	273.0	272.8	273.1	274.8
05	Fuels and related products and power	656.8	654.4	655.3	648.5	636.8	625.3	625.3	633.9	647.3	640.6	634.5	628.2	631.2	629.2
05-1	Coal	546.5	548.9	548.6	547.7	548.0	549.6	548.8	547.7	548.3	547.4	546.7	546.7	551.1	547.0
05-2	Coke	436.4	432.4	432.8	435.1	439.7	439.4	433.0	430.1	429.6	429.1	428.6	428.6	428.6	427.1
05-3	Gas fuels <sup>3</sup>	1,109.0	1,112.5	1,113.4	1,103.1	1,073.0	1,067.2	1,043.6	1,049.3	1,078.7	1,058.1	1,042.4	1,026.1	1,035.9	1,032.2
05-4	Electric power	439.9	445.4	443.0	440.8	446.0	446.0	447.6	449.1	447.9	460.1	462.5	463.7	462.4	455.9
05-61	Crude petroleum <sup>4</sup>	669.8	669.8	655.8	649.4	631.2	615.1	615.5	617.6	620.9	620.1	619.4	614.3	615.7	618.3
05-7	Petroleum products, refined <sup>5</sup>	665.1	655.5	661.5	652.3	635.5	615.6	620.6	636.5	657.6	641.5	630.7	621.8	626.2	627.5
06	Chemicals and allied products	300.8	301.3	301.6	300.7	301.6	302.2	302.6	303.3	303.2	303.7	303.7	303.7	303.3	302.8
06-1	Industrial chemicals <sup>6</sup>	341.3	335.9	334.7	334.8	336.8	336.7	336.7	336.0	336.5	339.5	336.9	340.7	339.5	337.9
06-21	Prepared paint	272.5	277.8	277.1	277.8	278.2	274.7	275.1	276.0	276.2	276.4	278.5	277.1	276.8	277.6
06-22	Paint materials	329.7	332.5	334.3	334.7	332.6	333.4	334.5	335.5	337.2	338.0	335.5	337.5	334.8	334.3
06-3	Drugs and pharmaceuticals	240.0	244.7	246.9	245.0	247.4	250.3	252.2	254.1	255.7	254.2	259.2	258.6	258.9	259.7
06-4	Fats and oils, inedible	371.4	365.1	380.1	376.7	346.2	347.1	346.3	348.9	331.1	298.4	280.2	257.9	243.9	249.5
06-5	Agricultural chemicals and chemical products	284.8	285.5	282.5	282.5	282.7	281.7	281.8	282.8	283.1	281.7	281.5	281.3	281.3	280.3
06-6	Plastic resins and materials	308.6	309.4	309.0	306.2	305.2	306.9	306.3	306.1	305.4	307.1	308.0	305.2	305.4	300.6
06-7	Other chemicals and allied products	277.5	279.7	281.3	280.1	282.0	282.8	283.0	284.6	283.4	284.7	284.5	283.5	294.1	285.0
07	Rubber plastic products	246.8	246.6	246.1	245.9	246.7	246.4	246.5	246.6	246.4	246.2	246.3	244.6	244.5	245.3
07-1	Rubber and rubber products	266.1	264.8	263.9	263.7	264.3	265.4	265.0	264.8	265.0	264.4	265.3	263.8	263.8	264.1
07-11	Crude rubber	276.8	271.2	270.4	272.1	275.5	273.3	270.5	269.5	268.0	270.9	270.9	269.8	270.8	270.9
07-12	Tires and tubes	242.1	239.2	238.3	237.1	238.4	239.5	238.9	238.7	239.1	237.2	238.4	236.7	236.6	236.2
07-13	Miscellaneous rubber products	290.6	292.9	291.8	292.5	291.1	293.2	294.0	294.1	294.7	294.5	295.4	294.0	293.8	295.2
07-2	Plastic products (6/78 = 100)	139.5	140.1	140.0	139.8	140.4	139.4	139.7	140.1	139.7	139.8	139.4	138.2	138.2	138.9
08	Lumber and wood products	307.4	300.3	301.0	303.0	304.4	303.4	303.1	301.5	306.8	313.1	310.5	305.8	300.5	300.1
08-1	Lumber	349.8	334.3	336.6	339.5	343.0	343.0	343.9	339.8	349.5	363.1	354.9	342.4	332.4	328.2
08-2	Millwork	307.8	307.0	309.5	311.6	312.6	311.6	310.2	309.5	310.5	311.8	314.0	313.9	313.3	312.5
08-3	Plywood	241.6	240.1	234.9	234.2	234.2	226.5	223.6	222.8	232.2	237.2	237.6	237.8	230.1	234.2
08-4	Other wood products	234.5	236.6	236.5	237.9	237.9	237.7	238.6	239.1	236.5	236.0	235.9	234.6	234.9	235.6

See footnotes at end of table.

**24. Continued—Producer Price Indexes, by commodity groupings**

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1984	1984			1985										
			Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June <sup>1</sup>	July	Aug.	Sept.	Oct.	
<b>INDUSTRIAL COMMODITIES—Continued</b>																
09	Pulp, paper, and allied products . . . . .	318.5	323.1	324.1	324.1	327.1	327.6	327.7	327.6	327.3	<sup>r</sup> 327.1	327.2	326.5	326.9	327.4	
09-1	Pulp, paper, and products, excluding building paper and board . . . . .	293.3	299.3	299.7	298.9	298.1	297.1	295.7	294.4	293.4	<sup>r</sup> 292.3	291.9	289.8	289.2	288.8	
09-11	Woodpulp . . . . .	397.2	408.2	397.3	392.1	381.2	364.8	353.6	348.2	345.9	<sup>r</sup> 348.0	345.5	338.4	337.0	337.7	
09-12	Wastepaper . . . . .	240.1	235.6	221.4	206.0	190.8	192.6	170.2	154.4	144.0	<sup>r</sup> 141.6	141.4	141.4	129.5	126.8	
09-13	Paper . . . . .	302.9	306.7	306.9	305.7	306.3	304.4	303.5	303.3	304.5	<sup>r</sup> 304.5	304.0	303.7	303.3	301.4	
09-14	Paperboard . . . . .	281.5	293.7	294.3	293.4	287.2	285.9	285.7	284.2	280.4	<sup>r</sup> 273.7	273.2	266.3	266.6	265.9	
09-15	Converted paper and paperboard products . . . . .	281.2	286.9	289.0	289.3	290.4	291.4	291.0	290.3	289.1	<sup>r</sup> 288.2	288.3	286.7	286.2	286.5	
09-2	Building paper and board . . . . .	259.0	257.7	253.7	253.4	255.3	256.2	256.3	257.6	258.6	<sup>r</sup> 259.8	263.3	261.0	262.8	256.2	
10	Metals and metal products . . . . .	316.1	316.0	316.4	315.5	315.0	315.6	315.4	316.8	316.4	<sup>r</sup> 314.9	314.6	314.9	314.5	314.3	
10-1	Iron and steel . . . . .	356.9	358.4	357.7	357.1	357.1	357.4	357.8	357.4	356.0	<sup>r</sup> 354.5	354.6	355.0	354.8	354.6	
10-17	Steel mill products . . . . .	366.0	368.6	368.0	367.9	367.3	367.3	366.9	367.0	367.0	<sup>r</sup> 366.1	366.1	365.7	365.6	365.7	
10-2	Nonferrous metals . . . . .	277.1	266.8	269.4	266.0	263.3	264.9	262.7	268.4	268.1	<sup>r</sup> 263.7	261.3	261.2	260.6	259.7	
10-3	Metal containers . . . . .	350.0	357.4	357.4	357.2	357.4	357.9	357.9	357.9	358.0	<sup>r</sup> 358.0	258.1	357.9	357.7	357.7	
10-4	Hardware . . . . .	296.9	299.9	299.9	300.9	302.6	303.2	304.8	305.7	305.7	<sup>r</sup> 305.7	305.2	306.1	305.7	306.5	
10-5	Plumbing fixtures and brass fittings . . . . .	302.7	306.2	309.2	309.3	306.4	306.8	307.8	311.3	312.5	<sup>r</sup> 313.0	313.1	313.1	313.6	314.8	
10-6	Heating equipment . . . . .	252.9	256.1	256.0	256.4	256.3	257.3	257.6	257.9	259.5	<sup>r</sup> 259.6	260.5	261.1	261.5	261.5	
10-7	Fabricated structural metal products . . . . .	310.7	313.8	312.7	313.2	313.5	313.5	314.5	314.6	314.7	<sup>r</sup> 314.5	314.6	315.1	315.1	315.5	
10-8	Miscellaneous metal products . . . . .	292.3	301.5	301.6	301.8	301.8	302.2	302.0	302.1	302.2	<sup>r</sup> 302.6	303.0	303.0	303.0	302.3	
11	Machinery and equipment . . . . .	293.1	294.8	295.3	295.6	297.9	297.6	297.8	298.1	298.4	<sup>r</sup> 298.9	299.1	299.4	299.9	299.8	
11-1	Agricultural machinery and equipment . . . . .	336.1	337.3	337.0	337.6	338.5	338.3	338.5	338.3	338.5	<sup>r</sup> 338.7	339.0	338.4	337.4	337.4	
11-2	Construction machinery and equipment . . . . .	357.0	357.5	357.6	357.8	378.6	363.2	362.5	361.7	361.9	<sup>r</sup> 362.0	362.3	362.5	362.8	363.1	
11-3	Metalworking machinery and equipment . . . . .	334.0	337.1	338.1	338.7	338.6	339.4	340.1	340.9	341.3	<sup>r</sup> 341.7	342.4	343.6	343.8	343.6	
11-4	General purpose machinery and equipment . . . . .	314.1	316.0	316.5	316.9	318.3	318.9	319.8	320.5	321.2	<sup>r</sup> 321.7	322.2	322.4	322.5	322.5	
11-6	Special industry machinery and equipment . . . . .	348.7	351.5	351.8	352.4	355.7	357.1	357.6	358.4	358.9	<sup>r</sup> 359.9	360.6	361.2	361.7	362.5	
11-7	Electrical machinery and equipment . . . . .	248.7	250.8	251.5	251.7	253.0	253.7	253.7	253.2	253.6	<sup>r</sup> 253.4	253.3	253.5	253.9	253.9	
11-9	Miscellaneous machinery . . . . .	274.4	274.4	274.8	274.5	275.0	275.4	275.5	276.6	276.4	<sup>r</sup> 277.9	277.9	277.9	279.6	278.9	
12	Furniture and household durables . . . . .	218.7	219.2	220.0	220.1	220.3	220.8	221.1	221.7	221.7	<sup>r</sup> 221.6	221.7	221.8	222.3	222.0	
12-1	Household furniture . . . . .	242.1	244.3	245.1	245.5	246.9	247.4	247.6	248.8	250.1	<sup>r</sup> 250.4	249.6	250.3	250.5	250.6	
12-2	Commercial furniture . . . . .	297.1	297.3	300.7	299.6	300.3	302.8	303.7	306.3	307.0	<sup>r</sup> 307.7	308.6	309.3	311.6	311.2	
12-3	Floor coverings . . . . .	191.2	193.0	192.9	193.2	193.7	192.4	192.8	192.9	191.5	<sup>r</sup> 199.8	191.2	191.4	191.9	188.7	
12-4	Household appliances . . . . .	211.0	211.1	210.9	211.3	211.2	211.2	211.7	212.1	212.4	<sup>r</sup> 212.7	213.0	213.3	213.1	212.9	
12-5	Home electronic equipment . . . . .	83.8	83.1	83.1	82.7	80.8	81.9	81.0	80.9	79.9	<sup>r</sup> 79.4	79.1	78.6	79.6	79.6	
12-6	Other household durable goods . . . . .	318.6	317.7	320.5	320.7	322.5	322.7	324.1	323.8	323.3	<sup>r</sup> 323.6	323.1	322.0	321.7	323.6	
13	Nonmetallic mineral products . . . . .	337.3	340.0	339.6	340.1	341.7	342.6	343.9	345.5	348.1	<sup>r</sup> 349.3	348.7	349.7	349.8	350.4	
13-11	Flat glass . . . . .	224.5	219.9	218.5	218.6	221.3	220.9	220.9	222.5	224.9	<sup>r</sup> 224.8	222.8	226.4	225.5	228.4	
13-2	Concrete ingredients . . . . .	325.7	327.6	328.5	329.6	331.0	333.5	335.4	336.4	338.8	<sup>r</sup> 338.8	338.2	338.6	336.9	336.8	
13-3	Concrete products . . . . .	309.6	312.0	311.8	312.2	314.6	314.6	315.8	316.7	320.2	<sup>r</sup> 321.4	321.1	322.7	323.3	323.2	
13-4	Structural clay products, excluding refractories . . . . .	286.8	289.5	289.6	289.7	291.3	291.6	291.8	292.4	292.8	<sup>r</sup> 297.0	295.8	296.8	297.0	299.6	
13-5	Refractories . . . . .	361.2	361.6	365.6	365.6	365.9	365.9	366.9	369.0	371.3	<sup>r</sup> 371.3	372.2	372.2	372.2	372.2	
13-6	Asphalt roofing . . . . .	399.5	409.1	410.1	412.1	409.6	407.5	406.1	411.9	412.5	<sup>r</sup> 410.5	411.5	408.3	406.3	404.1	
13-7	Gypsum products . . . . .	346.7	339.0	334.4	330.6	328.6	344.3	336.4	333.4	333.0	<sup>r</sup> 338.1	338.6	338.1	329.6	339.6	
13-8	Glass containers . . . . .	360.7	364.9	364.2	364.2	363.7	364.6	373.9	374.3	376.7	<sup>r</sup> 381.8	378.4	381.5	386.9	387.1	
13-9	Other nonmetallic minerals . . . . .	500.1	508.9	505.8	507.3	514.2	514.1	514.1	519.0	523.0	<sup>r</sup> 523.6	524.4	523.8	524.4	524.7	
14	Transportation equipment (12/68 = 100) . . . . .	262.7	265.0	265.7	265.0	266.8	268.1	267.7	268.2	269.1	<sup>r</sup> 269.3	270.0	270.1	260.1	275.5	
14-1	Motor vehicles and equipment . . . . .	261.5	263.8	264.3	263.5	265.2	266.7	266.2	266.2	267.3	<sup>r</sup> 267.5	267.6	267.7	254.7	273.5	
14-4	Railroad equipment . . . . .	355.6	358.8	358.9	358.9	359.9	361.8	362.7	362.9	362.6	<sup>r</sup> 363.9	362.7	364.6	364.6	364.3	
15	Miscellaneous products . . . . .	295.9	296.5	296.5	296.7	299.2	300.7	300.6	301.6	301.4	<sup>r</sup> 301.3	303.1	302.9	303.2	303.7	
15-1	Toys, sporting goods, small arms, ammunition . . . . .	227.1	227.4	227.6	227.7	228.0	231.0	231.3	231.2	231.1	<sup>r</sup> 231.0	229.9	229.8	230.4	232.3	
15-2	Tobacco products . . . . .	398.4	402.3	402.7	402.9	420.1	420.6	420.7	420.7	420.7	<sup>r</sup> 420.8	435.9	436.0	436.0	435.8	
15-3	Notions . . . . .	283.2	283.5	283.5	283.6	283.6	284.1	284.1	285.6	285.6	<sup>r</sup> 285.6	285.6	285.4	285.4	285.3	
15-4	Photographic equipment and supplies . . . . .	214.6	216.5	212.9	213.2	213.6	213.7	215.8	215.8	215.8	<sup>r</sup> 215.8	215.8	215.8	216.7	216.8	
15-5	Mobile homes (12/74 = 100) . . . . .	163.3	163.6	164.4	164.3	164.3	164.4	164.2	164.3	164.3	<sup>r</sup> 164.7	164.7	165.0	165.1	165.2	
15-9	Other miscellaneous products . . . . .	350.5	348.5	349.6	350.1	347.2	350.7	348.5	352.4	351.6	<sup>r</sup> 350.9	349.3	348.3	347.9	348.3	

<sup>1</sup>Data for June 1985 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

<sup>5</sup>Most prices for refined petroleum products are lagged 1 month.

<sup>6</sup>Some prices for industrial chemicals are lagged 1 month.

<sup>2</sup>Not available.

<sup>3</sup>Prices for natural gas are lagged 1 month.

<sup>4</sup>Includes only domestic production.

r = revised.

## 25. Producer Price Indexes, for special commodity groupings

[1967 = 100 unless otherwise specified]

Commodity grouping	Annual average 1984	1984			1985									
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June <sup>1</sup>	July	Aug.	Sept.	Oct.
All commodities—less farm products	313.8	314.2	314.7	314.1	314.2	313.4	313.4	314.3	315.4	<sup>r</sup> 314.7	314.6	313.6	312.4	314.4
All foods	269.2	266.6	267.3	268.5	267.8	269.7	267.7	266.8	263.8	<sup>r</sup> 262.4	265.5	262.2	258.8	260.6
Processed foods	269.8	268.3	270.3	271.2	271.1	270.7	269.2	268.0	267.1	<sup>r</sup> 265.5	267.0	264.2	261.5	263.7
Industrial commodities less fuels	287.6	288.7	289.1	288.9	290.2	290.6	290.7	291.2	291.5	<sup>r</sup> 291.6	291.7	291.6	290.1	292.3
Selected textile mill products (12/75 = 100)	142.2	142.9	142.8	142.3	142.3	142.6	142.7	142.8	141.9	<sup>r</sup> 141.5	141.6	142.2	142.2	141.9
Hosiery	147.6	148.1	148.1	148.0	148.1	148.4	148.7	148.9	148.8	<sup>r</sup> 148.8	149.2	149.5	149.4	149.1
Underwear and nightwear	230.0	230.6	230.5	230.3	232.5	232.7	233.3	234.7	234.1	<sup>r</sup> 234.8	234.4	237.9	237.9	238.5
Chemicals and allied products, including synthetic rubber and fibers and yarns	289.7	290.0	290.0	289.4	290.6	291.1	291.3	292.0	292.1	<sup>r</sup> 292.9	293.1	293.2	293.0	292.0
Pharmaceutical preparations	243.1	249.7	251.9	250.0	253.4	256.0	258.4	260.1	261.9	<sup>r</sup> 260.6	266.4	265.9	266.5	267.4
Lumber and wood products, excluding millwork	318.5	307.6	307.4	309.6	311.5	308.8	308.5	305.4	315.1	<sup>r</sup> 326.1	320.7	312.4	303.0	301.6
Steel mill products, including fabricated wire products	363.7	366.5	365.9	365.8	365.2	365.2	364.8	365.0	365.2	<sup>r</sup> 364.4	364.4	364.1	363.9	364.0
Finished steel mill products, excluding fabricated wire products	365.5	368.1	367.5	367.4	366.8	366.7	366.3	366.4	366.4	<sup>r</sup> 365.5	365.7	365.3	365.2	365.2
Finished steel mill products, including fabricated wire products	363.0	365.7	365.2	365.1	364.5	364.5	364.1	364.3	364.5	<sup>r</sup> 363.7	363.8	363.4	363.3	363.4
Special metals and metal products	300.0	301.0	301.3	300.5	300.9	301.9	301.6	302.4	302.7	<sup>r</sup> 301.9	301.8	301.9	296.4	303.9
Fabricated metal products	304.1	308.7	308.5	308.9	309.1	309.4	309.8	310.1	310.3	<sup>r</sup> 310.4	310.6	311.0	310.7	310.9
Copper and copper products	186.0	178.1	183.0	180.1	179.3	184.8	182.1	188.6	189.0	<sup>r</sup> 183.8	182.6	184.0	184.1	183.5
Machinery and motive products	286.3	288.4	289.0	288.8	291.0	291.4	291.3	291.7	292.3	<sup>r</sup> 292.7	293.1	293.3	288.9	296.1
Machinery and equipment, except electrical	319.3	320.9	321.3	321.6	324.5	323.7	324.0	324.6	325.0	<sup>r</sup> 325.8	326.2	326.4	327.0	326.9
Agricultural machinery, including tractors	353.6	354.8	354.0	354.8	355.9	355.5	355.7	355.5	355.8	<sup>r</sup> 355.9	356.3	355.5	354.1	353.9
Metalworking machinery	364.9	368.8	370.4	371.4	370.3	371.6	373.3	374.2	374.5	<sup>r</sup> 375.2	376.4	376.3	376.9	375.6
Total tractors	381.5	381.0	379.5	379.7	385.2	384.4	382.8	382.6	382.8	<sup>r</sup> 383.0	383.4	382.6	380.3	381.2
Agricultural machinery and equipment less parts	341.0	342.0	341.5	342.3	343.3	343.0	343.3	342.9	343.4	<sup>r</sup> 343.5	343.8	343.1	341.9	341.8
Farm and garden tractors less parts	360.4	359.9	357.6	358.0	360.4	359.0	359.6	359.2	359.5	<sup>r</sup> 359.9	360.4	359.2	355.8	357.2
Agricultural machinery, excluding tractors less parts	348.5	350.8	351.3	352.5	352.4	352.9	352.7	352.7	353.0	<sup>r</sup> 352.9	353.3	352.8	353.0	351.4
Construction materials	306.4	307.2	307.0	307.7	308.5	308.3	308.4	308.7	310.8	<sup>r</sup> 312.5	312.0	311.0	309.6	309.6

<sup>1</sup>Data for June 1985 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication. r = revised.

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

[1967 = 100]

Commodity grouping	Annual average 1984	1984			1985										
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June <sup>1</sup>	July	Aug.	Sept.	Oct.	
Total durable goods	293.6	294.4	294.9	294.8	295.8	296.4	296.3	297.1	297.6	297.8	297.7	297.7	297.7	295.3	298.8
Total nondurable goods	323.3	320.9	322.1	321.3	320.1	319.0	317.7	318.4	318.9	317.5	317.3	314.1	313.4	314.6	
Total manufactures	302.9	303.2	303.9	303.5	303.9	303.4	303.3	304.2	305.2	304.8	304.6	303.7	302.3	304.6	
Durable	293.9	295.1	295.6	295.5	296.5	297.0	296.9	297.6	298.4	298.7	298.6	298.5	296.1	299.7	
Nondurable	312.3	311.6	312.5	311.7	311.4	309.9	309.9	310.8	312.1	311.0	310.7	308.9	308.7	309.4	
Total raw or slightly processed goods	346.6	339.1	341.0	339.8	336.7	336.8	332.2	332.1	329.8	327.3	327.4	320.6	318.5	320.9	
Durable	266.7	255.9	254.2	252.2	256.0	259.2	261.2	262.1	255.4	247.3	247.6	249.9	249.7	248.8	
Nondurable	351.4	344.2	346.3	345.1	341.5	341.4	336.4	336.2	334.3	332.1	332.2	324.8	322.5	325.2	

<sup>1</sup>Data for June 1985 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication. r = revised.

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

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1984	1984			1985									
			Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June <sup>1</sup>	July	Aug.	Sept.	Oct.
<b>MINING</b>															
1092	Mercury ores (12/75 = 100)	264.3	271.6	276.6	267.9	264.1	262.1	262.1	260.0	243.7	256.6	264.6	270.8	270.8	270.8
1311	Crude petroleum and natural gas	913.7	916.2	906.2	901.6	880.3	878.0	865.7	870.4	887.6	878.1	869.1	859.5	862.5	859.9
<b>MANUFACTURING</b>															
2394	Canvas and related products (12/77 = 100)	151.1	152.1	152.1	152.1	152.1	152.1	152.1	151.8	151.8	151.8	152.5	152.5	152.0	152.0
2655	Fiber cans, drums, and similar products (12/75 = 100)	193.7	194.8	197.8	197.8	199.1	200.0	200.0	200.0	199.9	200.0	199.9	199.9	199.9	199.9
3255	Clay refractories	371.9	371.4	378.8	378.8	379.4	379.4	381.3	385.3	389.7	389.7	391.5	391.5	391.6	391.6
3259	Structural clay products, n.e.c.	232.6	232.4	232.4	232.5	237.1	237.0	236.9	237.1	237.1	237.2	238.1	237.7	237.7	237.8
3263	Fine earthenware food utensils	377.5	375.9	378.2	379.4	382.3	383.9	385.2	371.4	374.0	381.0	380.9	368.5	369.5	379.3
3269	Pottery products, n.e.c. (12/75 = 100)	192.1	195.2	195.3	195.3	198.8	199.0	199.3	198.6	197.3	197.5	199.0	198.5	196.9	197.1
3274	Lime (12/75 = 100)	183.0	180.5	182.1	183.0	187.4	185.1	185.1	182.1	182.4	185.4	186.3	186.8	184.5	187.6
3297	Nonclay refractories (12/74 = 100)	219.2	219.9	220.2	220.2	220.5	220.3	220.4	220.3	220.4	220.6	220.6	220.7	220.6	220.7
3671	Electron tubes, receiving type	497.2	492.0	527.2	527.2	546.9	547.1	547.0	546.9	546.9	546.9	546.9	547.1	547.1	547.1
3942	Dolls (12/75 = 100)	134.4	133.6	133.6	133.6	134.6	134.7	134.9	134.9	134.9	134.9	134.5	134.5	134.6	134.6
3955	Carbon paper and inked ribbons (12/75 = 100)	145.7	139.7	139.7	139.7	139.7	139.4	129.5	128.6	126.3	119.2	116.0	114.9	114.9	109.7
3996	Hard surface floor coverings (12/75 = 100)	167.5	169.7	169.7	169.7	172.1	172.1	172.1	172.1	172.1	173.5	175.2	175.2	175.6	175.6

<sup>1</sup>Data for June 1985 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication. r = revised.

## PRODUCTIVITY DATA

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

### Definitions

**Output** is the constant dollar gross product produced by the particular sector. **Output per hour of all persons** (labor productivity) measures the value of goods and services in constant prices produced per hour of labor. **Output per unit of capital services** (capital productivity) measures the value of goods and services in constant dollars per unit of capital services input.

**Multifactor productivity** measures the output per unit of combined labor and capital input. The traditional measure of output per hour reflects changes in capital per hour and a combination of other factors—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. The multifactor productivity measure differs from the familiar BLS measure of output per hour of all persons in that it excludes the effects of the substitution of capital for labor.

**Compensation per hour** includes wages and salaries of employees plus employers' contributions for social insurance and private benefit plans. The data also include an estimate of wages, salaries, and supplementary payments for the self-employed, except for nonfinancial corporations, in which there are no self-employed. **Real compensation per hour** is compensation per hour adjusted by the Consumer Price Index for All Urban Consumers.

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

The **implicit price deflator** is the price index for the gross product of the sector reported. It is derived by dividing the current dollar gross product by the constant dollar figures.

**Hours of all persons** measures the labor input of payroll workers, self-employed persons, and unpaid family workers. **Output per all employee**

**hour** describes labor productivity in nonfinancial corporations where there are no self-employed. The **capital services** input index used in the multifactor productivity computation is developed by BLS from measures of the net stock of physical assets—equipment, structures, land, and inventories—weighted by rental prices for each type of asset. **Combined units of labor and capital input** are computed 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

In the business sector and the nonfarm business sector, the output measure employed in the computation of output per hour is constructed from Gross Domestic Product rather than Gross National Product. Multifactor productivity measures (table 28) for the *private* business and *private* nonfarm business sectors differ from the business and nonfarm business sector measures used in the traditional labor productivity indexes (tables 29–32) in that they exclude the activities of government enterprises. There is no difference in the sector definition for manufacturing.

Output measures for the business sectors 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 from the Bureau of Labor Statistics and the Bureau of Economic Analysis.

The productivity and associated cost measures in the tables 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. For a more complete description of the methodology underlying the multifactor productivity measures, see *Trends in Multifactor Productivity, 1948–81*, Bulletin 2178 (Bureau of Labor Statistics, 1983).

**28. Annual indexes of multifactor productivity and related measures, selected years, 1950-84**

[1977 = 100]

Item	1950	1960	1970	1973	1975	1976	1978	1979	1980	1981	1982	1983	1984
<b>PRIVATE BUSINESS SECTOR</b>													
Productivity:													
Output per hour of all persons	49.7	64.8	86.1	94.8	94.5	97.6	100.5	99.3	98.7	100.6	100.8	103.7	107.1
Output per unit of capital services	98.6	98.5	98.5	103.0	92.0	96.1	101.8	100.3	95.6	94.1	89.6	92.3	97.4
Multifactor productivity	63.6	75.4	90.2	97.5	93.6	97.1	101.0	99.7	97.6	98.3	96.8	99.6	103.7
Output	39.5	53.3	78.3	91.8	88.0	93.7	105.5	107.9	106.4	109.2	106.3	111.1	121.0
Inputs:													
Hours of all persons	79.4	82.2	90.8	96.8	93.1	95.9	105.0	108.6	107.8	108.5	105.4	107.2	113.0
Capital services	40.1	54.1	79.4	89.1	95.7	97.5	103.6	107.5	111.4	116.0	118.7	120.4	124.3
Combined units of labor and capital input	62.1	70.7	86.7	94.1	94.0	96.5	104.5	108.2	109.0	111.0	109.8	111.6	116.8
Capital per hour of all persons	50.4	65.8	87.4	92.0	102.8	101.6	98.7	98.9	103.3	106.9	112.6	112.3	109.9
<b>PRIVATE NONFARM BUSINESS SECTOR</b>													
Productivity:													
Output per hour of all persons	55.6	68.0	86.8	95.3	94.8	97.8	100.6	99.0	98.2	99.6	99.9	103.5	106.3
Output per unit of capital services	98.2	98.4	98.6	103.2	91.7	96.1	101.9	100.1	95.2	93.2	88.7	91.9	96.6
Multifactor productivity	68.1	77.6	90.7	97.9	93.6	97.2	101.0	99.4	97.2	97.4	95.9	99.4	102.9
Output	38.3	52.3	77.8	91.7	87.6	93.6	105.7	108.0	106.4	108.7	105.9	111.3	121.0
Inputs:													
Hours of all persons	69.0	77.0	89.7	96.2	92.4	95.7	105.1	109.1	108.4	109.1	106.0	107.6	113.8
Capital services	39.0	53.2	78.9	88.8	95.6	97.4	103.7	107.9	111.7	116.6	119.4	121.1	125.2
Combined units of labor and capital input	56.2	67.4	85.9	93.6	93.5	96.3	104.6	108.7	109.5	111.6	110.4	112.0	117.5
Capital per hour of all persons	56.6	69.1	88.0	92.4	103.4	101.8	98.7	98.9	103.1	106.8	112.6	112.6	110.1
<b>MANUFACTURING</b>													
Productivity:													
Output per hour of all persons	49.4	60.0	79.2	93.0	93.4	97.6	100.9	101.6	101.7	104.9	107.1	111.6	115.6
Output per unit of capital services	94.5	88.0	91.8	108.2	89.4	96.1	101.5	99.5	90.7	89.9	82.9	87.6	96.0
Multifactor productivity	59.9	67.0	82.3	96.8	92.2	97.1	101.1	101.0	98.8	100.8	100.3	104.9	110.4
Output	38.6	50.7	77.0	95.9	85.4	93.6	105.3	108.2	103.5	106.1	99.3	104.4	115.3
Inputs:													
Hours of all persons	78.2	84.4	97.3	103.1	91.4	95.9	104.4	106.5	101.7	101.1	92.7	93.5	99.8
Capital services	40.9	57.5	83.9	88.6	95.5	97.4	103.8	108.8	114.1	118.0	119.8	119.2	120.2
Combined units of labor and capital input	64.5	75.6	93.5	99.0	92.6	96.3	104.2	107.1	104.8	105.2	99.0	99.5	104.5
Capital per hour of all persons	52.3	68.2	86.2	85.9	104.5	101.6	99.4	102.1	112.2	116.7	129.2	127.5	120.4

**29. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years, 1950-84**

[1977 = 100]

Item	1950	1955	1960	1965	1970	1975	1978	1979	1980	1981	1982	1983	1984
<b>Business sector:</b>													
Output per hour of all persons	50.4	58.3	65.2	78.3	86.2	94.6	100.5	99.3	98.8	100.7	100.9	103.7	107.0
Compensation per hour	20.0	26.4	33.9	41.7	58.2	85.6	108.5	118.7	131.1	143.4	155.0	161.7	168.6
Real compensation per hour	50.5	59.7	69.5	80.1	90.8	96.4	100.8	99.1	96.4	95.5	97.3	98.4	98.4
Unit labor costs	39.8	45.2	52.1	53.3	67.5	90.5	108.0	119.5	132.6	142.4	153.6	156.0	157.6
Unit nonlabor payments	43.4	47.6	50.6	57.6	63.2	90.4	106.7	112.8	119.3	136.7	136.8	145.5	157.0
Implicit price deflator	41.0	46.0	51.6	54.7	66.0	90.4	107.5	117.2	128.1	140.4	147.9	152.4	157.4
<b>Nonfarm business sector:</b>													
Output per hour of all persons	56.3	62.8	68.3	80.5	86.8	94.8	100.6	99.0	98.3	99.8	100.0	103.4	106.2
Compensation per hour	21.9	28.3	35.7	42.8	58.7	86.1	108.6	118.4	130.6	143.1	154.5	162.0	168.7
Real compensation per hour	55.1	64.0	73.1	82.3	91.5	96.9	100.8	98.8	96.0	95.3	97.0	98.6	98.4
Unit labor costs	38.8	45.1	52.3	53.2	67.6	90.8	108.0	119.5	132.8	143.5	154.5	156.6	158.8
Unit nonlabor payments	42.7	47.8	50.4	58.0	63.8	88.5	105.3	110.4	118.6	135.0	136.9	147.0	156.9
Implicit price deflator	40.1	46.0	51.6	54.8	66.3	90.0	107.1	116.5	128.1	140.6	148.6	153.4	158.2
<b>Nonfinancial corporations:</b>													
Output per hour of all persons	(1)	(1)	68.0	82.0	87.4	95.5	100.8	100.6	99.7	101.6	102.6	106.1	108.5
Compensation per hour	(1)	(1)	37.0	43.9	59.4	86.1	108.4	118.6	130.8	143.1	154.6	161.0	166.6
Real compensation per hour	(1)	(1)	75.8	84.3	92.7	97.0	100.7	99.0	96.2	95.3	97.0	97.9	97.2
Unit labor costs	(1)	(1)	54.4	53.5	68.0	90.2	107.5	117.8	131.2	140.9	150.6	151.8	153.6
Unit nonlabor payments	(1)	(1)	54.6	60.8	63.1	90.8	104.2	106.9	117.4	135.1	138.1	149.1	158.8
Implicit price deflator	(1)	(1)	54.5	56.1	66.3	90.4	106.4	114.1	126.4	138.9	146.3	150.9	155.4
<b>Manufacturing:</b>													
Output per hour of all persons	49.4	56.4	60.0	74.6	79.2	93.4	100.9	101.6	101.7	104.9	107.1	111.6	115.6
Compensation per hour	21.5	28.8	36.7	42.8	57.6	85.5	108.3	118.8	132.7	145.2	158.0	163.4	169.4
Real compensation per hour	54.0	65.1	75.1	82.3	89.8	96.2	100.6	99.2	97.6	96.8	99.2	99.4	98.8
Unit labor costs	43.4	51.0	61.1	57.5	72.7	91.5	107.3	117.0	130.5	138.4	147.6	146.4	146.5
Unit nonlabor payments	54.3	58.6	61.1	69.4	65.1	87.3	102.7	99.9	97.9	111.6	110.5	128.8	140.3
Implicit price deflator	46.6	53.2	61.1	61.0	70.5	90.3	106.0	112.0	120.9	130.6	136.7	141.2	144.7

1 Not available.

### 30. Annual changes in productivity, hourly compensation, unit costs, and prices, 1974-84

Item	Year											Annual rate of change	
	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1950-84	1974-84
<b>Business sector:</b>													
Output per hour of all persons	-2.4	2.2	3.3	2.4	0.5	-1.2	-0.5	1.9	0.2	2.7	3.2	2.2	1.5
Compensation per hour	9.4	9.6	8.5	7.7	8.5	9.4	10.4	9.4	8.1	4.3	4.2	6.5	8.0
Real compensation per hour	-1.4	0.5	2.6	1.2	0.8	-1.7	-2.7	-0.9	1.9	1.1	0.0	2.0	0.3
Unit labor costs	12.1	7.3	5.1	5.1	8.0	10.7	11.0	7.3	7.9	1.6	1.0	4.1	6.4
Unit nonlabor payments	4.4	15.1	4.0	6.4	6.7	5.8	5.7	14.6	0.1	6.3	7.9	3.9	7.2
Implicit price deflator	9.5	9.8	4.7	5.6	7.5	9.0	9.3	9.6	5.3	3.0	3.2	4.0	6.7
<b>Nonfarm business sector:</b>													
Output per hour of all persons	-2.5	2.0	3.2	2.2	0.6	-1.5	-0.7	1.5	0.2	3.5	2.7	1.9	1.3
Compensation per hour	9.4	9.6	8.1	7.5	8.6	9.0	10.3	9.6	8.0	4.9	4.1	6.2	8.0
Real compensation per hour	-1.4	0.4	2.2	1.0	0.8	-2.0	-2.8	-0.7	1.7	1.6	-0.1	1.7	0.2
Unit labor costs	12.2	7.5	4.7	5.2	8.0	10.7	11.1	8.0	7.7	1.4	1.4	4.2	6.5
Unit nonlabor payments	5.9	16.7	5.7	6.9	5.3	4.8	7.4	13.8	1.4	7.4	6.7	3.9	7.5
Implicit price deflator	10.2	10.3	5.1	5.7	7.1	8.8	10.0	9.8	5.7	3.2	3.1	4.1	6.8
<b>Nonfinancial corporations:</b>													
Output per hour of all employees	-3.7	2.9	2.9	1.8	0.8	-0.2	-0.9	1.9	1.0	3.3	2.3	(1)	1.5
Compensation per hour	9.4	9.6	7.9	7.6	8.4	9.4	10.3	9.4	8.0	4.2	3.5	(1)	8.3
Real compensation per hour	-1.5	0.4	2.0	1.1	0.7	-1.7	-2.8	-0.9	1.8	0.9	-0.8	(1)	0.2
Unit labor costs	13.6	6.5	4.9	5.7	7.5	9.6	11.3	7.4	6.9	0.8	1.1	(1)	6.7
Unit nonlabor payments	7.1	20.1	4.6	5.3	4.2	2.6	9.8	15.1	2.3	7.9	6.5	(1)	7.8
Implicit price deflator	11.4	10.9	4.8	5.6	6.4	7.2	10.8	9.8	5.3	3.1	3.0	(1)	7.1
<b>Manufacturing:</b>													
Output per hour of all persons	-2.4	2.9	4.5	2.5	0.9	0.7	0.2	3.1	2.1	4.3	3.5	2.5	2.5
Compensation per hour	10.6	11.9	8.0	8.3	8.3	9.7	11.7	9.4	8.8	3.4	3.6	6.3	8.3
Real compensation per hour	-0.3	2.5	2.1	1.8	0.6	-1.4	-1.6	-0.9	2.5	0.2	-0.6	1.8	0.5
Unit labor costs	13.3	8.8	3.4	5.7	7.3	9.0	11.5	6.1	6.6	-0.8	0.1	3.6	5.7
Unit nonlabor payments	-1.8	25.9	7.5	6.5	2.7	-2.6	-2.1	14.1	-1.0	16.5	8.9	2.8	7.3
Implicit price deflator	9.0	13.1	4.6	6.0	6.0	5.7	7.9	8.0	4.7	3.3	2.5	3.4	6.1

<sup>1</sup> Not available.

r = revised.

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

[1977 = 100]

Item	Annual average		Quarterly indexes											
	1983	1984	1983				1984				1985			
			I	II	III	IV	I	II	III	IV	I	II	III	
<b>Business sector:</b>														
Output per hour of all persons	103.7	107.0	102.2	103.6	104.3	104.7	105.7	107.0	107.2	108.0	106.9	107.3	107.3	P108.1
Compensation per hour	161.7	168.6	160.2	161.0	161.8	164.2	166.7	167.5	169.3	171.1	173.1	174.5	176.2	P176.9
Real compensation per hour	98.4	98.4	99.0	98.5	97.9	98.4	96.6	98.2	98.3	98.5	98.9	98.6	99.4	P99.4
Unit labor costs	156.0	157.6	156.8	155.4	155.1	156.8	157.7	156.5	158.0	158.4	161.9	162.6	163.6	P163.6
Unit nonlabor payments	145.5	157.0	139.8	144.6	147.9	149.1	151.6	157.2	158.5	160.2	159.1	159.9	161.2	P161.2
Implicit price deflator	152.4	157.4	151.0	151.7	152.7	154.2	155.6	156.7	158.1	159.0	160.9	161.7	162.8	P162.8
<b>Nonfarm business sector:</b>														
Output per hour of all persons	103.4	106.2	101.6	103.6	104.1	104.4	105.2	106.6	106.3	106.9	106.0	106.3	106.7	P106.7
Compensation per hour	162.0	168.7	160.1	161.5	162.4	164.0	166.5	168.0	169.5	171.0	173.1	174.6	176.2	P176.2
Real compensation per hour	98.6	98.4	99.0	98.8	98.3	98.3	98.4	98.4	98.4	98.5	98.9	98.7	99.0	P99.0
Unit labor costs	156.6	158.8	157.6	155.9	155.9	157.1	158.3	157.6	159.5	160.0	163.3	164.1	165.2	P165.2
Unit nonlabor payments	147.0	156.9	140.6	146.4	149.4	151.4	152.2	156.8	158.0	160.3	160.3	161.8	163.7	P163.7
Implicit price deflator	153.4	158.2	151.9	152.7	153.8	155.2	156.3	157.3	159.0	160.1	162.3	163.4	164.7	P164.7
<b>Nonfinancial corporations:</b>														
Output per hour of all employees	106.1	108.5	104.0	105.8	107.2	107.2	108.1	108.9	108.2	108.8	108.1	108.1	108.1	(1)
Compensation per hour	161.0	166.6	159.2	160.6	161.8	162.6	164.8	165.8	167.1	168.7	170.3	171.6	176.2	(1)
Real compensation per hour	97.9	97.2	98.4	98.2	97.9	97.4	97.5	97.2	97.1	97.1	97.3	97.0	97.0	(1)
Total unit costs	155.2	156.4	156.7	155.2	154.4	154.7	155.0	155.0	157.5	158.0	160.2	161.6	161.6	(1)
Unit labor costs	151.8	153.6	153.1	151.7	150.9	151.7	152.5	152.3	154.5	155.0	157.5	158.8	158.8	(1)
Unit nonlabor costs	164.9	164.3	167.0	165.1	164.4	163.3	162.0	162.8	165.9	166.4	168.1	169.8	169.8	(1)
Unit profits	117.2	147.6	92.5	111.8	126.6	135.9	143.2	151.1	145.3	150.7	150.4	148.9	148.9	(1)
Implicit price deflator	150.9	155.4	149.4	150.2	151.2	152.6	153.6	154.6	156.1	157.1	159.1	160.2	160.2	(1)
<b>Manufacturing:</b>														
Output per hour of all persons	111.6	115.6	110.0	110.9	113.0	112.7	114.2	114.8	116.7	116.5	116.7	118.6	119.3	P119.3
Compensation per hour	163.4	169.4	162.7	163.0	163.5	164.6	167.1	168.3	169.9	172.1	174.4	176.5	177.8	P177.8
Real compensation per hour	99.4	98.8	100.6	99.6	98.9	98.6	98.8	98.6	98.7	99.1	99.6	99.7	99.9	P99.9
Unit labor costs	146.4	146.5	147.9	147.0	144.7	146.1	146.3	146.6	145.5	147.7	149.5	148.8	149.0	P149.0

<sup>1</sup> Not available.

p = preliminary.

r = revised.

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

Item	Quarterly percent change at annual rate						Percent change from same quarter a year ago					
	I 1984 to II 1984	II 1984 to III 1984	III 1984 to IV 1984	IV 1984 to I 1985	I 1985 to II 1985	II 1985 to III 1985	II 1983 to II 1984	III 1983 to III 1984	IV 1983 to IV 1984	I 1984 to I 1985	II 1984 to II 1985	III 1984 to III 1985
<b>Business sector:</b>												
Output per hour of all persons . . . . .	4.9	0.6	3.1	-3.9	<sup>r</sup> 1.5	P3.0	3.3	2.7	3.2	1.1	0.3	P0.9
Compensation per hour . . . . .	1.9	4.4	4.4	4.8	3.3	P5.6	4.0	4.6	4.2	3.8	4.2	P4.5
Real compensation per hour . . . . .	-1.8	0.7	0.8	1.4	-0.9	P3.1	-0.3	0.4	0.1	0.3	0.5	P1.1
Unit labor costs . . . . .	-2.9	3.7	1.2	9.1	<sup>r</sup> 1.7	P2.6	0.7	1.9	1.0	2.7	3.9	P3.6
Unit nonlabor payments . . . . .	15.4	3.4	4.3	-2.6	<sup>r</sup> 2.1	P3.2	8.7	7.1	7.4	4.9	1.8	P1.7
Implicit price deflator . . . . .	2.9	3.6	2.2	5.0	<sup>r</sup> 1.8	P2.8	3.3	3.6	3.1	3.4	3.2	P2.9
<b>Nonfarm business sector:</b>												
Output per hour of all persons . . . . .	5.5	-1.1	2.2	-3.1	<sup>r</sup> 1.2	P1.2	2.9	2.1	2.4	0.8	<sup>r</sup> -0.2	P0.4
Compensation per hour . . . . .	3.7	3.6	3.7	5.0	<sup>r</sup> 3.4	P3.9	4.0	4.4	4.3	4.0	3.9	P4.0
Real compensation per hour . . . . .	0.0	0.1	0.1	1.7	-0.8	P1.4	-0.3	0.2	0.2	0.4	0.2	P0.6
Unit labor costs . . . . .	-1.7	4.7	1.4	8.4	<sup>r</sup> 2.1	P2.7	1.1	2.3	1.9	3.1	<sup>r</sup> 4.1	P3.6
Unit nonlabor payments . . . . .	12.5	3.1	5.9	0.1	<sup>r</sup> 3.7	P4.9	7.1	5.7	5.9	5.3	3.2	P3.6
Implicit price deflator . . . . .	2.8	4.2	2.9	5.5	<sup>r</sup> 2.7	P3.4	3.0	3.4	3.2	3.8	3.8	P3.6
<b>Nonfinancial corporations:</b>												
Output per hour of all employees . . . . .	2.8	-2.5	2.5	-2.5	-0.3	( <sup>1</sup> )	2.9	0.9	1.6	0.0	-0.7	( <sup>1</sup> )
Compensation per hour . . . . .	2.4	3.2	3.7	3.9	<sup>r</sup> 3.0	( <sup>1</sup> )	3.3	3.3	3.8	3.3	3.5	( <sup>1</sup> )
Real compensation per hour . . . . .	-1.3	-0.4	0.2	0.6	-1.2	( <sup>1</sup> )	-1.0	-0.9	-0.3	<sup>r</sup> -0.2	-0.2	( <sup>1</sup> )
Total units costs . . . . .	0.2	6.5	1.2	5.9	3.5	( <sup>1</sup> )	-0.1	2.0	2.1	3.4	<sup>r</sup> 4.3	( <sup>1</sup> )
Unit labor costs . . . . .	-0.4	5.9	1.2	6.6	<sup>r</sup> 3.3	( <sup>1</sup> )	0.4	2.4	2.2	3.3	4.2	( <sup>1</sup> )
Unit nonlabor costs . . . . .	2.0	8.0	1.1	4.0	<sup>r</sup> 4.3	( <sup>1</sup> )	-1.4	0.9	1.9	3.8	4.3	( <sup>1</sup> )
Unit profits . . . . .	23.8	-14.5	16.0	-1.0	<sup>r</sup> 3.9	( <sup>1</sup> )	35.2	14.7	10.9	5.0	<sup>r</sup> -1.5	( <sup>1</sup> )
Implicit price deflator . . . . .	2.6	3.9	2.7	5.1	<sup>r</sup> 2.7	( <sup>1</sup> )	2.9	3.2	3.0	3.6	3.6	( <sup>1</sup> )
<b>Manufacturing:</b>												
Output per hour of all persons . . . . .	2.2	6.8	-0.6	0.4	<sup>r</sup> 6.8	P2.4	3.6	3.3	3.4	2.1	<sup>r</sup> 3.3	P2.2
Compensation per hour . . . . .	2.9	3.7	5.2	5.6	4.8	P2.9	3.3	3.9	4.5	4.4	4.8	P4.6
Real compensation per hour . . . . .	-0.8	0.1	1.6	2.2	0.6	P0.5	-1.0	-0.3	0.4	0.8	1.1	P1.2
Unit labor costs . . . . .	-0.7	-2.8	5.9	5.1	<sup>r</sup> -1.9	P0.5	-0.3	0.6	1.0	2.2	<sup>r</sup> 1.5	P2.4

<sup>1</sup>Not available.

 r = revised.  
 p = preliminary

## WAGE AND COMPENSATION DATA

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

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

### Definitions

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

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

**Data on negotiated wage changes** apply to private nonfarm industry collective bargaining agreements covering 1,000 workers or more. Data on compensation changes apply only to those agreements covering 5,000 workers or more. *First-year* wage or compensation changes refer to average negotiated changes for workers covered by settlements reached in the period

and implemented within the first 12 months after the effective date of the agreement. *Changes over the life of the agreement* refer to all adjustments specified in the contract, expressed as an average annual rate. These measures exclude wage changes that may occur under cost-of-living adjustment clauses, that are triggered by movements in the Consumer Price Index. *Wage-rate changes* are expressed as a percent of straight-time hourly earnings; *compensation changes* are expressed as a percent of total wages and benefits.

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

### Notes on the data

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

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

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

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

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

**33. Employment Cost Index, by occupation and industry group**

[June 1981 = 100]

Series	1983		1984				1985			Percent change	
	Sept.	Dec.	March	June	Sept.	Dec.	March	June	Sept.	3 months ended	12 months ended
										September 1985	
<b>Civilian workers<sup>1</sup></b> . . . . .	116.5	117.8	119.8	120.8	122.4	123.9	125.5	126.4	128.4	1.6	4.9
Workers, by occupational group											
White-collar workers . . . . .	117.6	118.9	120.9	122.1	124.0	125.5	127.3	128.3	130.7	1.9	5.4
Blue-collar workers . . . . .	114.8	115.8	117.7	118.6	119.6	120.9	122.2	123.1	124.4	1.1	4.0
Service workers . . . . .	116.7	119.1	122.0	122.1	124.6	126.8	127.8	128.0	130.9	2.3	5.1
Workers, by industry division											
Manufacturing . . . . .	115.0	116.0	117.9	119.1	120.4	122.0	123.9	124.6	125.5	0.7	4.2
Nonmanufacturing . . . . .	117.2	118.6	120.7	121.6	123.3	124.8	126.2	127.2	129.7	2.0	5.2
Services . . . . .	121.1	122.6	125.0	125.5	128.8	130.9	131.9	132.6	136.4	2.9	5.9
Public administration <sup>2</sup> . . . . .	119.8	121.4	122.9	123.7	126.9	128.6	130.1	130.3	134.2	3.0	5.8
<b>Private industry workers</b> . . . . .	115.6	117.0	119.0	120.1	121.1	122.7	124.2	125.2	126.8	1.3	4.7
Workers, by occupational group											
White-collar workers . . . . .	116.5	117.9	119.9	121.4	122.4	123.9	125.8	127.1	128.8	1.3	5.2
Blue-collar workers . . . . .	114.6	115.7	117.5	118.4	119.3	120.6	121.9	122.8	124.0	1.0	3.9
Service workers . . . . .	115.1	117.9	121.5	121.2	123.2	125.7	126.3	126.5	128.8	1.8	4.5
Workers, by industry division											
Manufacturing . . . . .	115.0	116.0	117.9	119.1	120.4	122.0	123.9	124.6	125.5	.7	4.2
Nonmanufacturing . . . . .	116.0	117.5	119.6	120.7	121.6	123.1	124.4	125.6	127.6	1.6	4.9
<b>State and local government workers</b> . . . . .	120.8	122.0	123.9	124.4	128.8	130.1	131.7	132.0	136.5	3.4	6.0
Workers, by occupational group											
White-collar workers . . . . .	121.5	122.6	124.5	125.0	129.7	131.1	132.5	132.9	137.6	3.5	6.1
Blue-collar workers . . . . .	118.0	119.2	121.9	122.3	125.0	125.9	128.1	128.5	131.9	2.6	5.5
Workers, by industry division											
Services . . . . .	121.7	122.6	124.5	125.0	129.9	131.3	132.8	133.2	137.9	3.5	6.2
Schools . . . . .	121.9	122.6	124.5	124.7	130.6	132.0	133.4	133.7	139.1	4.0	6.5
Elementary and secondary . . . . .	123.3	123.9	125.4	125.7	132.1	133.5	134.4	134.6	140.9	4.7	6.7
Hospitals and other services <sup>3</sup> . . . . .	121.1	122.6	124.4	125.7	127.9	129.2	131.1	131.5	134.1	2.0	4.8
Public administration <sup>2</sup> . . . . .	119.8	121.4	122.9	123.7	126.9	128.6	130.1	130.3	134.2	3.0	5.8

<sup>1</sup>Excludes farm, household, and Federal workers.

<sup>3</sup>Includes, for example, library, social, and health services.

<sup>2</sup>Consists of legislative, judicial, administrative, and regulatory activities.

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

[June 1981 = 100]

Series	1983		1984				1985			Percent change	
	Sept.	Dec.	March	June	Sept.	Dec.	March	June	Sept.	3 months ended	12 months ended
										September 1985	
<b>Civilian workers<sup>1</sup></b> .....	115.3	116.5	117.9	118.8	120.3	121.7	123.1	124.2	126.3	1.7	5.0
Workers, by occupational group											
White-collar workers .....	116.7	117.9	119.3	120.4	122.2	123.5	125.2	126.4	128.8	1.9	5.4
Blue-collar workers .....	113.1	114.0	115.3	116.1	117.0	118.2	119.3	120.5	122.0	1.2	4.3
Service workers .....	115.1	117.4	120.0	119.8	122.3	124.3	124.8	125.3	128.0	2.2	4.7
Workers, by industry division											
Manufacturing .....	113.3	114.5	115.7	116.8	118.0	119.5	121.0	122.3	123.2	0.7	4.4
Nonmanufacturing .....	116.1	117.4	118.9	119.7	121.3	122.6	123.9	125.0	127.6	2.1	5.2
Services .....	120.1	121.3	123.3	123.8	127.2	128.9	129.7	130.5	134.2	2.8	5.5
Public administration <sup>2</sup> .....	118.2	119.4	120.4	121.3	124.4	125.7	127.0	127.2	131.4	3.3	5.6
<b>Private Industry workers</b> .....	114.5	115.8	117.2	118.2	119.2	120.6	122.0	123.3	124.9	1.3	4.8
Workers, by occupational group											
White-collar workers .....	115.9	117.2	118.5	119.9	120.9	122.3	124.0	125.5	127.3	1.4	5.3
Professional and technical workers .....	119.9	120.4	122.2	123.8	125.2	127.3	127.7	128.7	131.2	1.9	4.8
Managers and administrators .....	114.8	115.7	118.0	119.2	121.0	122.2	123.8	126.5	127.7	.9	5.5
Salesworkers .....	108.4	111.2	110.2	111.9	110.5	111.6	116.3	117.4	119.3	1.6	8.0
Clerical workers .....	116.7	118.3	119.8	120.7	122.0	122.9	124.7	125.6	127.1	1.2	4.2
Blue-collar workers .....	112.9	113.9	115.1	115.9	116.7	118.0	119.1	120.3	121.7	1.2	4.3
Craft and kindred workers .....	114.3	115.4	116.5	117.3	118.0	119.4	120.8	122.0	123.7	1.4	4.8
Operatives, except transport .....	112.3	113.6	114.9	115.8	116.6	117.9	118.9	120.1	121.1	.8	3.9
Transport equipment operatives .....	110.7	110.2	111.7	112.7	113.4	114.0	114.5	115.7	117.7	1.7	3.8
Nonfarm laborers .....	110.8	112.1	112.9	114.1	114.7	115.9	116.7	118.5	118.6	.1	3.4
Service workers .....	113.7	116.5	119.8	119.3	121.2	123.7	123.8	124.4	126.3	1.5	4.2
Workers, by industry division											
Manufacturing .....	113.3	114.5	115.7	116.8	118.0	119.5	121.0	122.3	123.2	.7	4.4
Durables .....	112.9	114.4	115.7	116.6	117.7	119.1	120.6	122.0	122.7	.6	4.2
Nondurables .....	113.9	114.6	115.8	117.1	118.6	120.2	121.6	122.6	124.0	1.1	4.6
Nonmanufacturing .....	115.2	116.5	118.0	119.0	119.9	121.2	122.6	123.9	125.9	1.6	5.0
Construction .....	112.2	112.9	113.3	114.0	114.3	114.4	115.5	116.6	117.3	.6	2.6
Transportation and public utilities .....	115.7	116.8	118.5	119.3	119.9	120.7	121.7	122.8	124.8	1.6	4.1
Wholesale and retail trade .....	111.5	112.3	114.3	116.0	116.5	118.1	118.8	121.1	122.7	1.3	5.3
Wholesale trade .....	115.7	116.5	118.2	120.0	120.7	122.9	123.7	126.8	127.7	.7	5.8
Retail trade .....	109.9	110.6	112.8	114.4	114.9	116.2	116.9	118.9	120.8	1.6	5.1
Finance, insurance, and real estate .....	113.5	116.9	116.1	116.9	115.3	115.8	122.0	121.7	124.1	2.0	7.6
Services .....	120.4	121.9	124.2	124.7	127.1	129.5	129.9	131.0	133.9	2.2	5.4
<b>State and local government workers</b> .....	119.2	120.0	121.6	122.0	126.1	127.1	128.4	128.7	133.2	3.5	5.6
Workers, by occupational group											
White-collar workers .....	119.8	120.6	122.2	122.5	127.1	128.0	129.3	129.6	134.3	3.6	5.7
Blue-collar workers .....	116.4	116.9	119.1	119.6	121.9	122.5	124.2	124.5	127.9	2.7	4.9
Workers, by industry division											
Services .....	119.8	120.6	122.2	122.5	127.2	128.1	129.4	129.7	134.5	3.7	5.7
Schools .....	119.9	120.6	122.2	122.3	127.8	128.7	129.9	130.2	135.8	4.3	6.3
Elementary and secondary .....	121.1	121.7	122.9	123.0	129.3	130.2	130.8	131.1	137.5	4.9	6.3
Hospitals and other services <sup>3</sup> .....	119.7	120.6	121.9	123.1	125.1	125.9	127.7	128.0	130.2	1.7	4.1
Public administration <sup>2</sup> .....	118.2	119.4	120.4	121.3	124.4	125.7	127.0	127.2	131.4	3.3	5.6

<sup>1</sup>Excludes farm, household, and Federal workers.

<sup>2</sup>Consists of legislative, judicial, administrative, and regulatory activities.

<sup>3</sup>Includes, for example, library, social, and health services.

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

[June 1981 = 100]

Series	1983		1984				1985			Percent change	
	Sept.	Dec.	March	June	Sept.	Dec.	March	June	Sept.	3 months ended	12 months ended
										September 1985	
<b>COMPENSATION</b>											
Workers, by bargaining status <sup>1</sup>											
Union	117.8	118.8	120.6	121.7	122.6	123.9	124.8	125.5	126.5	0.8	3.2
Manufacturing	116.3	117.2	119.3	120.5	121.6	123.2	124.2	124.2	125.0	.6	2.8
Nonmanufacturing	119.2	120.4	121.9	122.8	123.6	124.5	125.3	126.6	127.8	.9	3.4
Nonunion	114.4	115.9	118.0	119.2	120.3	121.9	123.8	125.0	126.8	1.4	5.4
Manufacturing	113.8	114.9	116.6	117.9	119.3	120.8	123.6	124.8	125.7	.7	5.4
Nonmanufacturing	114.7	116.4	118.6	119.8	120.7	122.4	123.9	125.1	127.3	1.8	5.5
Workers, by region <sup>1</sup>											
Northeast	116.0	117.5	118.9	120.7	122.4	123.8	125.1	126.4	128.8	1.9	5.2
South	115.6	117.1	119.7	120.7	120.7	122.2	124.2	125.2	126.5	1.0	4.8
North Central	113.9	114.7	117.2	117.9	119.7	120.8	122.0	122.7	124.2	1.2	3.8
West	118.0	120.0	121.0	122.2	122.5	124.9	126.8	127.9	129.1	.9	5.4
Workers, by area size <sup>1</sup>											
Metropolitan areas	116.0	117.4	119.4	120.6	121.5	123.2	124.7	125.7	123.7	1.3	4.8
Other areas	113.4	114.5	116.7	117.4	119.0	119.8	121.4	122.5	123.9	1.1	4.1
<b>WAGES AND SALARIES</b>											
Workers, by bargaining status <sup>1</sup>											
Union	116.0	116.9	118.1	119.0	119.8	120.9	121.7	123.0	124.1	.9	3.6
Manufacturing	113.7	114.8	116.1	117.1	118.1	119.5	120.4	121.7	122.8	.9	4.0
Nonmanufacturing	118.3	118.9	120.1	120.7	121.3	122.1	122.8	124.1	125.3	1.0	3.3
Nonunion	113.7	115.2	116.7	117.8	118.8	120.4	122.1	123.4	125.2	1.5	5.4
Manufacturing	113.0	114.2	115.4	116.5	117.9	119.5	121.5	122.8	123.7	.7	4.9
Nonmanufacturing	114.0	115.6	117.2	118.3	119.2	120.7	122.3	123.6	125.9	1.9	5.6
Workers, by region <sup>1</sup>											
Northeast	115.3	116.6	117.4	118.9	120.5	121.9	123.0	124.6	126.8	1.8	5.2
South	114.3	115.7	117.9	119.0	119.0	120.2	122.3	123.4	124.8	1.1	4.9
Midwest (formerly North Central)	112.8	113.6	115.5	116.0	117.8	118.7	119.6	121.1	122.5	1.2	4.0
West	116.5	118.5	118.8	119.6	120.0	122.5	124.0	125.1	126.6	1.2	5.5
Workers, by area size <sup>1</sup>											
Metropolitan areas	114.9	116.2	117.6	118.6	119.5	121.0	122.4	123.8	125.5	1.4	5.0
Other areas	112.3	113.4	115.1	116.0	117.5	118.3	119.6	120.6	121.9	1.1	3.7

<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 *BLS Handbook of Methods*, Bulletin 1910.

### 36. Wage and compensation change, major collective bargaining settlements, 1980 to date

[In percent]

Measure	Annual average					Quarterly average								
						1983		1984				1985 <sup>p</sup>		
	1980	1981	1982	1983	1984	III	IV	I	II	III	IV	I	II	III
Total compensation changes, covering 5,000 workers or more, all industries:														
First year of contract	10.4	10.2	3.2	3.4	3.6	5.0	4.9	5.1	3.5	2.7	3.7	4.4	3.5	1.7
Annual rate over life of contract	7.1	8.3	2.8	3.0	2.8	4.3	3.1	4.7	3.2	3.1	2.0	4.0	3.5	2.9
Wage rate changes covering at least 1,000 workers, all industries:														
First year of contract	9.5	9.8	3.8	2.6	2.4	3.7	4.2	2.8	2.6	2.1	2.3	3.4	2.5	1.7
Annual rate over life of contract	7.1	7.9	3.6	2.8	2.4	3.6	2.8	3.3	2.7	2.6	1.5	3.2	2.9	2.9
Manufacturing:														
First year of contract	7.4	7.2	2.8	0.4	2.3	3.4	2.9	2.5	2.6	2.3	2.2	0.7	1.4	0.5
Annual rate over life of contract	5.4	6.1	2.6	2.1	1.5	3.5	3.1	2.5	2.8	2.5	1.0	1.5	2.4	2.3
Nonmanufacturing (excluding construction):														
First year of contract	9.5	9.8	4.3	5.0	3.4	5.8	4.8	4.2	4.3	2.0	3.9	3.7	2.9	1.7
Annual rate over life of contract	6.6	7.3	4.1	3.7	3.8	4.3	2.7	4.8	4.2	2.8	3.8	4.4	3.4	4.2
Construction:														
First year of contract	13.6	13.5	6.5	1.5	.5	1.5	1.1	-3.6	1.1	2.0	-2.8	-1.0	1.5	2.1
Annual rate over life of contract	11.5	11.3	6.3	2.4	1.0	2.9	2.6	-2.8	1.4	2.1	-.8	.6	2.2	2.3

p = preliminary.

### 37. Effective wage adjustments in collective bargaining units covering 1,000 workers or more, 1980 to date

Measure	Year					Year and quarter								
						1983		1984				1985 <sup>p</sup>		
	1980	1981	1982	1983	1984	III	IV	I	II	III	IV	I	II	III
Average percent adjustment (including no change):														
All industries	9.9	9.5	6.8	4.0	3.7	1.2	1.1	0.9	0.9	1.2	0.7	0.7	0.8	1.2
Manufacturing	10.2	9.4	5.2	2.7	4.3	1.2	.9	1.2	1.0	1.0	1.1	.9	.6	.7
Nonmanufacturing	9.7	9.5	7.9	4.8	3.3	1.2	1.2	.7	.9	1.3	.4	.7	1.0	1.5
From settlements reached in period	3.6	2.5	1.7	.8	.8	.2	.6	.1	.1	.2	.3	.1	.2	.2
Deferred from settlements reached in earlier period	3.5	3.8	3.6	2.5	2.0	.8	.3	.4	.7	.7	.2	.6	.5	.6
From cost-of-living clauses	2.8	3.2	1.4	.6	.9	.2	.2	.3	.2	.3	.2	.1	.1	.4
Total number of workers receiving wage change (in thousands) <sup>1</sup>	—	8,648	7,852	6,530	6,195	3,025	2,887	2,694	2,482	2,386	1,850	2,017	2,325	2,769
From settlements reached in period	—	2,270	1,907	2,327	1,851	599	996	295	355	406	911	177	517	388
Deferred from settlements reached in earlier period	—	6,267	4,846	3,260	3,668	1,317	669	984	1,148	1,581	443	967	860	1,482
From cost-of-living clauses	—	4,593	3,830	2,327	2,518	1,218	1,290	1,459	1,151	1,215	1,070	990	987	1,689
Number of workers receiving no adjustments (in thousands)	—	145	483	1,187	1,123	4,693	4,830	4,624	4,835	4,932	5,467	4,962	4,654	4,210

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

p = preliminary.

## WORK STOPPAGE DATA

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

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

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

Month and year	Number of stoppages		Workers involved		Days idle	
	Beginning in month or year	In effect during month	Beginning in month or year (in thousands)	In effect during month (in thousands)	Number (in thousands)	Percent of estimated working time
1947	270		1,629		25,720	—
1948	245		1,435		26,127	.22
1949	262		2,537		43,420	.38
1950	424		1,698		30,390	.26
1951	415		1,462		15,070	.12
1952	470		2,746		48,820	.38
1953	437		1,623		18,130	.14
1954	265		1,075		16,630	.13
1955	363		2,055		21,180	.16
1956	287		1,370		26,840	.20
1957	279		887		10,340	.07
1958	332		1,587		17,900	.13
1959	245		1,381		60,850	.43
1960	222		896		13,260	.09
1961	195		1,031		10,140	.07
1962	211		793		11,760	.08
1963	181		512		10,020	.07
1964	246		1,183		16,220	.11
1965	268		999		15,140	.10
1966	321		1,300		16,000	.10
1967	381		2,192		31,320	.18
1968	392		1,855		35,567	.20
1969	412		1,576		29,397	.16
1970	381		2,468		52,761	.29
1971	298		2,516		35,538	.19
1972	250		975		16,764	.09
1973	317		1,400		16,260	.08
1974	424		1,796		31,809	.16
1975	235		965		17,563	.09
1976	231		1,519		23,962	.12
1977	298		1,212		21,258	.10
1978	219		1,006		23,774	.11
1979	235		1,021		20,409	.09
1980	187		795		20,844	.09
1981	145		729		16,908	.07
1982	96		656		9,061	.04
1983	81		909		17,461	.08
1984	62		376		8,499	.04
1984	January	6	28.0	42.9	505.3	.03
	February	3	9.4	42.4	379.5	.02
	March	2	3.0	16.5	296.3	.01
	April	7	28.5	38.4	657.3	.03
	May	5	8.1	39.2	587.6	.03
	June	5	23.7	45.9	761.1	.04
	July	8	70.8	106.4	1,228.0	.06
	August	5	24.2	103.9	1,634.5	.07
	September	10	107.9	122.9	731.0	.04
	October	4	18.0	39.6	562.1	.03
	November	4	12.0	32.3	500.1	.03
	December	3	42.5	59.0	655.8	.04
1985 <sup>p</sup>	January	2	4.7	16.0	278.3	.01
	February	4	29.3	43.9	259.3	.01
	March	4	15.2	48.2	698.5	.03
	April	3	6.2	14.1	229.5	.01
	May	2	6.9	14.8	203.3	.01
	June	2	15.7	28.5	454.3	.02
	July	9	52.3	60.2	500.2	.02
	August	6	15.3	66.8	869.7	.03
	September	11	69.5	93.9	<sup>r</sup> 931.4	.04
	October	4	74.6	117.3	1,433.0	.06

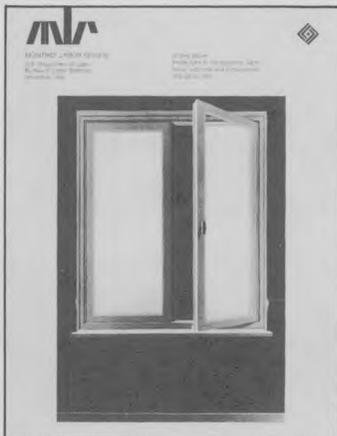
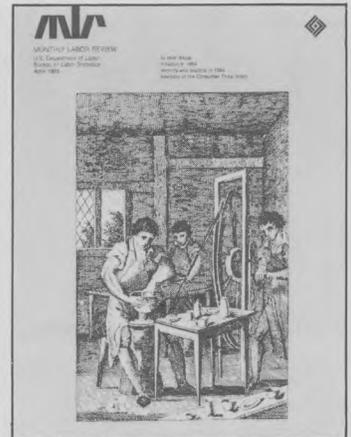
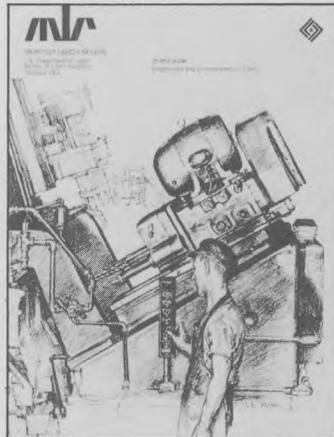
p = preliminary.

r = revised.

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### A smoother ride for auto workers

When a strike threatened in the auto industry in November 1934, Leon Henderson, Chief Economist of the National Recovery Administration, asked [BLS Commissioner Isador] Lubin's help in an investigation. The Bureau conducted a study of wages in the industry, including analyses of annual earnings, employment patterns, and seasonal fluctuations in production. Henderson and Lubin personally interviewed industry representatives. Among their recommendations was one accepted by the auto manufacturers, that new models be brought out in November, rather than in December, to achieve greater regularization of employment.

—JOSEPH P. GOLDBERG AND WILLIAM T. MOYE

*The First Hundred Years of the  
Bureau of Labor Statistics,  
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Joseph P. Goldberg and William T. Moye



U.S. Department of Labor



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